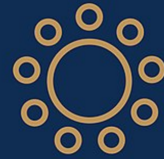

Shardul Amarchand Mangaldas

ISSN (O): 2347 - 3827

RGNUL-SAM CONCLAVE ON BANKING & FINANCE IN INDIA, 2023

SPECIAL ISSUE

2023

RAJIV GANDHI NATIONAL UNIVERSITY OF LAW, PUNJAB

RGNUL FINANCIAL AND MERCANTILE LAW REVIEW

RGNUL-SAM CONCLAVE

ON BANKING & FINANCE IN INDIA, 2023

SPECIAL ISSUE 2023

RAJIV GANDHI NATIONAL UNIVERSITY OF LAW, PUNJAB

RGNUL FINANCIAL AND MERCANTILE LAW REVIEW

[Citation: RFMLR B.F. Sp. Ed. <Page Number> 2023]

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November 2023

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EDITORIAL NOTE

Dear Readers,

On behalf of the Editorial Board of the RGNUL Financial and Mercantile Law Review ("RFMLR"), we are delighted to present the RFMLR Special Issue on Emerging Trends in Banking & Finance in India, 2023 ("Special Issue"). This Special Issue consists of selected entries from the 3rd RGNUL- SAM Conclave on Emerging Trends in Banking & Finance in India, 2023, organized in collaboration with Shardul Amarchand Mangaldas & Co. ("SAM & Co") in April 2023.

The 3rd RGNUL-SAM Conclave provided valuable insights into the current state of the banking and finance sector in India and the potential impact of emerging technologies and regulatory developments. The need for effective regulation, innovative solutions, and greater transparency and accountability to address the challenges facing the banking sector in India was highlighted through this initiative. It consisted of two sessions: A Paper Presentation conducted on April 15th 2023 and an Expert Panel Discussion conducted on April 20th 2023.

Various participants researched and presented novel and practical solutions to the challenges through the Paper Presentation Session. Leading experts from SAM & Co and other professionals in the Banking and Finance sector participated in the Expert Panel Discussion, sharing practical insights into the industry's ever-changing opportunities and lingering challenges.

For the Expert Panel Discussion, the panel included Mr. Anoop Rawat, Ms. Shilpa Mankar Ahluwalia, Ms. Veena Sivaramakrishnan, Mr. Anurag Dwivedi, and Mr. Shantanu Tyagi, partners at SAM & Co, and it was moderated by Mr. Saurav Panda, also a Partner at SAM & Co. The discussion

covered a range of topics that are currently affecting the banking sector in India. One of the key areas of discussion was the rise and recovery of non-performing assets ("NPAs"). The panelists highlighted the challenges faced by banks in managing their NPAs, including the need for effective risk management strategies and the importance of timely resolution of NPAs.

They also discussed the potential impact of emerging technologies, such as artificial intelligence and blockchain, on NPA management and recovery. Another area of focus was regulatory challenges surrounding non-banking financial companies ("NBFCs"). The panelists deliberated discussed the need for effective regulation of NBFCs to ensure their financial stability and prevent systemic risks and.

The panelists also examined the issue of letter of credit fraud in the banking sector. They discussed the various types of fraud that can occur, including identity theft and forgery, and highlighted the importance of effective fraud detection and prevention measures. The expansion of green financing was another topic that was discussed by the panel. The panelists deliberated examined the potential benefits of green financing, such as reducing carbon emissions and promoting sustainable development, and highlighted the need for effective regulation and incentives to encourage greater investment in this area.

Finally, the panelists scrutinized regulatory concerns in the digital payments and digital lending industries. They discussed the potential risks associated with these industries, such as data privacy and security concerns, and highlighted the need for effective regulation to mitigate these risks. This Special Issue is a culmination of thought-provoking and insightful scholarship from various authors on these pertinent challenges, and is the outcome of unwavering commitment and efforts put in by all members of the Editorial

Board. We are also grateful to the esteemed professionals at SAM & Co for their continued support and guidance in this process.

RFMLR has always aimed to provide readers with high-quality legal research and to contribute meaningfully to the existing debate on important topics in the field of various business and commercial laws, and we hope that through this Special Issue, we have taken a step further in this direction. We look forward to hearing from our readers about any feedback and receiving submissions for our next Issues.

Aryan Gupta

Reet Kaur Virk

Managing Editors

(*On Behalf of the Editorial Board)*

TABLE OF CONTENT

I. INDIA'S TRANSITION TOWARDS AN EXPECTED LOSS APPROACH: A STEP IN THE RIGHT DIRECTION?

- *Vinita Singh & Jeeri Sanjana Reddy* *1*

II. CLOSING THE GREEN FINANCE GAP: BRIDGING THE DIVIDE BETWEEN CLIMATE ACTION AND URBAN FINANCING

- *Tejaswini Kaushal*.. *17*

III. REGULATE NOW BENEFIT LATER: SCRUTINIZING THE REGULATORY CONCERNS IN THE BUY NOW PAY LATER INDUSTRY AND SUGGESTING REFORM

- *Hrishikesh Reddy Kothwal*.. *43*

IV. MACRO STRESS TESTING DURING CLIMATE RISKS: REEXPLORING THE TRADITIONAL MECHANISM

- *Akshat Kothari & Alay Raje* *65*

V. CBDC REGULATIONS IN INDIA: THE ROADBLOCKS AND OPPORTUNITIES FOR RBI

- *Shivkant Sharma & Anupriya Dasila*.. *89*

VI. INDIA'S NEW FRAMEWORK ON SOVEREIGN GREEN BONDS: A HIT-AND-MISS?

- *Akshata Modi* *113*

VII. UNIFIED PAYMENT INTERFACE: AN INDIAN SUCCESS STORY OF REVOLUTIONIZING THE PAYMENT INDUSTRY

- *Ananya Bhat*.. *135*

VIII. ARE THE LESSONS LEARNED: REGULATORY REFORMS IN THE INDIAN NBFC SECTOR POST-GREAT INDIAN NBFC CRISIS

- *Deepanshu*.. *157*

I. INDIA'S TRANSITION TOWARDS AN EXPECTED LOSS APPROACH: A STEP IN THE RIGHT DIRECTION?

- Vinita Singh & Jeeri Sanjana Reddy*

ABSTRACT

The Reserve Bank of India (**"RBI"**), as one of the nation's financial and economic watchdogs, is aware of all pertinent elements, including the recent credit trends, which inform its policy decisions. In January 2023, the Reserve Bank of India published a discussion paper proposing a framework for adopting an anticipated credit loss approach for loan loss provisioning by banks in the event of bad loans. The discussion paper does an in-depth analysis of global experience with the adoption and implementation of International Financial Reporting Standard 9 – Financial Instruments (**"IFRS 9"**) accounting standard along with the Expected Credit Loss (**"ECL"**) approach and reasons for exiting from the current Incurred Loss Approach (**"ILA"**) method of loan loss provisioning. While the discussion paper has elaborately crucial elements involved in the very shift from ILA to ECL and related implications of the same, the authors believe that there are certain issues that were not addressed but are inevitable to arise once the shift takes place. The paper throws light on these potential problems that may arise and has tried to suggest measures to deal with them.

I. Introduction 2
II. Loan Loss Provisioning in the Indian Landscape 4
A. Incurred Credit Loss Approach 4
B. Expected Credit Risk Approach 5
III. Key considerations for an Effective Transition to an ECL aprroach................7
A. Capital Adequacy and Credit Shock 8
B. Credit Risk Modelling by Banks-Limitations 12
IV. Conclusion 15

* The authors are third-year students of B.A. LL.B. at Damodaram Sanjivayya National Law University, Visakhapatnam A.P. Views stated in this paper are personal.

I. INTRODUCTION

The Reserve Bank of India (**"RBI"**) is tasked with ensuring the effective management of financial institutions and preventing the deterioration of the Indian banking system. In the interest of the public, it has the authority to issue legally enforceable directions. As part of its supervisory role in monitoring credit risk and regulating banks' capital adequacy, the RBI supervises swift and efficient loan loss provisioning. This is because timely recognition and provisioning for credit losses contribute greatly to the resilience and effectiveness of banking systems and play a crucial role in bank regulation.

During the financial crisis of 2007-2009, it was discovered that the delay in recognizing predictable losses under the 'incurred loss' technique exacerbated the deterioration.[1] Throughout the lead-up to and duration of the financial crisis, this strategy was a significant contributor to the decline in the clarity of banks' financial statements.

Analysing and learning from what led to the global financial crisis, RBI has taken a step towards an expected credit loss (**"ECL")** approach in order to increase the banking system's resilience. [2] Under this approach, a bank is obligated, to estimate probable credit losses based on forward-looking estimates, rather than waiting until actual credit losses are recorded before making loss provisions.[3] It is envisaged that the forward-looking ECL

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[1] Enrico, Onali and Gianluca Ginesti, 'New Accounting Rules for Loan Loss Provisions in Europe: Much Ado about Nothing?' (2015) MPRA <https://mpra.ub.uni-muenchen.de/64266/1/MPRA_paper_64266.pdf> accessed 26 March 2023.

[2] Reserve Bank of India, 'Discussion Paper on Introduction of Expected Credit Loss Framework for Provisioning byBanks' (2022)< https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/DPECL160012023AE79B7B546C94715AA8468B0811096F5.PDF> accessed 26 March 2023.

[3] ibid.

technique will significantly bolster the Indian financial system's resilience in conformity with internationally accepted norms. RBI has proposed to shift to the ECL method and adopt the International Financial Reporting Standard 9 – Financial Instruments (**"IFRS 9"**) accounting system to deal with financial instruments. The same provides for loan loss provisioning.

A 'loan loss provision' is a reserve money set aside by banks for loans that default. To cover losses in full or in part, banks set aside a part of the estimated debt payments from their overall loan portfolio. Instead of incurring a loss in its cash flows in the event of a bad loan, the lender can use its 'loan loss reserves' to offset the loss. Under the ECL method, a bank identifies anticipated credit losses based on 'forward-looking estimations' as opposed to waiting until actual credit losses are recorded before making loss provisions (as is the case in an incurred-loss approach).

Nonetheless, according to the International Monetary Fund, loss provisioning illustrates that rules alone, even complicated ones, are inadequate and must be backed by effective monitoring.[4] In reality, as rule books become more comprehensive and sophisticated, the supervisory approaches and expertise necessary to enforce the regulations become increasingly difficult.[5] Given the detailed manner in which RBI has approached this idea, while the shift to an ECL approach - in line with global trends - may appear to be a straight-jacket and clear shift, the method of transition and its efficacy as contemplated by RBI for the Indian banking system requires a closer look.

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[4] Ellen Gaston and In Won Song, 'Supervisory Roles in Loan Loss Provisioning in Countries Implementing IFRS' (2014) IMF Working Paper 14/170 <https://www.imf.org/external/pubs/ft/wp/2014/wp14170.pdf> accessed 27 March 2023.

[5] José Viñals et al, 'The Making of Good Supervision: Learning to Say "No,"' (2010) IMF Staff Position Note SPN/10/08< https://www.imf.org/external/pubs/ft/spn/2010/spn1008.pdf> accessed 27 March 2023.

II. LOAN LOSS PROVISIONING IN THE INDIAN LANDSCAPE

According to methods for loan loss provision, banking supervisors must review the efficiency of a bank's policies and practises for assessing credit risk and be satisfied with the bank's loan loss provisions, which must be produced in a timely and adequate manner.[6] Prevalent methods of assessing credit risk are the incurred loss and expected loss approaches. The primary distinction between them arises at both the conceptual and operational levels.

Under the incurred loss framework, a bank is supposed to estimate impairment losses based on an evaluation of the occurrence of loss events or 'objective evidence.' In contrast, under the ECL approach, in addition to restrictions, the recognition of credit losses necessitates an evaluation of economic and financial situations as well as the borrower's ability to repay.[7]

A. Incurred Credit Loss Approach

Under the Incurred Loss Approach, the management estimates loan loss if a loss has already been incurred. In other words, no loss is reported on a loan until evidence of the suffered losses is obtained. The incurred loss approach has been criticised frequently as a major cause of the 2007-2010 financial crisis. It was blamed for delivering "too little, too late" loan loss provisions during the crisis and recession.[8] Due to the delay in recognising loan losses in the event of a systemic rise in defaults, banks were forced to maintain larger levels of provisions, which reduced their capital right when

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[6] Basel Committee on Banking Supervision, Guidance on Credit Risk and Accounting for Expected Credit Losses (*Bank for International Settlements,* 2015)< https://www.bis.org/bcbs/publ/d350.htm> accessed 27 March 2023.

[7] Gaston and Song (n 4).

[8] Bert Loudis and Ben Ranish, 'CECL and the Credit Cycle' (2019) FRB < https://www.federalreserve.gov/econres/feds/files/2019061pap.pdf> accessed 27 March 2023.

they needed to grow it resulting in decreased resilience and high systemic risks. Furthermore, the banks' income was overestimated due to the delays in recognising loan losses. This, together with dividend pay-outs, had an impact on the capital base of the banks since internal accruals were lower.[9]

One of the main motivators was also to prevent a situation like the one that occurred during the global financial crisis when banks reported profits and gave out dividends and bonuses despite significant nested credit losses that were not recognised under incurred loss models. It subsequently threatened their ability to continue as going concerns.[10]

The ECL approach of loan loss provisioning on the other hand is anticipatory in nature. Owing to this attribute, it is expected to prepare the banks better in case of any looming economic downturn. Through its proposal to switch to this approach, the RBI attempts to adopt a more stable method of accounting and provisioning for defaults.[11]

B. Expected Credit Risk Approach

Since risk consideration is at the core of the capital framework, which focuses on banks' going concern and solvency issues, it seems reasonable to advocate an ECL, which is a forward-looking approach that is largely based on foreseeing and calculating risks and losses that have not yet occurred but have a high likelihood of occurring. The International Accounting Standards Board (**"IASB"**) and other accounting standard-setters establish guidelines

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[9] Committee on the Global Financial System. 'The Role Of Valuation And Leverage In Procyclicality CGFS Papers No 34' (*Bank for International Settlement* 2009)< https://www.bis.org/publ/cgfs34.htm> accessed 27 March 2023.
[10] Anne Beatty and Scott Liao, 'Financial Accounting In The Banking Industry: A Review Of The Empirical Literature' (2014) JAE
[11] Robert M Bushman and Cristopher D Williams, 'Delayed Expected Loss Recognition and the Risk Profile of Banks' (2015)JAE..

based on accounting principles for how banks should recognise and account for credit losses for the purposes of financial statement reporting. IFRS 9 was issued by the IASB in July 2014, and it included an "expected credit loss" framework for the recognition of impairment.[12] IFRS 9 specifies how financial assets and liabilities should be classified and measured. Its scope encompasses impairment identification.

At every date of reporting, if the likelihood of default on a financial asset has not increased drastically since its initial detection, IFRS 9 mandates that a bank determines the loss allowance for that financial asset using a particular procedure. Therefore, RBI envisions a three-tier classification system for financial assets.[13] Stage 1 consists of financial assets without a material escalation in credit risk since initial recognition or having a low credit risk at the reporting date. Stage 2 involves financial instruments with a substantial increase in credit risk since first recognition, but no objective proof of impairment. At the reporting date, Stage 3 consists of financial assets with objective evidence of impairment.

When one or more events have a detrimental influence on the expected future cash flows of a financial asset, the asset is considered to be "credit impaired". This is relevant for our discussion because institutions are expected to identify ECLs at all times and revise the amount of ECLs recognised regularly.[14] While assessing ECL, the bank must take into account past events, present situations, and projections of future events and economic conditions.

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[12] PWC, 'IFRS 9: Expected Credit Losses' (*PWC*, August 2014) <https://www.pwc.com/gx/en/audit-services/ifrs/publications/ifrs-9/ifrs-in-depth-expected-credit-losses.pdf> accessed 29 March 2023.

[13] RBI (n 2).

[14] PWC (n 12).

Many countries have recently started adopting and switching to the ECL approach. In 2018, the European Union took an exit from the ILA to ECL with the implementation of accounting standard IFRS 9 on relevant financial instruments.[15]

III. KEY CONSIDERATIONS FOR AN EFFECTIVE TRANSITION TO AN ECL APPROACH

Besides the anticipated enhancements to banks' credit risk management, a timelier identification of credit losses is anticipated to contribute significantly to financial stability. In practice, however, this assumption is largely contingent upon the capacity of credit risk models (which, per the discussion paper, will be developed by the banks themselves) to forecast credit volatility and the borrowers who will be most adversely impacted by them.[16] This, in turn, generates 'modelling risk', since the efficiency of such a "customized model for each bank" can vary from one institution to another.[17] Therefore, the shift to this model can turn out to be challenging, particularly, for financial institutions.

Further, loan loss provisioning under the ECL approach can turn out to be abrupt in instances like creating larger loan loss provisions in the event of

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[15] 'Expected credit loss approaches in Europe and the United States: differences from a financial stability perspective' (*European Systematic Risk Board*, January 2019)< https://www.esrb.europa.eu/pub/pdf/reports/esrb.report190116_expectedcreditlossapproachesEuropeUS.en.pdf> accessed on 27 March 2023.

[16] RBI (n 2) 40 – 42.

[17] David Gruenberger, 'Expected Loan Loss Provisions, Business and Credit Cycles' (2012) SSRN.< https://deliverypdf.ssrn.com/delivery.php?ID=156082089114106065092095080114116102002054084092007058124025025088064094014091122096027019013002018046016031089064093072087117059084071008033069117011071095016004094019081083090004082004116103119101115019023083077111020119012095068087029072070102006067&EXT=pdf&INDEX=TRUE> accessed on 27 March 2023.

an initial turning point in the business cycle to prepare for loan impairment in anticipation of future business cycle downturn.

These are a few potential issues that may arise after ECL comes into force that the discussion paper does not throw light on.

A. Capital Adequacy and Credit Shock

There are certain factors that need to be addressed before the implementation of the ECL approach. One such element is mitigating consequences arising out of procyclicality. Procyclicality is a significant issue that all financial institutions face, including banks. It is an economic concept wherein the market behaviour and overall economic indicator exhibit a positive correlation with the overall state of the economy. Any entity is considered pro-cyclical when it moves in tandem with the economic cycle.[18] It results in broad fluctuation in financial variables in the economy.[19] Procyclicality leads to an amplified financial cycle and exacerbated financial instability.

ECL entails doing away with concentrating loan loss provisions at the trough of the economic cycle at the cost of concentrating them during an initial downturn. Due to the forward-looking nature of IFRS 9, the impairment allowances made are large.

The increase in impairment allowance due to a recession will have a raw impact on the common equity tier 1 (**"CET1"**). CET1 constitutes the core

[18] J P Landau, 'Procyclicality – What It Means and What Could Be Done' (*Bank for International Settlement*, 2009)< https://www.bis.org/review/r090805d.pdf> accessed on 27 March 2023.> accessed on 27 March 2023.
[19] 'Addressing Financial System Procyclicality: A Possible Framework' (*Financial Stability Forum*, 2008)< https://www.fsb.org/wp-content/uploads/r_0904a.pdf> accessed on 23 March 2023.

capital of banks. It is one of the bank's three-tier capital structure and constitutes about one-third of a bank's fully-loaded capital conservation buffer (**"CCB"**).[20] It is instrumental in absorbing losses immediately when they occur. The impact of ECL on CET1 and the resultant capital buffer will hence have possible implications on the overall financial stability.

The connection between the build-up of loan loss provisions and loan growth needs to be analysed to understand the possible consequences related to the transition from ILA to ECL. Loan loss reserves are recorded on the bank's balance sheet as a 'contra-asset' account after loan loss provisions accumulate over time. Higher provisioning for loan loss results in an increased loan loss reserve.

In the early stages of the economic cycle, IFRS 9 will focus on the eff ects of credit losses on profit and loss and CET1 ratio, increasing the likeliho od that banks will need to be recapitalized on an annual basis.[21] Insufficiently capitalised banks are more prone to deleverage or sell assets when under severe stress regarding solvency or liquidity. This can in turn lead to further issues in other parts of the interlinked financial system. If financial institutions exhibit such procyclical behaviour and become capital or risk-constrained, the downturn may be significantly amplified.[22] The criteria may therefore restrict lending at banks where short-term capital constraints are severe, adding to procyclicality in the economy. Provisioning will continue to be procyclical

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[20] Jorge Abad and Javier Suarez, 'Assessing the Cyclical Implications Of IFRS 9 – A Recursive Mode' (European Systematic Risk Board, 2017)< https://www.esrb.europa.eu/pub/pdf/occasional/20170717_occasional_paper_12.en.pdf> accessed on 23 March 2023.

[21] ibid.

[22] M Darracq-Pariès, S Fahr and C Kok, 'Macroprudential Space and Current Policy Trade-Offs In The Euro Area' (2019) (*Financial Stability Review,* May 2019) <https://www.ecb.europa.eu/pub/financial-stability/fsr/special/html/ecb.fsrart201905_3~f3ff5a969e.en.html>

despite ECL providing for loan loss reserves because recessions are typically characterised by worse-than-anticipated results.[23] The same needs to be countered by a macroprudential buffer system.

Proposed suggestion

The Bank of Italy conducted a study on the procyclical effects of IFRS 9.[24] The analysis stated that although it is anticipated that IFRS 9 will assist in reducing procyclicality in the economy, it may prove procyclical at the onset of a recession. This is possible if the redistribution of financial assets to stage 2 classification as per the ECL model is excessively high.[25] An economic shock leads to an irregular volatile development in the value of asset price and the development of financial aggregates.[26]

It can be a problem for banks to bring in new capital in the middle of an economic fall and hence might require to either lessen giving out loans or liquidate their investments in order to meet the regulatory capital requirement.[27] In the case of multiple banks following this deleveraging

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[23] A Kashyap and J Stein, 'Cyclical Implications of the Basel II Capital Standards' (2014) 28(1)FRB Chicago <https://www.chicagofed.org/publications/economic-perspectives/2004/1qtr2004-part2-kashyap-stein> accessed on 23 March 2023.
[24] Ezio Caruso et al, 'Accounting Provisioning Under the Expected Credit Loss Framework: IFRS 9 in Emerging Markets and Developing Economies - A Set of Policy Recommendations' (*World Bank Group,* 2021)< https://openknowledge.worldbank.org/entities/publication/455393fb-803f-5461-93a3-5ed4551ad003> accessed on 23 March 2023.
[25] European Systemic Risk Board, 'The Cyclical Behaviour of the ECL Model in IFRS 9' (2019) ESRB <https://www.esrb.europa.eu/pub/pdf/reports/esrb.report190318_reportonthecyclicalbehaviouroftheECLmodel~2347c3b8da.en.pdf.> accessed 20 March 2023.
[26] Federal Reserve Bank of New York, 'New Directions for Understanding Systemic Risk' (*Economic Policy Review,* 2007)< https://www.newyorkfed.org/medialibrary/media/research/epr/2007/EPRvol13n2.pdf> accessed on 23 March.
[27] V Constâncio, et al, 'Macroprudential Policy at the ECB: Institutional Framework, Strategy, Analytical Tools and Policies' (2019) Occasional Paper Series No 227.

process, it can result in a large-scale reduction in loans and an increase in asset price. This will worsen the economic slump leading to a more severe strain on the capital position of banks.

It is for the reasons mentioned above that after the implementation of the proposed shift to ECL through the IFRS 9 accounting system, there will be a need to incorporate mitigating measures like replenishing prudential buffers.

Prudential buffers refer to the mechanism of bolstering a bank's resilience and dealing with any anticipated market shock. Its focus is on financial safety. Basel III, which was developed in response to the 2007–2009 global financial crisis, provides the foundation for a resilient banking sector that can support economic growth throughout the business cycle.[28] One of the components of the Basel III regulatory system is the capital buffer mechanism for banks. Capital buffer is a type of broader prudential buffer mechanism. It involves maintaining capital reserves over and above the minimum capital requirements of a bank. The objective is to absorb any economic shock that may impact the bank's financial system. Capital buffers are crucial in this regard since, among other things, they are designed to reduce procyclicality by serving as shock absorbers during stressful times.

In case ECL does result in a procyclical capital loss, it will be important to address the same through a prudential measure. The European Central Board published the findings of a simulation-based investigation in July, 2020.[29] The results clearly demonstrate the benefits of using buffers,

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[28] Basel Committee on Banking Supervision, *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems* (*Bank for International Settlement*, 2011).
[29] Andrea Enria, 'The Coronavirus Crisis and ECB Banking Supervision: Taking Stock And Looking Ahead' (*European Central Bank*, 28 July 2020).

which increase lending and economic activity. As a result, banks' profitability would increase, primarily due to fewer credit losses.

The countercyclical capital buffer (**"CCyB"**) could be actively used by the national macroprudential authorities to counteract the negative effects of credit supply. The same is provided by the Basel III regulatory capital framework. Essentially, it is a method to accumulate more capital during times of excessive credit growth when it is perceived that the implications of system-wide stress are sharply increasing. When the credit cycle turns, this capital can then be 'released' to absorb losses and allow the banking sector to continue lending through the ensuing slump. It offers an extra advantage of achieving a broader macroprudential goal of limiting excessive lending during an economic boom. This indicates that while the impact will be significant, it will also be appropriately absorbable if the buffer is present when the shock hits.[30]

B. Credit Risk Modelling by Banks-Limitations

RBI proposes to permit banks to adopt customised and unique credit risk models to calculate potential credit losses for different categories of instruments, based on the viability of such modelling methodologies and the availability of relevant data for the particular type of financial instruments.[31] This method is consistent with the enhanced reporting discretion inherent in regulations mandating future loss estimation (such discretion arises from banks assessing credit risk based on their own models). Nevertheless, supervisory loan-level data from Germany demonstrates the limitations of the

[30] Jean-Stéphane Mésonnier and Allen Monks, 'Did the EBA Capital Exercise Cause a Credit Crunch in the Euro Area?' (2014) Working Paper No 491 Banque de France.
[31] RBI (n 2) 40.

ECL approach when banks exercise their reporting discretion and alter their lending patterns.[32]

Empirical models demonstrate that banks routinely change their internal ratings to avoid categorization of stage 2 loans before the new reporting rules go into effect.[33] Avoiding loans that were particularly susceptible to a stage 2 downgrade (a 3% decline in stage 2 loans) was an additional method employed by German banks to lower stage 2 provisions.[34] Therefore, while the conceptual support for customized credit risk modelling is ideal, outcomes clearly demonstrate the drawbacks of this method. Any policy that relies on the internal risk assessment of banks relies on forward-looking data, which is subjective and difficult to verify by its very nature. In a competitive market, banks are driven to use their discretion to limit loss recognition and, ultimately, capital requirements.

Two significant outcomes of the implementation of forward-looking loan loss recognition are supported by German bank behaviour evidence compatible with these incentives. First, banks modify their internal risk analysis of borrowers, particularly for borrowers near provisioning cut-offs, i.e., where the possibility of increasing loan loss recognition is highest. Second, banks restrict loans to customers whose debts are most likely to fall within this range of loans with potentially substantial loss provisions. The overall effect on the banking system therefore goes in opposite directions.

There are also other challenges to such credit-risk modelling. Firstly, management will be required to develop new models for determining ECL for

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[32] Jannis Bischof et al, 'Limitations of Implementing an Expected Credit Loss Model' (2022) Goethe University LawFin Working Paper 48 < https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4325220> accessed 29 March 2023.
[33] ibid.
[34] ibid.

various time periods, including lifetime time periods. This will call for sophisticated assessments (for example, the definition of default, the definition of low credit risk and the behavioural life of revolving credit facilities). Therefore, the process of implementation will require a considerable amount of time before an organisation can comply with the requirements of the standard. Secondly, the majority of banks do not collect the required amount of credit information. To collect the necessary information, entities will need to change their existing credit and information systems significantly.[35] While transitions can be difficult, the RBI has considered comprehensive regulatory safeguards to facilitate the process.

Proposed Suggestion

After proposing the said approach of allowing banks to develop "customized approaches for ECL," RBI has questioned whether the mitigants proposed to reduce the consequent inevitable variability between the entities are adequate.[36] We answer in the negative since RBI does not seem to have considered the impact of allowing banks to create unique credit risk models on their reporting behaviour. Since RBI intends to come up with a "more detailed proposal" concerning the fact that credit loss estimates generated by banks using their models will be accountable to a prudential floor mandated by RBI as a regulatory backstop,[37] we suggest that it can also come up with mitigation strategies for controlling bank behaviour.

First, to ensure transparency, RBI can implement stringent documentation requirements not only for banks' risk management personnel

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[35] Luca Serafini et al, *Expected Credit Loss Approaches In Europe And The United States: Differences From A Financial Stability Perspective* (European Systemic Risk Board 2019).
[36] RBI (n 2) 42.
[37] ibid.

but also for credit risk model developers and users. The mathematical calculations and quantification of any model typically involve the application of theory, the selection of inputs and exclusions, estimations, and application. It is crucial that these decisions be explained in the documentation and are transparent.[38] Banks must demonstrate how they have integrated such information into the ECL assessment procedure. RBI can require banks to implement and adhere to formal rules and regulations that require them to provide qualitative disclosures describing the procedures used in credit risk methodologies. Documentation must include concise explanations supporting the calculations, projections, and review.[39] Second, while core risk management employees may have primary authority for assigning credit risk grades and continuously refining their assessments, their decisions should also be evaluated by an independent mechanism.[40] This ensures that the credit risk rating process has internal checks and balances.

By mandating stringent procedures for these basic mechanisms in credit risk management, supervisors like RBI can keep a track of whether informed choices are being made in classifying financial assets based on these models. Issuing such suitable guidelines can discourage banks from engaging in altered reporting behaviour.

IV. CONCLUSION

The introduction of IFRS 9 was intended to address the problem of financial uncertainty and instability posed by IASB 39. However, there are certain unintended implications that can come out of the implementation of

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[38] Office of the Comptroller of Currency, *Comptroller's Handbook on Model Risk Management* (OCC 2021) 28.
[39] Basel Committee on Banking Supervision (n 6) 9.
[40] ibid 13.

the IFRS 9 system of accounting. To enhance the effectiveness of the shift to the ECL approach, RBI must develop strategies to prevent Indian bankers from misusing their discretion. While banks can still be allowed to develop their own credit risk models, support from RBI can encourage bank behaviour to be transparent, thereby mitigating the associated economic effects of the same. Further, loan loss allowances are directly impacted by ECL, which in turn affects banks' earnings and capital. There are currently no proposals to alter bank capital rules in response to the shift from ILA to ECL. If regulatory filters do not ease or smooth out the cyclical effect of impairment allowances on CET1, IFRS 9 may cause banks to see more abrupt decreases in regulatory capital at the very end of expansionary periods of the credit or business cycle.[41] It is important to consider the problems that may arise after the shift from ILA to ECL takes place. RBI has done justice by taking into account the fact that transitioning to the new approach will be time-consuming and gradual, and providing adequate time for banks to adjust to the new proposed changes.[42]

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[41] Mésonnier and Monks (n 30).
[42] RBI (n 2) 49.

II. CLOSING THE GREEN FINANCE GAP: BRIDGING THE DIVIDE BETWEEN CLIMATE ACTION AND URBAN FINANCING

- Tejaswini Kaushal*

ABSTRACT

With urban centers accommodating a majority of the global population, these cities are responsible for substantial waste generation, energy consumption, and greenhouse gas emissions, making them highly susceptible to climate change effects such as heat waves, flooding, and health crises. However, urban local bodies (ULBs) in developing countries face significant challenges in ensuring financial support for low-emission and climate-resilient urban infrastructure projects. 'Green financing,' which involves instruments like green bonds and green loans, is an upcoming solution, and several international and national institutions and frameworks have already been established to regulate it. With the rolling out of green financing guidelines by SEBI and RBI, green financing has also been enjoying much significant limelight in the national context. However, due to the uncertain taxation policies, dearth of regulatory frameworks, inadequate technological and infrastructural appendages, and lack of efficient finance models at the municipal levels, a dissonance in demand and supply of green finance has led to a Green Finance Gap. This paper explores the concept of Green Finance in the national and international context, focusing chiefly on the Green Finance Gap and its impact on urban financing in an effort to address the urgent need for immediate action to create sustainable solutions for our future.

I. Introduction 18
II. Understanding Green Finance for Ulbs: Significance, Trends, and the Green Finance Gap 20
    A. Comprehending Green Finance and its Trends 20
    B. Indian City Development Initiatives and their Current Funding Sources 21
    C. Green Finance And Ulbs In India: Where The Paths Merge 26
III. The Green Finance Gap: Highlighting the Lacunae in Green Urban Financing 29
    A. The Growing Gap between the Demand and Supply 29
    B. The Lacunae in Green Urban Financing 30

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IV. Bridging the Divide between Climate Action and Urban Financing ... 31
A. Trends Of Urban Green Financing In India ... 31
B. Recommendations for a Greener India ... 32
1. Emulating Viable Green Financing Practices from International Models: ... 32
2. Nostro And Vostro Account Funds as an Untapped Source of Green Financing: ... 35
3. Establishing Zone-Wise Expert Committees under a Central Governing Authority for Monitoring Green Projects and Finance: ... 37
4. Establishing a Multi-Stakeholder Approach for Urban Financing: ... 39
5. Utilizing the Power of Fintech in Urban Green Financing: ... 40
C Miscellaneous Suggestions for Effective Implementation ... 41
V. Conclusion ... 41

I. INTRODUCTION

With over half of the world's population residing in cities and singlehandedly causing an eighty percent increase in greenhouse gas emissions,[1] these urban centers have undoubtedly become the epicenters of environmental and social challenges.[2] Consequently, cities are highly vulnerable to the damaging effects of climate change, including devastating heat waves, flooding, and health crises.[3] Therefore, about eighty percent of the global annual climate change adaptation costs are projected to fall solely upon urban areas.[4]

The rapid urbanization of the Global South particularly has led to an increase in greenhouse gas emissions, waste generation, and energy consumption. However, urban local bodies ("**ULBs**"), especially in

[1] Oriana Romano, 'The Circular Economy in Cities and Regions' (*OECD*) <https://www.oecd.org/regional/cities/circular-economy-cities.htm> accessed 19 March 2023.
[2] ibid.
[3] Intergovernmental Panel on Climate Change, *Climate Change widespread, rapid and intensifying* (9 August 2021) <https://www.ipcc.ch/2021/08/09/ar6-wg1-20210809-pr/.> accessed 21 March 2023.
[4] Ari Huhtala, 'Climate Finance in the Urban Context' (2010) 4 DCAF <https://www.uncclearn.org/wp-content/uploads/library/wb72_0_0.pdf> accessed 20 March 2023.

developing countries, face significant challenges in accessing financial support for climate-resilient and low-emission urban infrastructure projects. With the global consciousness starting to prioritize environmental concerns, numerous nations now give prominence to attaining "green growth" in their economies while simultaneously pursuing economic development. The successful transformation of conventional economic sectors into eco-friendly ones and the substantial expansion of crucial green emerging industries necessitate the financial sector's adequate support.[5]

In light of the same, this paper explores the concept of Green Finance through its instruments like Green Bonds ("**GBs**") and Green Loans ("**GLs**") and their importance in addressing the finance needs of green projects, with a focus on the Green Finance Gap and its impact on green urban development financing. In Section II, the paper delves into the understanding of green finance, the current Indian urban development initiatives, and the role of green urban financing. Section III highlights the dissonance in demand and supply of green finance due to lacunae in the urban financing strategies that have caused a Green Finance Gap. Section IV analyses the current position of Indian reforms and thereafter recommends strategies for bridging the green finance gap by referring to international models.

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[5] Zheng He et al. 'Research on the Impact of Green Finance and Fintech in Smart City' (*Hindawi*, December 2020) <https://www.researchgate.net/publication/347474509_Research_on_the_Impact_of_Green_Finance_and_Fintech_in_Smart_City> accessed 21 March 2023.

II. UNDERSTANDING GREEN FINANCE FOR ULBS: SIGNIFICANCE, TRENDS, AND THE GREEN FINANCE GAP

A. Comprehending Green Finance and its Trends

The United Nations Environment Programme (**"UNEP"**) has presented the objective of Green financing as follows:[6] "Green financing is to increase the level of financial flows (from banking, micro-credit, insurance, and investment) from the public, private and not-for-profit sectors to sustainable development priorities."

GBs, as green finance instruments are globally governed by the Green Bond Principles (**"GBP"**), 2018,[7] which defines GBs as "Green Bonds are any type of bond instrument where the proceeds will be exclusively applied to finance or refinance, in part or in full, new and/or existing eligible Green Projects […]."

Similarly, GLs are currently governed by the Green Loan Principles (**"GLP"**), 2018,[8] which define GLs as "Green loans are any type of loan instrument made available exclusively to finance or refinance, in whole or in part, new and/or existing eligible Green Projects."

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[6] United Nations Environment Programme, *Green Financing*, <https://www.unep.org/regions/asia-and-pacific/regional-initiatives/supporting-resource-efficiency/green-financing#:~:text=Green%20financing%20is%20to%20increase,sectors%20to%20sustainable%20development%20priorities..> accessed 23 March 2023.

[7] 'The Green Bonds Principles' (2018) ICMA <https://www.icmagroup.org/assets/documents/Regulatory/Green-Bonds/Green-Bonds-Principles-June-2018-270520.pdf> accessed 27 March 2023.

[8] 'Green Loan Principles' (2018) GLP <https://www.lma.eu.com/application/files/9115/4452/5458/741_LM_Green_Loan_Principles_Booklet_V8.pdf> accessed 24 March 2023.

In the Green Horizon Summit (2020), the GB market was predicted to be worth USD 2.36 trillion globally by 2023,[9] and regardless of GB supply decreasing by 25.6% in 2022 (to USD 443.72 billion from USD 596.30 billion in 2021), it is expected to make a rebound and increase by more than 30% in 2023[10] amid policy push by countries.[11] Sustainability-linked bonds were earlier predicted to be the asset class in the 'environmental, social, and governance' (**"ESG"**) debt market that would expand the fastest,[12] but the phenomenon of 'greenwashing' has adversely affected this market lately.[13]

B. Indian City Development Initiatives and Their Current Funding Sources

According to the 2011 census, urban areas in India had a population of 377 million people, which accounted for 31% of the country's total

[9] 'Green Horizon Summit' (*World Economic Forum*, 9 November 2020) <https://www.weforum.org/events/green-horizon-summit-the-pivotal-role-of-finance-2020.> accessed 25 March 2023.

[10] Isla Binnie, 'Green bonds are set to drive corporate ESG debt out of slump in 2023' (*Reuters*, 6 January 2023) <https://www.reuters.com/business/sustainable-business/green-bonds-are-set-drive-corporate-esg-debt-out-slump-2023-barclays-2023-01-04/#:~:text=Corporate%20ESG%20bond%20issuance%20fell,predominantly%20driven%20by%20green%20bonds> accessed 20 March 2023.

[11] Sanne Wass, 'Global green bond issuance poised for rebound in 2023 amid policy push' (*S&P Global*, 25 January 2023) <https://www.spglobal.com/marketintelligence/en/news-insights/latest-news-headlines/global-green-bond-issuance-poised-for-rebound-in-2023-amid-policy-push-73931433>.

[12] ibid.

[13] Tejaswini Kaushal, 'Revealing the Faultlines: The perils of corporate greenwashing in India's ESG landscape' (*CCL NLUO*, 6 March 2022) <https://www.ccl.nluo.ac.in/post/revealing-the-faultlines-the-perils-of-corporate-greenwashing-in-india-esg-landscape> accessed 26 March 2023.

population.[14] By 2036, urban cities in India are projected to accommodate 600 million people, accounting for 40 percent of the country's population.[15] Accordingly, improving Indian urban infrastructure has been enjoying precedence, driven by the pursuit of the constitutional obligation towards ULB self-governance.[16] Recently, India's strategy for urban development has been reflected in the pursuit of establishing "smart cities," a term coined in the 2008 IBM Report.[17] The Smart Cities Mission, 2015,[18] is one initiative by India that aims to develop 100 smart cities across India by June 2023, out of which 20 are projected to meet the deadline.[19] Others include the Atal Mission for Rejuvenation and Urban Transformation (**"AMRUT"**), 2015,[20] for improving livelihood conditions for over 500 cities nationwide; Swachh Bharat Mission for cleanliness;[21] Digital India for technology and connectivity;[22] and the National Urban Livelihoods Mission[23] for improving livelihood opportunities

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[14] National Institute of Urban Affairs, *India's Urban Demographic Transition* (4 November 2011) <https://mohua.gov.in/upload/uploadfiles/files/CensusResult_2011%5B1%5D.pdf> accessed 18 March 2023.

[15] 'India's Urban Infrastructure Needs to Cross $840 Billion Over Next 15 Years: New World Bank Report' (*The World Bank*, 14 November 2022) <https://www.worldbank.org/en/news/press-release/2022/11/14/india-s-urban-infrastructure-needs-to-cross-840-billion-over-next-15-years-new-world-bank-report.> accessed 26 March 2023.

[16] Constitution (74th Amendment) Act 1992.

[17] Sam Palmisano, "Smart Earth: Next Generation Leadership Agenda" (2009) API <https://connect-world.com/PDFs/articles/2009/AP_I_2009/AP_I_2009_02.pdf.> accessed 27 March 2023.

[18] Government of India, *Smart Cities* <https://smartcities.gov.in/.> accessed 26 March 2023.

[19] Damini Nath, 'Smart Cities Mission' (*The Indian Express*, 16 March 2023) <https://indianexpress.com/article/explained/explained-law/smart-cities-deadline-8499073/> accessed 23 March 2023.

[20] Press Information Bureau, *AMRUT Scheme* (22 December 2022) <https://pib.gov.in/PressReleasePage.aspx?PRID=1885837> accessed 21 March 2023.

[21] Government of India, *Swachh Bharat Mission* (24 March 2023) <https://swachhbharatmission.gov.in/> accessed 26 March 2023.

[22] Government of India, *Digital India* <https://www.digitalindia.gov.in/> accessed 24 March 2023.

[23] Ministry of Housing & Urban Poverty Alleviation, *National Urban Livelihoods Mission* <https://mohua.gov.in/upload/uploadfiles/files/18NULM%20mission%20document(3).pdf> accessed 25 March 2023.

in urban areas. State governments also prepare State Action Plans for Climate Change (**"SAPCCs"**) based on their state-specific priorities and delegate them to ULBs.[24]

For funding new projects, the traditional sources available to ULBs include tax revenue, non-tax revenue, debt, and grants-in-aid.[25] However, Indian cities are held to be among the weakest in the world regarding their financial self-sufficiency and resource-raising capacity.[26] This poor governance and financial situation also make it challenging for cities to access external financing.[27]

However, certain contemporary tools have also evolved to allow independent and efficient fund-raising by ULBs.[28] These include Value Capture Financing (**"VCF"**)[29], External Commercial Borrowings (**"ECBs"**) [post-compliance to Foreign Exchange Management Act (**"FEMA"**), 1999[30]

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[24] Shreyans Jain, Rajashree Padmanabhi 'A Snapshot of Urban Green Finance in Two Indian Cities' (November 2021) CCFLA <https://www.climatepolicyinitiative.org/wp-content/uploads/2021/11/CCFLA-Indian-cities-report_FINAL-1.pdf> accessed 26 March 2023.

[25] "Financing of Smart Cities", Smart Cities Mission, Ministry of Urban Development, <http://smartcities.gov.in/upload/uploadfiles/files/Financing of Smart Cities.pdf> accessed 18 March 2023.

[26] TCA Sharad Raghavan, 'India's urban local bodies among weakest globally': RBI decries reliance on state, central grants' (*The Print*, 11 November 2022) <https://theprint.in/india/governance/indias-urban-local-bodies-among-weakest-globally-rbi-decries-reliance-on-state-central-grants/1209487/.> accessed 19 March 2023.

[27] 'Report on Indian Urban Infrastructure and Services', March 2011, The High Powered Expert Committee for estimating the investment requirements for urban infrastructure services, <http://icrier.org/pdf/FinalReport-hpec.pdf> accessed 20 March 2023.

[28] Prachee Mishra, 'Financing Urban Development' (*PRS Legislative Research*, 30 June 2013) <https://prsindia.org/theprsblog/financing-urban-development?page=132&per-page=1.> accessed 21 March 2023.

[29] Value Capture Finance Policy Framework, Ministry of Urban Development, February 2017, <http://smartcities.gov.in/upload/5901982d9e461VCFPolicyFrameworkFINAL.pdf> accessed 22 March 2023.

[30] Foreign Exchange Management Act 1999.

and the Reserve Bank of India (**"RBI"**)'s Master Circular on ECBs[31] with annual revisions[32]] and Municipal bonds [post- compliance with the Securities and Exchange Board of India (Issue and Listing of Debt Securities by Municipalities) Regulations, 2015,[33] as amended in 2019[34]]. For instance, in November 2022, nine municipal bodies raised approximately 38.40 billion rupees through bonds from 2016-17 to 2020-21.[35]

An ancillary tool for capital flow facilitation from the above-mentioned is credit ratings. For ULBs, the credit rating is assigned based on assets and liabilities, revenue streams, and other governance practices. These indicate what projects might be more lucrative for investments, directly enhancing an entity's capacity to raise funds.[36] For instance, Pune Municipal Corporation raised INR 2 billion by selling municipal bonds to finance water

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[31] Reserve Bank of India, *External Commercial Borrowings, Trade Credits and Structured Obligations* (RBI/FED/2018-19/67, 2019-2019), <https://rbi.org.in/Scripts/BS_ViewMasDirections.aspx?id=11510>, accessed 20 March 2023.

[32] Reserve Bank of India, *External Commercial Borrowings (ECB) Policy* (RBI/2022-23/98, Circular No. 11), <https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=12366&Mode=0>, accessed 23 March 2023.

[33] Securities and Exchange Board of India (Issue and Listing of Debt Securities by Municipalities) Regulations, 2015, Securities and Exchange Board of India, July 15, 2015, <http://www.sebi.gov.in/sebi_data/attachdocs/1436964571729.pdf> accessed 27 March 2023.

[34] Securities And Exchange Board Of India, *Issue And Listing Of Debt Securities By Municipalities* (No.SEBI/LAD-NRO/GN/2019/40), <https://www.sebi.gov.in/legal/regulations/sep-2019/securities-and-exchange-board-of-india-issue-and-listing-of-debt-securities-by-municipalities-amendment-regulations-2019_44519.html.> accessed 24 March 2023.

[35] Parth Welankar, '₹200 crore raised through through municipal bonds stuck in Pune civic body's to-do list' (*The Hindustan Times*, 10 July 2018) <https://www.hindustantimes.com/pune-news/200-crore-raised-through-through-municipal-bonds-stuck-in-pmc-s-to-do-list/story-xlFLWgGuhVurTZAikQ2YEI.html> accessed 19 March 2023.

[36] Press Information Bureau, Ministry of Urban Development, *Credit rating of cities under urban reforms begins* (September 6, 2016), <https://pib.gov.in/newsite/PrintRelease.aspx?relid=149563.> accessed 25 March 2023.

supply projects, as it received an AA+ credit rating. The Indian government funds urban development initiatives through a combination of the above-mentioned sources, alongside budget allocations, loans from international financial institutions such as the Asian Development Bank (**"ADB"**) and the World Bank, and public-private partnerships ("**PPPs"**). Private entities are encouraged to invest, develop, and operate certain aspects of smart city projects through PPPs.[37] For instance, under the Smart Cities Mission, the central government provides up to INR 5 billion (USD 70 million) to each selected city over five years, while the state government and ULBs also contribute a matching amount.[38]

Moreover, in the Budget 2022-23, the Ministry of Housing and Urban Affairs has been allotted an estimated INR 764.32 billion, a 2.5% increase over the previous financial year. [39] The government has also expressed its intention to establish an Urban Infrastructure Development Fund for public agencies to develop urban infrastructure in tier-2 and tier-3 cities.[40] Managed by the National Housing Bank, the Fund is expected to receive an annual allocation of INR 100 billion to adopt urban planning reforms. The cities will

[37] NITI Aayog, 'Reforms In Urban Planning Capacity In India' (September 2021) <https://www.niti.gov.in/sites/default/files/2021-09/UrbanPlanningCapacity-in-India-16092021.pdf> accessed 24 March 2023.
[38] Government of India, *About Smart Cities*, <https://smartcities.gov.in/about-the-mission> accessed 27 March 2023.
[39] PRS Legislative Research, *Demand for Grants 2023-24 Analysis: Housing and Urban Affairs,* <https://prsindia.org/budgets/parliament/demand-for-grants-2023-24-analysis-housing-and-urban-affairs>, accessed 22 March 2023.
[40] Press Information Bureau, *Highlights of the Union Budget 2023-24* (1 February 2023), <https://www.pib.gov.in/PressReleasePage.aspx?PRID=1895315>, accessed 26 March 2023.

also be given incentives to implement property tax reforms and set aside user charges to enhance their creditworthiness for municipal bonds.[41]

C. Green Finance and ULBs in India: Where the paths merge

The 15th Finance Commission's report, namely 'Finance Commission in Covid Times Report for 2021–26' (2020),[42] recognized cities as the primary drivers of economic growth and in need of a tailored strategy to allocate grants to ULBs for project incubation and implementation. Further, the High-Powered Expert Committee for Estimating the Investment Requirements for Urban Infrastructure Services (2011) highlighted that a major reason for the pitiable urban infrastructure is the dismal ability of ULBs to raise funds.[43] A World Bank report of November 2022 also highlighted low Own Source Revenue (**"OSR"**) and higher dependence on commercial loans over municipal bonds as significant factors contributing to the inadequate commercial funding of urban infrastructure in India.[44]

Green financing can be a panacea to relieve the ULBs' credit deficit. ULBs face capacity constraints in raising finance for sustainable projects, making green finance instruments like GBs and GLs appealing. By issuing GBs, ULBs can access a wider pool of investors specifically interested in sustainable investments while enjoying a lower debt servicing cost.

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[41] ibid.

[42] Ministry of Finance, *Government of India Excerpts from Department of Economic Affairs (2021). Explanatory memorandum as to the action taken on the recommendations made by the Fifteenth Finance Commission in its final report submitted to the President on November 9, 2020* <https://fincomindia.nic.in/ShowContentOne.aspx?id=9&Section=1.> accessed 28 March 2023.

[43] Report n 27.

[44] Sohaib Athar, Roland White, Harsh Goyal, 'Financing India's Urban Infrastructure Needs' (*World Bank Group*, 15 December 2021) <http://documents.worldbank.org/curated/en/099615110042225105/P17130200d91fc0da0ac610a1e3e1a664d.> accessed 27 March 2023.

Furthermore, GBs can help municipal bodies meet their sustainability goals and demonstrate their commitment to environmental responsibility. These bonds are specific for undertaking "green activities," a term postulated under the Climate Smart Cities Assessment Framework developed by India's National Institute of Urban Affairs (**"NIUA"**).[45] Soft loans[46] and Green Masala Bonds[47] of Indian Renewable Energy Development Agency Limited (IREDA) are other popular instruments for financing green projects in India.

The Securities and Exchange Board of India (**"SEBI"**) took a regulatory initiative for GBs in May 2017 with the issuance of 'Disclosure Requirements for Issuance and Listing of Green Debt Securities.'[48] The SEBI has also released three circulars[49] over the last six months to regulate green

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[45] MoHUA, *ClimateSmart Cities Assessment Framework 3.0*, (*Technical Paper*, 2022) <https://niua.org/c-cube/sites/all/themes/zap/assets/pdf/CSCAF_3_0_Technical_document.pdf.> accessed 24 March 2023.

[46] PIB Delhi, *IREDA signs MoU with MAHAPREIT to provide loans for Green Energy projects IREDA to provide Techno-Financial consultancy to MAHAPREIT for RE projects* (*PIB*, 22 August 2022) <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1853602https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1853602.> accessed 27 March 2023.

[47] Gopal K. Sarangi, 'Green Energy Finance In India' (August 2018) (No. 863) ADBI <https://www.adb.org/sites/default/files/publication/446536/adbi-wp863.pdf> accessed 25 March 2023.

[48] Securities and Exchange Board of India, *Disclosure Requirements for Issuance and Listing of Green Debt Securities* (CIR/IMD/DF/51/2017), <https://www.sebi.gov.in/legal/circulars/may-2017/disclosure-requirements-for-issuance-and-listing-of-green-debt-securities_34988.html>, accessed 21 March 2023.

[49] Securities and Exchange Board of India, *Issue of Green Debt Securities by an issuer under Securities and Exchange Board of India (Issue and Listing of Municipal Debt Securities) Regulations, 2015* (SEBI/HO/DDHS/DDHS_Div1/P/CIR/2022/158) (November 24, 2022) <https://www.sebi.gov.in/legal/circulars/nov-2022/issue-of-green-debt-securities-by-an-issuer-under-securities-and-exchange-board-of-india-issue-and-listing-of-municipal-debt-securities-regulations-2015_65404.html> accessed 21 March 2023; Securities and Exchange Board of India, *Dos and don'ts relating to green debt securities to avoid occurrences of greenwashing* (SEBI/HO/DDHS/DDHS) (February 03, 2023), <https://www.sebi.gov.in/legal/circulars/feb-2023/dos-and-don-ts-relating-to-green-debt-

financing, curb greenwashing, and establish a regulatory regime for GBs.[50] The Union Budget 2022–23 similarly announced Sovereign Green Bonds issuance to reduce the economy's carbon intensity, as follows:

"As a part of the government's overall market borrowings in 2022-23, sovereign Green Bonds will be issued for mobilizing resources for green infrastructure. The proceeds will be deployed in public sector projects which help in reducing the carbon intensity of the economy."

Subsequently, in July 2022, the RBI also released its draft "Framework for Sovereign Green Bonds," providing for the distinguished use of funds for Sustainable Development Goals (**"SDGs"**), the establishment of a Green Finance Working Committee (**"GFWC"**), and the evaluation and reporting criteria to gauge and manage the proceeds.[51] The trends that favor this change resonated in the February 2023 GB issue of the Indore Municipal Corporation valued at INR 2.44 billion to fund a solar power plant construction. On the first day of the issue, the investor response exceeded expectations resulting in a whooping oversubscription of INR 6.61 billion.[52]

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securities-to-avoid-occurrences-of-greenwashing_67828.html> accessed 21 March 2023; Securities and Exchange Board of India, *Revised Disclosure Requirements for Issuance and Listing of Green Debt Securities* (RACPOD1/P/CIR/2023/023) (February 06, 2023), <https://www.sebi.gov.in/legal/circulars/feb-2023/revised-disclosure-requirements-for-issuance-and-listing-of-green-debt-securities_67837.html> accessed 21 March 2023.

[50] Tejaswini Kaushal n 13.

[51] Government of India, *Framework for Sovereign Green Bonds* (2891146/2022/Finance Unit, 2022) <https://dea.gov.in/sites/default/files/Framework%20for%20Sovereign%20Green%20Bonds.pdf.> accessed 23 March 2023.

[52] Shruti Tomar, 'Indore civic body introduces bonds to raise funds for solar power plant' (*The Hindustan Times*, 12 February 2023) <https://www.hindustantimes.com/india-news/indore-civic-body-introduces-bonds-to-raise-funds-for-solar-power-plant-101676143120044.html> accessed 27 March 2023.

III. THE GREEN FINANCE GAP: HIGHLIGHTING THE LACUNAE IN GREEN URBAN FINANCING

A. The Growing Gap between the Demand and Supply

Despite the ceremonious welcome of the concept of green finance in India, a blatant gap peeks through the current revenue scheme. The GBs, as an instrument, do not enjoy an overwhelming capture of the capital market regardless of their recent projections of popularity. The World Bank, in November 2022, reported that India would have to invest a total of USD 840 billion in the next 15 years to adequately cater to the needs of its rapidly expanding urban population.[53] This translates to an average annual investment of USD 55 billion in urban infrastructure.[54] According to a Fitch Ratings report, as of January 2023, GSSS bonds accounted for just 3.8% (USD 20 billion) of the country's overall corporate bond market, worth about USD 500 billion, which requires more than USD 10 trillion to meet its green goals.[55] This phenomenon of the 'green finance gap,' which refers to the dissonance between the demand and supply of finance for green or sustainable projects, needs to be addressed, both locally and globally, to accelerate the transition towards a low-carbon and sustainable economy.

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[53] New World Bank Report n 15.
[54] ibid.
[55] 'India's green bond issuances just 3.8 pc of overall domestic corporate bond market' (*The Economic Times*, 10 February 2023) <https://economictimes.indiatimes.com/markets/bonds/indias-green-bond-issuances-just-3-8-pc-of-overall-domestic-corporate-bond-market-report/articleshow/97806148.cms.> accessed 23 March 2023.

B. The Lacunae in Green Urban Financing

Despite the growing awareness and interest in green finance, several dynamics contribute to the green finance gap in India, including limited access to finance, high transaction and debt financing costs, inadequate regulatory frameworks, short tenure of bonds, a lack of awareness and capacity among stakeholders, risks and uncertainties, and a dearth of effective funding models at local levels.[56] ULBs are particularly affected as they are responsible for providing regular and primary services and infrastructure to their citizens while facing already limited financial resources and capacity. According to the RBI's 2022 report on municipal finances,[57] significant technology and capacity gaps related to urban climate finance must be addressed for cities to meet their obligations successfully. For instance, Mumbai's Climate Action Plans (**"CAP"**)[58] are still ineffective, as there is insufficient investment in sustainable public infrastructure.[59] Additionally, green project ideas often fail to move forward due to a lack of local-level preliminary studies, and such gaps in capacity and technology bring huge financial detriments.[60]

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[56] Government of India n 47.

[57] *Report on Municipal Finances*, RBI 2022, <https://rbidocs.rbi.org.in/rdocs/PublicationReport/Pdfs/RMF10112022428A45038BB4432 4B9CC0F3D9DBD3F7A.PDF.> accessed 27 March 2023.

[58] <https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1847812> accessed 23 March 2023.

[59] Tanishka Sachidanand, 'Trying to Stay Afloat: How Mumbai's Climate Action Plan Falls Short', (*CCS*, Sept 29, 2021), <https://news.climate.columbia.edu/2021/09/29/why-mumbais-climate-action-plan-falls-short/.> accessed 21 March 2023.

[60] Anusha Kesarkar Gavankar, 'Rethinking urban green financing for accelerating India's cleantech system' (*ORF*, 20 February 2023) <https://www.orfonline.org/expert-speak/rethinking-urban-green-financing-for-accelerating-indias-cleantech-system/> accessed 21 March 2023.

IV. BRIDGING THE DIVIDE BETWEEN CLIMATE ACTION AND URBAN FINANCING

A. Trends of Urban Green Financing in India

Regulatory guidelines from SEBI[61] and RBI[62] are now in place. The RBI released a report[63] on November 10, 2022, which suggests alternative financing methods for ULBs. This report follows a series of other publications from the RBI highlighting the significance of green financing, starting as early as January 2021.[64] The RBI's focus on green financing highlights the need for sustainable and environmentally friendly investments in the urban infrastructure sector. By providing alternative financing options, the RBI hopes to facilitate expeditious accomplishments of CAPs and India's ambitious COP26 undertaking[65] by ULBs. Regionally, India forms a part of the ASEAN Catalytic Green Finance Facility,[66] which provides grants and catalytic investments to implement innovative solutions to the issues posed by climate change. Internationally, the Global Steering Group for Impact Investment (**"GSGII"**) acts as a regulatory institution for green financing, of

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[61] Press Information Bureau n 49.
[62] Ministry of Finance n 51.
[63] Reserve Bank of India, *Alternative Sources of Financing for Municipal Corporations* (Nov 10, 2022), <https://m.rbi.org.in/scripts/PublicationsView.aspx?id=21362.>, accessed 19 March 2023.
[64] Saurabh Ghosh, Siddhartha Nath and Abhishek Ranjan, *Green Finance in India: Progress and Challenges*, (January 2021), RBIB <https://rbidocs.rbi.org.in/rdocs/Bulletin/PDFs/04AR_2101202185D9B6905ADD465CB7DD280B88266F77.PDF> accessed 27 March 2023.
[65] Ministry of Environment, Forest and Climate Change, *India's Stand at COP-26* (3 February 2022), <https://pib.gov.in/PressReleasePage.aspx?PRID=1795071>, accessed 27 March 2023.
[66] Asian Development Bank, *ASEAN Catalytic Green Finance Facility (ACGF)*, <https://www.adb.org/what-we-do/funds/asean-catalytic-green-finance-facility/main>, accessed 24 March 2023.

which India is one of only 4 Asian members.[67] The United Nations Framework Convention on Climate Change (**"UNFCCC"**) Green Climate Fund[68] and World Bank City Climate Finance Gap Fund[69] act as an illustration of global alternate funding instruments for Indian ULBs presently.

B. Recommendations for a Greener India

1. Emulating Viable Green Financing Practices From International Models:

Several green financing structures are in place worldwide[70] for GB issuance to fund ULBs.[71] For instance, 12-year and 32-year Green Gilts were raised by the United Kingdom (**"UK"**) in 2021,[72] complemented by a Green Financing Framework and a detailed execution plan for including social co-benefits.[73] Effective fund utilization through meaningful metrics, consistency,

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[67] Government of UK, *Accelerating Green Finance* (28 March 2018), <https://www.gov.uk/government/publications/accelerating-green-finance-green-finance-taskforce-report>, accessed 26 March 2023.

[68] Green Climate Fund <https://www.greenclimate.fund/> accessed 23 March 2023.

[69] The World Bank, *City Climate Finance Gap Fund*, <https://www.worldbank.org/en/topic/urbandevelopment/brief/city-climate-finance-gap-fund>, accessed 26 March 2023.

[70] Alex Nicholls, 'Policies, Initiatives, and Regulations Related to Sustainable Finance' <https://www.adb.org/sites/default/files/institutional-document/691951/ado2021bp-policies-initiatives-regulations.pdf> accessed 24 March 2023.

[71] David Thorpe, 'More Cities Are Issuing Green Bonds To Finance Climate Friendly Expansion' (Smart Cities Dive) <https://www.smartcitiesdive.com/ex/sustainablecitiescollective/more-cities-are-issuing-green-bonds-finance-climate-friendly-expansion/260466/> accessed 23 March 2023.

[72] Government of UK, UK's first Green Gilt raises £10 billion for green projects (21 September 2021), <https://www.gov.uk/government/news/uks-first-green-gilt-raises-10-billion-for-green-projects>, accessed 25 March 2023.

[73] United Kingdom Debt Management Office, *UK Government Green Financing Framework* (June 2021), <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1002578/20210630_UK_Government_Green_Financing_Framework.pdf>, accessed 13 April 2023.

ambition and recognition of local entities under the framework is a referential archetype for India.[74] Furthermore, while Brazil, the United States, and others have well-established guidelines that necessitate analysis by the Indian rule-makers, developing nations such as Qatar, the Philippines, and Singapore are also set to roll out regulatory guidelines which will hold eventual relevance.[75]

Canada's Green Municipal Fund (**"GMF"**)[76], Japan's Hokkaido Green Fund,[77] and the UK's Green Finance Taskforce (based on a *sui generis* green finance strategy[78]) are prospective models of national green revolving fund for ULB capacity building for replication in the Indian market, an initiative towards which is seen in the establishment of the GFWC by the RBI. Furthermore, the loopholes highlighted in the Framework for the Sovereign Green Bonds by analysts[79] can be plugged by referring to the 'European green bond standard' (EUGBS)[80] of the European Green Deal[81] and adopting their

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[74] The UK's Green Gilt: Demonstrating the Contribution to Jobs and Leveling Up (Working Paper, July 2021), <https://www.lse.ac.uk/granthaminstitute/wp-content/uploads/2021/07/The-UKs-Green-Gilt-Demonstrating-the-Contribution-to-Jobs-and-Levelling-Up-July-2021.pdf>, accessed 13 April 2023.

[75] 'Browse Policies and Regulations' (Green Finance Platform) <https://www.greenfinanceplatform.org/financial-measures/browse> accessed 26 March 2023.

[76] Green Municipal Fund <https://greenmunicipalfund.ca/> accessed 21 March 2023.

[77] Hokkaido Green Fund <https://www.thewindpower.net/owner_en_994_hokkaido-green-fund.php> accessed 25 March 2023.

[78] GSG Driving Real Impact <https://gsgii.org/> accessed 27 March 2023.

[79] Kundun Pandey, 'A framework for sovereign green bonds a step in the right direction but has miles to go' (Mongabay, 22 November 2022) <https://india.mongabay.com/2022/11/govt-releases-framework-for-sovereign-green-bonds/> accessed 15 April 2023.

[80] 'EU Green Bond Standard Usability Guide' (March 2020) <https://finance.ec.europa.eu/system/files/2020-06/200309-sustainable-finance-teg-green-bond-standard-usability-guide_en.pdf> accessed 19 March 2023.

[81] 'A European Green Deal' (European Commission) <https://commission.europa.eu/strategy-and-policy/priorities-2019-2024/european-green-deal_en> accessed 27 March 2023.

principles of taxonomy-alignment, transparency, external review, and supervision[82] as suited to the Indian economy and investor patterns for establishing an improved regulatory scheme. The GB verification, reporting, and disclosure standards for green use-of-proceeds in EUGBS can provide a comprehensive foundation for India to establish its framework.[83]

One of the most prominent case studies for India to learn from includes the Green Finance for the Development of Smart Cities project, an initiative funded by the UK PACT Programme.[84] Innovative strategies to be adopted include fostering effective public-private co-financing partnerships with neighboring countries (potentially with the United Arab Emirates, Bangladesh and Bhutan), creating a designated fund with the proper structure to co-finance strategic green projects in line with the national taxonomy (with emotions being the predominant driver of Indian market sentiments), allowing larger ULBs to raise funds through GBs without indebtedness limit (augmenting autonomy of credit-worthy ULBs), emphasis on private impact funding (and a concurrent dilution of state-funding dependency), validation of revenue models through piloting (attracting public and private investors), bespoke project structuring support (enabling greater ULB-specific capacities over mechanical replication of models), knowledge-sharing networks (targeting improved stakeholder collaboration), and financial matchmaking with

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[82] 'Commission proposal for a European green Bond standard' (European Commission, 6 July 2021) <https://finance.ec.europa.eu/publications/commission-proposal-european-green-bond-standard_en> accessed 26 March 2023.

[83] Volker Brühl, 'Green Finance in Europe – Strategy, Regulation and Instruments' (Intereconomics, 2021) <https://www.intereconomics.eu/contents/year/2021/number/6/article/green-finance-in-europe-strategy-regulation-and-instruments.html> accessed 24 March 2023.

[84] UK Pact (November 2021) <https://www.ukpact.co.uk/hubfs/Publications%20(briefs)/Pathways-for-mobilising-green-finance.pdf> accessed 20 March 2023.

investors (facilitating stable green finance flows). It also provides a good model for emulating payments-as-a-service (**"PaaS"**) for collecting green fees (facilitating fund mobility), reaching an agreement on relevant financial instruments beforehand (sidestepping future disputes), refinancing (through loan debt mechanisms), and guarantee schemes to de-risk private investments (through strategic deployment).[85]

2. Nostro and Vostro Account Funds as an Untapped Source of Green Financing:

The international trade and commerce boost has opened up new avenues for the government to generate funds, and the RBI has recently jumped on this bandwagon with amplified vigor. Over 60 Vostro accounts have been opened by Indian Banks lately.[86] The July 2022 guidelines by RBI regulate these accounts and provide specific provisions for the usage of surplus funds, as follows:[87]

"8. Use of Surplus Balance: The Rupee surplus balance held may be used for permissible capital and current account transactions in accordance with mutual agreement. The balance in Special Vostro Accounts can be used for:

[85] Esther Choi et al., 'How to de-risk low carbon investments' World Resources Institute (22 July 2022) <https://www.wri.org/insights/de-risking-low-carbon-investments> accessed 14 April 2023.
[86] Gyanendra Keshri, 'RBI approves 60 vostro accounts for rupee trade' (*Deccan Herald*, 14 March 2023) <https://www.deccanherald.com/business/economy-business/rbi-approves-60-vostro-accounts-for-rupee-trade-1200181.html> accessed 27 March 2023.
[87] Reserve Bank of India, *International Trade Settlement in Indian Rupees (INR)* (RBI/2022-2023/90, Circular no. 10) <https://m.rbi.org.in//scripts/FS_Notification.aspx?Id=12358&fn=5&Mode=0> accessed 23 March 2023.

a. Payments for projects and investments.

b. Export/Import advance flow management

c. Investment in Government Treasury Bills, Government securities, etc. in terms of extant guidelines and prescribed limits, subject to FEMA and similar statutory provision."

Hence, the banks need to invest the surplus of "Special Rupee *Vostro* Accounts" into T-Bills and G-Secs as per the norms.[88] These guidelines reflect a scope broad enough for surplus invested in government securities to be diverted towards green projects if the surplus funds do not have an impending-payment obligation. Redirecting the *Vostro* account surplus towards green securities of ULBs can provide substantial funds for green activities regardless of their pay-on-demand and interest-free nature owing to burgeoning deposits and a certain continuous surplus in such accounts.

Similar is the case for the *nostro* funds of India. According to Basel III regulations, banks must have or can readily arrange enough liquid cash to cover expected payment commitments over the following 30 days.[89] Technically, funds in *nostro* accounts are "locked up" only during the currency settlement duration.[90] Since most withdrawals from *nostro* accounts may be anticipated in advance, coupled with sufficient flexibility in the currency settlement system and overdraft facility based on the mutual understanding

[88] KR Srivats, 'Allowing investment of Vostro account surplus in G-Sec, T-Bills 'opens new avenues for government to borrow' (*Hindustan Line*, 13 July 2022) <https://www.thehindubusinessline.com/economy/surplus-rupee-balances-in-vostro-accounts-can-now-be-invested-in-g-secs-t-bills/article65636159.ece> accessed 26 March 2023.

[89] 'Basel Committee on Banking Supervision' (*Bank for International Settlements*, December 2010) <https://www.bis.org/publ/bcbs189.pdf> accessed 24 March 2023.

[90] Frances Copolla, 'There are no such things as Dormant Funds in Banking' (*Forbes*, 10 February 2019) <https://www.forbes.com/sites/francescoppola/2019/02/10/there-is-no-such-thing-as-dormant-funds-in-banking/?sh=2c9d0d775aef> accessed 21 March 2023.

between banks, *nostro* account funds are not kept dormant for the remainder of the period. Instead, they are utilized in short-term investment activities, a practice already employed in India. Additionally, cryptocurrencies assert that they can free up the liquidity needs of banks by allowing payments to be made using their currency rather than a foreign one,[91] facilitating even long-term investments like green securities and green infrastructural projects using *nostro* account funds.

3. *Establishing Zone-wise Expert Committees Under a Central Governing Authority for Monitoring Green Projects and Finance:*

The recommendation for establishing GFWC by the RBI[92] is commendable. However, it may be a squandered opportunity because of ineffective ground-level implementation, considering the diverse culture, geography, natural and material resources, green project suitability, consumer demands, and investment patterns in different zones. Release of recommendations by authorities without deadlines and follow-ups on action is futile. The NITI Aayog must act as a proactive player in accelerating, establishing, steering, and monitoring GFWC rather than playing a passive policy-approval authority. Establishing a dedicated Central Body under the aegis of the NITI Aayog will reduce financing inefficiency caused by the deflection of responsibility among several local bodies, accelerating green investment by providing prudent technical guidance and replicating successful

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[91] Julio Faura, 'How Blockchain can finally fulfill its promise in Global Payments' (*Coin Desk*, 9 June 2018) <https://www.coindesk.com/markets/2018/06/09/how-blockchain-can-finally-fulfill-its-promise-in-global-payments/> accessed 26 March 2023.

[92] Ministry of Finance n 51.

models of some ULBs in other parts by issuing sovereign GBs *en bulk*. For instance, Indore's pioneering garbage collection and disposal drive that allowed it to multi-fold its self-generated revenue is a potentially replicable model.[93]

Therefore, an expert committee should spearhead the zone-wise initiation, approval, and implementation of the desired green projects of ULBs. The project implementation should be continually supervised by the aforementioned Central Body and community-based local bodies working independently but subordinate to the expert committee to report the ground-level position of the green projects, ensuring fast initiation and compulsory time-bound deployment for the green projects.

A thorough implementation framework at the grass-roots level is crucial since barely two-thirds of the capital budget for the ten largest ULBs over the last three fiscal years saw utilization.[94] This trend highlights the causal dormancy of the raised funds exacerbated by a lax implementation mechanism present at the ground level. While regulatory guidelines for green investments are essential, unit-level financing frameworks can help ULBs execute finance-ready projects and adapt policies periodically.[95] This not only helps enhance GB funding by improving investor confidence in a zone-wise committee

[93] 'India's Cleanest City Indore Earns Huge Bucks From Its Waste' (*Outlook India*, 1 October 2022) <https://www.outlookindia.com/national/india-s-cleanest-city-indore-earns-huge-bucks-from-its-waste-news-227209> accessed 29 March 2023.
[94] New World Bank Report 15.
[95] Shreyans Jain, Rajashree Padmanabhi 'A Snapshot of Urban Green Finance in Two Indian Cities' (November 2021) CCFLA <https://www.climatepolicyinitiative.org/wp-content/uploads/2021/11/CCFLA-Indian-cities-report_FINAL-1.pdf> accessed 21 March 2023.

founded on community participation but also ensures strategic usage of funds raised as per zone-specific needs.

4. *Establishing a Multi-stakeholder Approach for Urban Financing:*

The multi-stakeholder approach involves forming global alliances and collaborative networks between ULBs, civil society, multilateral organizations, communities, social enterprises, and private investors.[96] Their collective insights will help mainstream green investment dialogues and ensure vertical and horizontal accountability by prioritizing engagement models and integrating green objectives. Furthermore, since green investments require more capital investment upfront and are perceived as riskier and costlier, contributions by multiple stakeholders will ensure improved risk management and investor confidence.

An essential aspect of the multi-stakeholder approach is the mechanism of PPPs, as emphasized in the 2013 report by the World Bank[97], and it has seen successful implementation in several cities in India.[98] A review and remodeling of the existing PPP structure, coupled with custom technical

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[96] United Nations Industrial Development Organisation, *Sustainable Cities and Investments: Addressing the Bottlenecks to Urban Infrastructure Development* (September 2017) <https://www.unido.org/sites/default/files/files/2018-02/BRIDGE%20for%20Cities_Issue%20Paper_3.pdf> accessed 20 March 2023.

[97] Aldo Baietti, 'A Public-Private Partnership (PPP) Approach to Climate Finance' (*The World Bank*, 1 January 2023) <https://documents.worldbank.org/en/publication/documents-reports/documentdetail/712651468025506948/green-infrastructure-finance-a-public-private-partnership-approach-to-climate-finance> accessed 19 March 2023.

[98] 'Running Water in India's Cities: A Review of Five Recent Public-Private Partnership Initiatives' (*The World Bank*) <https://www.mohua.gov.in/upload/uploadfiles/files/Running_Water_in_Indias_Cities_%20A_Review_of_Five_Recent_PPP_Initiatives.pdf> accessed 19 March 2023.

assistance, capacity building, awareness raising, and incentive provision, can expedite and facilitate the involvement of the private sector.[99]

5. *Utilizing the Power of Fintech in Urban Green Financing:*

Fintech bestowed upon the financial sector a judicious and efficient integration of technology applications and financial analytics in client screening, fund monitoring, payment settlement, and risk management.[100] Moreover, research has identified three main uses of fintech for green finance: blockchain for renewable energy and carbon credits, blockchain for sustainable development, and innovation in green financial instruments such as GBs.[101] Fintech can help create a green financial information database for better communication and coordination between departments, allowing for real-time tracking and monitoring of green credit participation.[102] It can also establish a robust information disclosure system, enabling vertical and horizontal supervision to strengthen cooperation[103]. Europe[104] and China[105] are the two major countries to have leveraged artificial intelligence,

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[99] Ann Gardiner et al, 'Public-Private Partnerships for Climate Finance' (*Norden*, 2015) <https://norden.diva-portal.org/smash/get/diva2:915864/FULLTEXT01.pdf> accessed 18 March 2023.

[100] Christophe Christaen et al, 'Green Fintech for Green Finance: Turning Theory into Practice' (*CGFI*, 21 November 2022) <https://www.cgfi.ac.uk/2022/11/green-fintech-for-green-finance-turning-theory-into-practice/> accessed 17 March 2023.

[101] Jeffrey D Sachs, 'Why is Green Finance important?' (January 2019) (No. 917) ADBI <https://www.adb.org/sites/default/files/publication/481936/adbi-wp917.pdf> accessed 19 March 2023.

[102] ibid.

[103] Government of India n 47.

[104] Government of UK, 'UK FinTechs Chosen to Showcase Groundbreaking ESG & Green Finance Solutions During New York Climate Week' (19 August 2021) <https://www.gov.uk/government/news/uk-fintechs-chosen-to-showcase-groundbreaking-esg-green-finance-solutions-during-new-york-climate-week/.> accessed 18 March 2023.

[105] Tadiwanashe Muganyi et al, 'Green finance, fintech and environmental protection: Evidence from China' (*Science Direct*, July 2021) <https://www.sciencedirect.com/science/article/pii/S2666498421000314> accessed 20 March 2023.

blockchain, the Internet of Things, and big data to explore and practice green finance technology.

C. Miscellaneous Suggestions for Effective Implementation

To bridge the green finance gap, administrators and planners must proactively prioritize engagement models, mainstream green objectives, integrate goals into current financial flows, establish frameworks for tracking urban climate finance, undertake in-depth evaluation measures, enhance their resource mobilization capacity,[106] and encourage collaboration of ULBs with climate policymakers, finance practitioners, local communities, and urban planners[107]. Participatory development approaches and in-depth studies of green project concepts can help identify financers for high-quality projects, improve urban quality of life, and deflect the "carbon price risk."[108] ULBs must maintain a portfolio of planned and existing initiatives to attract additional financing and evaluate technical and financial support gaps.[109]

V. CONCLUSION

Green financing plays a vital role in developing sustainable urbanization in India. As ULBs strive to create a green infrastructure that resolves the shortcomings of the Indian economy and ecology, providing technical support for sustainable and climate-resilient urban design and

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[106] Priscilla Negreiros et al, 'The State of Cities Climate Finance' (*Climate Policy Initiative*, 30 June 2021) <https://www.climatepolicyinitiative.org/publication/the-state-of-cities-climate-finance/> accessed 20 March 2023.
[107] David Thorpe n 95.
[108] Darius Nassiry, *The Role of Fintech in Unlocking Green Finance: Policy Insights for Developing Countries*. (Working Paper, 2018) ADBI <https://think-asia.org/bitstream/handle/11540/9054/adbi-wp883.pdf?sequence=1> accessed 20 March 2023.
[109] Government of India n 60.

planning is imperative to enhance the capability of ULB personnel. Moreover, regulatory reforms, improved policies, revised tariff rates, improved incentives, and robust approval systems supplemented with state-of-the-art fintech solutions are necessary to create an ecosystem that fosters green financing, thereby reducing transaction costs and improving transparency. It is equally essential to recognize the significance of local conversations and stakeholder collaborations to formulate interlinkages bridging the supply and demand green finance gap. It is time for the world economies to collaborate toward a greener, more sustainable future for our cities. The final remarks to highlight the paramount relevance of stimulating green financing and bridging the green finance gap can be best expressed in the words of Auguste Tano Kouamé, Country Director, World Bank, India:[110]

"Cities in India need large amounts of financing to promote green, smart, inclusive, and sustainable urbanization. Creating a conducive environment for ULBs, especially large and creditworthy ones, to borrow more from private sources will therefore be critical to ensuring that cities can improve living standards of their growing populations sustainably [...]"

[110] World Bank Report n 15.

III. REGULATE NOW BENEFIT LATER: SCRUTINIZING THE REGULATORY CONCERNS IN THE BUY NOW PAY LATER INDUSTRY AND SUGGESTING REFORM

- Hrishikesh Reddy Kothwal*

ABSTRACT

Buy Now Pay Later (**"BNPL"**) is a payment mechanism through which consumers can purchase goods and services immediately and defer their payments for later. The BNPL industry has garnered widespread popularity in recent times thanks to innovation by fintech companies and the advent of online BNPL. This mechanism has the potential to bring about much-needed financial inclusivity in India by helping bring the credit-unserved population into the fold of formalized credit. However, due to their novelty and uniqueness, these BNPL companies currently operate in a regulatory grey area and are majorly unregulated. This unregulated operation of BNPL companies in a vulnerable sector such as payments could lead to infelicitous outcomes. Consumers may take up more credit than they have an appetite for, leading to debt traps, and the companies could issue unchecked credit services and pose security risks to the payment system. Therefore, this paper aims to develop a deeper understanding of this industry which is fast becoming a crucial part of the global payments system. The paper examines the benefits and the need of the BNPL mechanism and its economic structure in India. The paper then discusses regulatory concerns that exist for the functioning of the BNPL industry. Finally, by taking inspiration from present credit regulations and regulations in foreign jurisdictions, the paper suggests a regulatory framework to protect the interests of the consumer and at the same time preserve the innovation in BNPL.

I. Introduction 2
II. The Need, Issues, and the Economic Structure Of BNPL 47
A. Need For BNPL..........................47
B. Major Issues Related To BNPL...49
C. Economic Model Of BNPL 50
III. Decoding the Regulatory Concerns 51
A. PPI-Master Directions and the Directive..52
B. BNPL Instruments as Credit Cards. 54
IV. International Regulation and Reform Suggestions..56
A. Regulation Around the World 57

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B. Suggested Regulations.................58 V. Conclusion......................................63

I. INTRODUCTION

Consumer credit is generally defined as a debt incurred by an individual for the purchase of goods and services, for a short time period, with the promise of repayment including the addition of an interest. The concept is nothing new and it has existed since the genesis of the monetary system. However, with the changing times and with the advent of technology and consumerism, the forms of consumer credit have evolved significantly. From auto lending and installment sales in the early 19th, to credit cards and systematic credit scores in the 21st century, it has come a long way.[1]

In 2023, the Buy Now Pay Later (BNPL) system is one of the new and novel ways of extending credit to consumers. BNPL is a form of payment mechanism through which an individual can purchase goods and services at the moment but pay for the same later through small installments, often with no interest.[2] There are two types of BNPL services, offline and online. Offline BNPL has existed for long services and includes traditional EMI systems with lengthy paperwork and interest payments. While online BNPL companies use an instrument called the Prepaid Payment Instrument (**"PPI"**) to make this possible.[3] PPIs in the form of cards, wallets, internet accounts, etc., with pre-loaded credit lines are issued to the consumers. Then the consumer using these PPIs can make payments seamlessly at payment gateways and pay back the

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[1] Steven Finlay, *Consumer Credit Fundamentals*, (2nd ed, Palgrave Macmillan 2005) 33.

[2] Australian Securities & Investments Commission, 'Review of buy now pay later arrangements'(2018) ASIC < https://asic.gov.au/regulatory-resources/find-a-document/reports/rep-600-review-of-buy-now-pay-later-arrangements/ > accessed 15 March 2023.

[3] Sandeep Parekh, 'Not Buying It On "Buy Now Pay Later" (*Mondaq,* 28 February 2023) <https://www.mondaq.com/india/financial-services/1287658/not-buying-it-on-buy-now-pay-later> accessed 15 March 2023.

BNPL company at a later date in installments. The online BNPL has garnered widespread popularity in India due to low credit card penetration and lack of access to formal credit to a great majority of the country.

India's credit market is extremely unserved with about 400 million people, or 50% of the total eligible population of the country not having access to formalized credit.[4] Additionally, a mere 77 million people,[5] with a credit card penetration rate of 0.02 per capita against 2.01 per capita in the US,[6] own and use credit cards. This can be attributed to credit cards having very high eligibility criteria, only serving individuals who have an existing and acceptable credit score/history, or generally those who have a great relationship with the few banks that are authorized to issue these cards.[7] Credit scores can only be built by being a part of the formalized credit industry and therefore it becomes a vicious cycle.

BNPL lenders, contrary to conventional credit card and unsecured loan providers, use alternative data sources to assess creditworthiness and underwrite customers who are new to credit.[8] This enables a large segment of the country's salaried and self-employed population to obtain point-of-sale credit and finally be brought under the formalized credit system.

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[4] 'Empowering Credit Inclusion: A Deeper Perspective on Credit Underserved and Unserved Consumers' (*TransUnion*, 25 April, 2022) <https://newsroom.transuncibil.com/more-than-160-million-indians-are-credit-underserved/> accessed 16 March 2023.

[5] ET Spotlight Team, 'As India's Demand for Credit Rises, Can the Credit Card Industry Step Up?' (*The Economic Times*, 2 November 2022) <https://economictimes.indiatimes.com/wealth/spend/as-indias-demand-for-credit-rises-can-the-credit-card-industry-step-up/articleshow/95255154.cms> accessed 15 March 2023.

[6] CNBC Contributor, 'Buy Now Pay Later: A Stepping Stone in Financial Inclusion?' (*CNBCTV18*, 6 October 2021) <https://www.cnbctv18.com/personal-finance/bnpl-a-stepping-stone-in-financial-inclusion-11013502.htm> accessed 18 March 2023.

[7] Empowering Credit Inclusion (n4).

[8] BNPL: A Stepping Stone in Financial Inclusion (n6).

Therefore, by lowering the entry barriers for formal credit, BNPL has become a really popular mode of payment in India and worldwide. Many believe that it is the future of payments in India and research estimates that the BNPL industry has the potential to grow 15x from USD 3 - 3.5 billion in 2021 to USD 45 - 50 billion in 2026 with the individuals using BNPL slated to grow from 10 - 15 million to 80 - 100 million in the same period.[9]

However, the success of BNPL on the economic side has not meant that it has had a smooth road on the legal side. The Reserve Bank of India (**"RBI"**) believes that easy access to credit - in a world where e-commerce is extremely popular - will lead consumers into debt traps. Adding to that, there have been various reports of online scams and harassment by digital lenders recently.[10] This has caused the RBI to look at the practices being employed by BNPL companies and on 20th June, 2022, the Central Bank came out with a notification addressed to "Non-Bank PPI issuers" which states that "PPI-MD does not permit loading of PPI from credit line" and that "all companies engaging in such practices must stop immediately".[11]

This notification has sent shockwaves to the whole fintech industry. Major BNPL providers such as Slice and Lazypay have been considering pivoting their business models in response to the notification.[12] There have

[9] Nupur Anand, 'Buy Now, Pay Later Set to Surge Over Ten-Fold in India' (*Reuters,* 8 November 2021) <https://www.reuters.com/world/india/buy-now-pay-later-set-surge-over-ten-fold-india-2021-11-08/ > accessed 15 March 2023.

[10] Krishnakumar R, 'A Dark Underbelly: Digital Loans, Real-World Extortion' (*Deccan Herald*, 20 August 2022) <https://www.deccanherald.com/special-features/a-dark-underbelly-digital-loans-real-world-extortion-1137878.html accessed> 23 March 2023.

[11] Press Trust India, 'RBI Stops Non-bank PPI Issuers from Loading Wallets, Cards via Credit Lines' *The Hindu* (India, 21 June 2022).

[12] Bismah Malik, 'Slice's Existential Threat: Can Fintech Unicorns' Shaky Business Model Survive RBI's PPI Notification?' (*Inc42*, 14 July 2022) https://inc42.com/features/slices-existential-threat-can-fintech-unicorns-shaky-business-model-survive-rbis-ppi-notification/ accessed 18 March 2023.

also been speculations that the future of the BNPL industry is at risk in India.[13] In light of the same, this paper aims to examine the economic structures of online BNPL and their significance, the legal implications of the RBI notification, and the way forward in regulating BNPL industry in a way that benefits the consumer economy and at the same time mitigates the risks posed by an unregulated BNPL industry.

II. THE NEED, ISSUES, AND THE ECONOMIC STRUCTURE OF BNPL

A. Need for BNPL

It is pertinent to understand why the development of BNPL arrangements has been so popular considering the range of consumer credit and payment options that are already available. The answer to this question lies in the benefit that accrues to both the consumer and the merchant from the usage of BNPL.

First and foremost, BNPL arrangements are made to accommodate the spending habits of younger generations, who are just entering their prime spending years.[14] Due to their propensity for being early adopters of new technologies and greater comfort with online shopping, people between the ages of 18 and 24 are more likely to use BNPL services.[15] This age group also

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[13] Chetan Thathoo, 'Slice, Uni, Banking Partner SBM Bank India to Halt Onboarding New Customers for Prepaid Cards' (*Inc42*, 18 August 2022) <https://inc42.com/buzz/slice-uni-banking-partner-sbm-bank-india-to-halt-onboarding-new-customers-for-prepaid-cards-report/?s=pre%20paid%20card> accessed 18 March 2023.

[14] John Gapper, 'How millennials became the world's most powerful consumers' *Financial Times* (London, 6 June 2018).

[15] Kevin Pratt, 'Buy Now, Pay Later: The Stats' (*Forbes Advisor UK*, 30 November 2022) <https://www.forbes.com/uk/advisor/credit-cards/buy-now-pay-later-statistics/> accessed 19 March 2023.

tends to have less disposable income, so they may be seeking for more flexible payment alternatives that let them spread out their purchases over time.

Younger customers are also drawn to BNPL services because they frequently don’t need a credit check or a credit card, making it simpler for people with bad or no credit history to make purchases.[16] Young customers who want to make purchases but may not have the money to do so all at once may find them to be an appealing option due to the convenience and simplicity of BNPL services.

Second, BNPL can help in serving Indian workers in the unorganized sector. In India, the unorganized sector employs 93% of the workforce, many of whom are not eligible for formal credit.[17] This gap can be filled by BNPL. BNPL services can aid unorganized sector workers in India by enabling them with more flexible payment choices for their purchases. It may be challenging for many workers in the unorganized sector to make larger purchases or obtain credit when they need it since they may have inconsistent incomes and limited access to typical credit lines and credit cards.

By enabling customers to pay for their purchases over time, frequently without the need for a credit check or a credit history, BNPL services can help address this issue. Because they won’t have to pay for them all at once, this may make it simpler for unorganized sector workers to make larger purchases like appliances or electronics. Unorganized sector employees may be able to

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[16] ibid.

[17] Prasanna Mohanty, ‘Labour reforms: No one knows the size of India's informal workforce, not even the govt’ (*Business Today*, 15 December 2019) <https://www.businesstoday.in/jobs/story/labour-law-reforms-no-one-knows-actual-size-india-informal-workforce-not-even-govt-214490-2019-07-15> accessed 23 march 2023.

better manage their finances by delaying their payments over time and avoiding debt or other financial hardships.

Finally, merchants and e-commerce platforms have a huge incentive to incorporate the BNPL service under the payment ecosystem. Since purchases made through BNPL do not require the consumers to pay anything or only a nominal amount at the time of the purchase, the consumer is encouraged to make more spontaneous buys. Additionally, the BNPL providers pay the merchants immediately (after the deduction of a merchant fee),[18] and the complete credit risk is borne by the BNPL providers. Therefore, the merchants enjoy increased sales without having to bear any of the credit risk which is highly beneficial for them.

B. Major Issues related to BNPL

Consumers stand to gain many benefits from using BNPL but its current nebulous nature also brings about a set of issues. Consumers often tend to be myopic focusing only on short-term benefits and overestimate their capability to deal with debt in the long term.[19] Arrangements such as BNPL are also increasingly complex with a multitude of fees in the form of administrative fees, late payment fees, default fees, etc. These make it difficult for the consumer to gauge the true cost of the credit acquired and have the ability to lead them into debt traps.[20] Moreover, there is a risk of the BNPL service providers engaging in predatory lending practices, overextending credit, and supplying more credit than consumers can afford. However, the

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[18] HDFC Securities, 'FinTech Playbook: Buy Now Pay Later' (2022) HSIE<https://www.hdfcsec.com/hsl.docs/FinTech%20Playbook%20-%20Buy%20Now%20Pay%20Later%20-%20HSIE-202201111014177249873.pdf> accessed 22 March 2023.

[19] Iain Ramsay, *Handbook of Research on International Consumer Law eds*, (2nd ed Edward Elgar Publishing Limited 2018) 342.

[20] ibid.

issues of the consumers are not the only ones concerning the BNPL industry. One of the most fundamental and most recognized issues of the credit market is the one of information asymmetry on the end of the lender.[21] This means that the consumer has a better awareness of their financial condition but it is the lender that ascertains who is eligible for credit and who is not. This leads to a possibility that creditworthy borrowers may be less prepared to pay a risk premium for loans and withdraw their loan application, customers who actively seek credit and are the ones with a higher risk of default, are more likely to be chosen.[22] Such overexposure of the lender to high-risk borrowers can pose a significant risk to the lender and the credit market in itself.

C. Economic Model of BNPL

An instrument that facilitates the purchase of goods and services, financial services, remittance facilities, etc., against the value stored therein is known as a Prepaid Payment Instrument (**"PPI"**) in India.[23] In other words, the funds of the consumer are being loaded into the prepaid card for future use. A PPI can be issued by any company holding a PPI license and their popular forms include gift cards, travel cards, coupon cards, etc.[24] However, due to the lack of clear guidelines over the same, major fintech companies have now started loading PPIs with third-party backed credit lines instead of the consumer's own money.

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[21] The World Bank, General Principles for Credit Reporting, (*World Bank*, 2011) < https://www.worldbank.org/en/topic/financialsector/publication/general-principles-for-credit-reporting> accessed 22 March 2023.
[22] ibid.
[23] Reserve Bank of India, Master Directions on Prepaid Payment Instruments (2021) RBI < https://rbidocs.rbi.org.in/rdocs/notification/PDFs/82MDPPIS2708202181CF0A6FCD1B47B88CAE8E92A228B160.PDF>accessed 22 March 2023.
[24] ibid.

Therefore, a BNPL in India typically involves three parties, (1) the entity providing credit, generally banks and Non-Banking Financial Companies (**"NBFCs"**), (2) the PPI issuer (BNPL provider holding PPI license), and (3) the consumer. There are various alternatives that BNPL structures but the functioning of the most common one is as follows:[25]

- The BNPL provider holding the PPI license ties up with a bank or an NBFC authorized to issue credit.
- The BNPL cards/wallets in the form of PPIs are issued to consumers who are allowed to make payments or withdraw cash through these PPIs.
- Although a utilization limit is provided for the PPI, it does not come with any preloaded cash. It, however, is backed by a credit line by the third-party bank or NBFC.
- When the consumer utilizes the PPI, the credit line would be activated on demand and the payment would be effectuated.

On the consumer end, BNPL has a similar experience to a credit card but as can be seen from above, the backend transaction flow is very different. The credit lines are either set up as basic term loans or as revolving lines of credit, meaning that the credit line is renewed upon repayment.

III. DECODING THE REGULATORY CONCERNS

On 20th June 2022, the RBI issued a notification to the "Non-Bank PPI issuers". The notification stated that "The PPI-MD does not permit loading of PPIs from credit lines. Such practices, if followed, should be stopped immediately".[26] Through this notification, all current agreements to facilitate

[25] FinTech Playbook: Buy Now Pay Later (n 18).
[26] RBI Stops Non-Bank PPIs (n 11).

or extend loans through PPIs, including cards and wallets by fintech businesses, wallet providers, and non-banking financial companies have been called to a halt.

While PPIs can be loaded with cash, debits from a bank account, credit cards, and debit cards, according to the RBI, the legal structure that controls their issuance and use prohibits them from being loaded with credit lines. The ban is a close follow-up to RBI's previous clarification from December 2020, which stated that only banks, registered NBFCs, and other state government-regulated statutory bodies can engage in public lending activities.[27] The public had also been warned against unregulated digital lending platforms that offered quick, easy, and on-tap loans without the necessary safeguards.

Therefore, the concerns of the RBI about BNPL seem to be twofold. Firstly, BNPL service providers are exploiting the regulatory arbitrage to load PPIs with credit lines which is against the purpose of PPIs. Secondly, entities not authorized to issue credit cards are issuing instruments that function like credit cards without complying with the regulations on the same.

A. PPI-Master Directions and the Directive

- Provisions in the PPI-MD

The RBI Master Directions on PPIs (**"PPI-MD"**) dated 27th August 2021 govern all the affairs concerning PPIs in India.[28] Paragraph 7.5 of the aforementioned directions provides that the loading and reloading of PPI should be done through debit to bank account, cash, debit card, and credit card of the PPI holder.[29] Additionally, paragraph 7.9 of the same directions

[27] Not Buying It On "Buy Now Pay Later (n 3).
[28] Master Direction on PPIs (n 23).
[29] ibid.

provides that the PPI issuers may also load or reload the PPIs issued but it must only be done through the authorized outlets or authorized/designated agents of the PPI issuer and subject to conditions including due diligence, confidentiality, adherence to KYC, etc.[30]

Although it is clear from Paragraph 7.5 of the PPI-MD that the objective purpose of PPIs is loading the consumer's own money and using it for making payments, BNPL companies have been using Paragraph 7.9 and regulatory arbitrage in the fact that there was no direct prohibition on loading PPIs with credit, to facilitate their business models and now RBI has found objection to the same.[31]

- Applicability of the Directive

The fact that the directive has been addressed specifically to "Non-bank PPIs" has caused a lot of ambiguity on which entities it actually applies to. Multiple interpretations of the directive have said that the central bank intends to create a differentiation between the bank and non-bank PPI and that the directive is inapplicable to the bank-issued PPIs.[32] However, paragraph 7.5 of the PPI-MD itself states the permitted ways of loading a PPI are through cash, bank transfer, credit, and debit cards.[33] The recent directive simply clarifies the existing regulation with regard to the same. It can also be seen that paragraph 1.3 of the PPI-MD states that the PPI-MD applies to all PPI issuers.[34] Therefore, the language of the directive which states "PPI-MD does not permit loading of PPIs with credit lines" cannot be reasonably understood to be inapplicable to bank-based PPIs. Under the same interpretation, multiple

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[30] ibid.
[31] Not Buying It On "Buy Now Pay Later (n 3).
[32] Digbijay Mishra, 'Fintechs to Ping Government, RBI on Central Bank Note' *The Economic Times* (India, 22 June 2022).
[33] Master Direction on PPIs (n 23).
[34] ibid.

BNPL companies, including ones based on both bank and non-bank PPIs, have shut down their BNPL operations and have chosen to pivot to co-branding of credit cards.[35]

Additionally, some of the BNPL companies that have been following the PPI model of issuing credit have proposed a system where the credit will be deposited into the PPI through the PPI holders' bank accounts. Through such a system, credit lines would be routed through various mediums before reaching the PPI so as to make sure it would not directly come under the meaning of credit.[36] Prima facie, such a system would be able to circumvent the directive issued by the RBI as the loading of credit would be through a debit to the bank account of the PPI holder which is permissible under paragraph 7.5 of the PPI-MD. However, a larger look at the transaction would reveal that the PPI loading is through credit. Therefore, even such a system would not be consistent with the directive issued by RBI and would need to be stopped immediately.

B. BNPL Instruments as Credit Cards

One other concern of RBI in banning PPIs loaded with credit lines seems to be the fact that companies not authorized to offer credit cards are offering these PPIs that have similar characteristics to credit cards but do not conform with the Master Directions on Credit Card and Debit Cards (**"MD-Credit and Debit Card"**).[37] RBI believes that PPI licenses have been granted

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[35] Tarush Bhalla, 'Exclusive: PayU's LazyPay Mulls Major Shift to Credit Card from Prepaid Card After RBI's Diktat' (*Moneycontrol*, 21 Mar 2022) <https://www.moneycontrol.com/news/business/exclusive-payus-lazypay-mulls-major-shift-to-credit-card-from-prepaid-card-after-rbis-diktat-8765171.html> accessed 27 March 2023.

[36] RBI Stops Non-Bank PPIs (n 11).

[37] Jinni Sinha and Tanushree Bose, Master Direction – Credit Card and Debit Card – Issuance and Conduct Directions 2022 (Mondaq, 22 July 2022)< https://www.mondaq.com/india/financial-services/1214312/master-directions-on-credit-

to companies so that they can be used as payment instruments but BNPL companies have turned them into credit instruments, even marketing their products as credit card challengers at times.

The concern of RBI is more focused towards non-bank entities issuing PPIs and the recent directive is addressed to them because non-bank entities are not allowed to issue credit cards and even NBFCs are allowed to issue credit cards only with the prior authorization of RBI. Paragraph 21 of the MD-Credit and Debit Card does allow non-bank entities to act as co-branding partners during the issuance of credit cards but they are not allowed to underwrite loans or undertake risk through the same.[38] Non-bank entities' role as a co-branding partner is restricted to the distribution and marketing of the credit cards only.

Clause (a) (xii) of paragraph 3 of the Master Direction on Credit and Debit Card states that -

> "*Credit Card is a physical or virtual payment instrument containing a means of identification, issued with a pre-approved revolving credit limit, that can be used to purchase goods and services or draw cash advances, subject to prescribed terms and conditions.*"[39]

BNPL cards and wallets, issued as PPIs with credit lines, have a close resemblance in characteristics to qualify as a credit card in pursuance to the above definition. BNPL instruments are issued in both physical and virtual forms. BNPL instruments are also used to withdraw cash and purchase goods

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card-and-debit-card--issuance-and-conduct-directions-2022#:~:text=Reserve%20Bank%20of%20India%20(%22RBI,from%20October%2001%2C%202022).> accessed 27 march 2023.

[38] ibid.

[39] ibid.

and services. Certain BNPL instruments do have revolving credit lines, where the credit gets replenished upon repayment of previous credit by consumers. While there are BNPL instruments that do not have revolving credit lines and simply function as term loans, the general outlay of BNPL is remarkably similar to Credit Cards.

Therefore, it appears that the BNPL companies have structured their products in this way to bypass the regulatory framework. When a BNPL instrument is issued with a revolving credit line, it becomes a de facto credit card as can be seen from the above-cited definition. Permitting PPIs to operate like credit cards would create an opportunity for regulatory circumvention which is particularly dangerous in a critical industry such as payments.

IV. INTERNATIONAL REGULATION AND REFORM SUGGESTIONS

India intends to become the hub for Fintech in Asia, utilizing technology to boost productivity, open up new opportunities, and more effectively control risks.[40] The use of fintech must, above all, be focused on enhancing people's lives rather than using it to engage in regulatory arbitrage that is detrimental to society.

The country has revolutionized the global payments industry with the introduction of the Unified Payments Interface (**"UPI"**).[41] However, the

[40] 'India Emerging as Asia's Top Fintech Hub: RBI Governor Shaktikanta Das' (*NDTV*, 9 Mar 2021) <https://www.ndtv.com/business/india-emerging-as-asias-top-fintech-hub-rbi-governor-shaktikanta-das-2398848> accessed 20 March 2023.

[41] 'Monetary and Capital Markets Department, How India's Central Bank Helped Spur a Digital Payments Boom' (*International Monetary Fund*, 26 Oct 2022) <https://www.imf.org/en/News/Articles/2022/10/26/cf-how-indias-central-bank-helped-spur-a-digital-payments-boom> accessed 12 March 2023.

complete ban on BNPL which is gaining widespread prominence around the world would hinder India's hopes of becoming a Fintech hub. Therefore, BNPL must be regulated in India in a way that leverages BNPL's advantages while reducing its attendant risks.

A. Regulation around the world

Due to the worldwide adoption of Buy Now Pay Later services, some nations have begun to propose regulatory frameworks to safeguard customers and ensure ethical lending activities. Here are some instances of how BNPL regulation is being proposed in various regions of the world:

Australia: The Australian Securities and Investments Commission oversees BNPL providers in Australia (**"ASIC"**).[42] It aims to propose that compliance with the National Consumer Credit Protection Act of 2009 and an Australian Credit License are prerequisites for BNPL providers. Additionally, providers must check their consumers' credit histories to make sure they have the financial means to repay the loan.[43]

United Kingdom: The Financial Conduct Authority (**"FCA"**) oversees BNPL service providers in the UK.[44] The FCA has proposed new regulations for the sector, including the need to give consumers an adequate amount of time to pay back the debt and the requirement to conduct mandatory affordability checks on customers before extending credit.[45]

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[42] Edward Martins, 'Buy Now Pay Later: Industry awaiting Issues Paper with bated breath' (*Lexology*, 23 September 2022) <https://www.lexology.com/library/detail.aspx?g=30aa1b9f-cf0b-42ab-9d5f-54bedad4ecd6> accessed 28 March 2023.
[43] ibid.
[44] HM Treasury, 'Consumer protections in the Buy Now Pay Later market: consultation response' (*GOV.UK*, 28 January 2022) <https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/1083547/BNPL_consultation_response__Formatted_.pdf >accessed 28 March 2023.
[45] ibid.

United States of America: In the US, state-by-state regulations govern BNPL services.[46] Consumer protection legislation such as the Truth in Lending Act and the Fair Credit Reporting Act may apply to BNPL providers in some states. With BNPL services, there isn't a federal regulatory framework, though.

B. Suggested regulations

BNPL is a new and novel payment mechanism and its regulation must be done keeping in mind the unique nature of the same. Regulation must be done in such a way that the key characteristics of the mechanism are preserved.

BNPL is a form of unsecured consumer credit. It has an elevated risk component as compared to a secured loan, where the creditor or the consumer can sell the collateral to recover the debt. Therefore, the suggestions for regulation are made in reference to the existing unsecured credit regulations in the country.

- License requirements

BNPL arrangements involve an inherent credit risk and their stable management is imperative. They may have systemic implications if not managed properly. By requiring licenses, the BNPL providers will be required to adhere to all prudential supervisory rules, including those pertaining to capital adequacy, liquidity management, and stress testing. Additionally, having a licensing requirement will help the regulator ensure that fair lending practices are being followed by BNPL providers such as providing consumers

[46] Eamonn Moran, 'All signs point to increased US regulation of Buy Now, Pay Later' (*Norton Rose Fulbright*, 20 September 2022), <https://www.nortonrosefulbright.com/en-us/knowledge/publications/a61f6301/all-signs-point-to-increased-us-regulation-of-buy-now-pay-later> accessed 23 March 2023.

with clear information on their rights and duties, not using aggressive and harmful debt collection techniques, etc.

Paragraph 2.2 of the Master Circular on Credit Card, Debit Card and Rupee Denominated Co-Branded Prepaid Card Operations of Banks and Credit Card issuing NBFCs (**"MC-CC"**) - which is the authority on credit cards in India - provides that only banks and NBFCs with a net worth of Rs 100 crore and above may be allowed to issue credit cards.[47] Such a stipulation would ensure that only credible companies with adequate financial backing are allowed to offer BNPL services to consumers.

- Compliance with KYC norms

Know Your Customers (**"KYC"**) are certain standards designed to protect banking institutions against fraud, money laundering, corruption, terrorist financing etc.[48] Most financial services in the country are subject to the KYC norms issued through the Master Direction - Know Your Customer (**"KYC"**) Direction, 2016. [49]

Paragraph 6 of the MD-PPI already makes PPI issuers and in furtherance, all BNPL providers are subject to the KYC norms, but Paragraph 2.8 provides for small PPIs which can be issued without the KYC of the

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[47] Reserve Bank of India,Master Circular on Credit Card, Debit Card and Rupee Denominated Co-Branded Pre-paid Card Operations of Banks and Credit Card issuing NBFCs (2015) RBI <https://www.rbi.org.in/commonman/Upload/English/Notification/PDFs/31CA250915F.pdf > accessed on 23 March 2023.

[48] 'Society for Worldwide Interbank Financial Telecommunication, "KYC: Know Your Customer" (2023) SWIFT <https://www.swift.com/your-needs/financial-crime-cyber-security/know-your-customer-kyc/meaning-kyc> accessed 26 March 2023.

[49] Reserve Bank of India, Master Direction - Know Your Customer (KYC) Direction (2016) RBI <https://rbidocs.rbi.org.in/rdocs/notification/PDFs/MD18KYCF6E92C82E1E1419D87323E3869BC9F13.PDF> accessed 26 March 2023.

consumer.[50] Various BNPL providers have been making use of this provision to issue BNPL services without proper KYC.

KYC is a critical feature of protecting the security of financial transactions and avoiding fraud and money laundering. Additionally, BNPL providers can determine their customers' creditworthiness and confirm their identities by doing KYC checks on them. This can aid in preventing fraud and ensuring that the supplier is only giving credit to clients who can pay it back. Therefore, BNPL services should be subject to KYC norms like all other financial services in the country.

- Income requirements, credit limits, and credit reporting

The primary purpose of BNPL is to provide a vast majority of Indians who were previously excluded, access to affordable and on-demand credit. Most BNPL providers do not charge interest on credit as long as it is being repaid in the requisite time period. This feature of BNPL services helps prevent customers from being led into a debt trap by credit fees or interest and smooths out any cash flow issues the customer may experience. Thus, BNPL services should not be subject to any minimum income requirement as such a requirement would again lead to the exclusion of certain groups of the population.

In the current scenario, RBI does not prescribe a minimum income requirement for issuing credit cards but credit companies may, according to their policies, come up with income requirements that they deem suitable. For example, HDFC which is one of the largest banks in India, prescribes minimum income requirements ranging from Rs 2 Lakh per annum to Rs 21

[50] Master Direction: PPI (n 23).

Lakh per annum for its credit card products.[51] Due to there being a reduced risk of consumers falling into debt traps, such requirements should not be present for BNPL services.

However, the RBI may prescribe a maximum credit limit, based on income levels, to protect the interests of the consumers. This would ensure that while everyone will have access to credit, they would not be able to borrow beyond their means. Currently, RBI allows banks and NBFCs to decide the credit limit by themselves, under Paragraph 2.3 of the MC-CC.[52] In contrast, an aggregate credit limit prescribed by RBI, based on the income level of consumers will allow fair competition between BNPL providers and also ensure that affordable credit is accessible.

- Disclosure requirements

Given the sensitive nature of BNPL services, the providers must be mandated to provide their consumers with uniform information disclosures. If the information regarding interest rates, penalties, administrative fees, etc. is not clear to the consumers, it may lead to information asymmetry and consumers may not be able to gauge the potential costs of using the BNPL service.

Paragraph 5.1 of the MC-CC stipulates that any levy of interest, late fee, or penalties on credit cards must be done in a transparent manner and the methodology and calculation of these charges must be clearly indicated to the consumers.[53] Additionally, in the UK, the FCA instructed BNPL providers that they must comply with financial promotion rules and that information

[51] BankBazaar, 'HDFC Credit Card Eligibility Criteria: Check Here for Detailed Information' (BankBazaar, 2023) <https://www.bankbazaar.com/credit-card/hdfc-cc-eligibility.html> accessed 25 March 2023.
[52] Master Circular on Credit Card (n 47).
[53] ibid.

with regard to repayment, additional charges, etc. must be made clear to the consumers while providing the service.[54]

Therefore, it is imperative for the protection of consumer interests that uniform information disclosures be made available to the consumers. The RBI may draft new rules or extend the credit card disclosure requirements for the purpose.

- Confidentiality

BNPL providers deal with highly sensitive information such as the name, address, and income details of their consumers. The absence of adequate confidentiality safeguards could lead to unauthorized access to this information and have dangerous ramifications such as identity theft, fraud, misuse, etc.

Thus, BNPL providers must put in place sufficient security measures, to safeguard the privacy and confidentiality of consumer data and prevent unauthorized access to information. Paragraph 9 of the MC-CC provides that no information of a consumer shall be divulged to any individual or organization without the specific consent of the consumer.[55] Additionally, BNPL providers in Singapore[56] are required to comply with the Info-Communications Media Development Authority Data Protection Trustmark, and the providers in the UK[57] are required to comply with GDPR.

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[54] Financial Conduct Authority, 'FCA warns Buy Now Pay Later firms about misleading adverts' (*Financial Conducting Authority*, 24 November 2022) <https://www.fca.org.uk/news/press-releases/fca-warns-buy-now-pay-later-firms-about-misleading-adverts> accessed 30 March 2023.

[55] Master Circular on Credit Card (n 47).

[56] Celia Yuen, 'New Code Of Conduct For Buy-Now-Pay-Later Providers In Singapore To Take Effect On 1 Nov 2022' (*Mondaq*, 2 November 2022) <https://www.mondaq.com/dodd-frank-consumer-protection-act/1246040/new-code-of-conduct-for-buy-now-pay-later-providers-in-singapore-to-take-effect-on-1-nov-2022> accessed 30 March 2023.

[57] Consumer protections in the Buy Now Pay Later market: consultation response (n 44).

In the absence of data protection legislation in India, the RBI may provide specific rules for the use of data or extend the rules available for credit card providers to BNPL services.

- Grievance redressal mechanism

The complete BNPL industry is very new and therefore the possibility of delinquencies is very high. BNPL providers must be required to establish a robust grievance redressal mechanism to address consumer grievances. This would give customers a way to avail relief if they have concerns with the services offered.

Paragraph 12 of the MC-CC provides that consumers may be given a time period of 60 days for referring their complaints/grievances and that designated grievance redressal officers should be mentioned on the credit card bills.[58] Such a system can also be implemented for BNPL services to ensure that consumer grievances do not go unaddressed.

To sum it all up, it is suggested that regulation of BNPL services in India should focus on maintaining the benefits of the BNPL mechanism but at the same time ensuring transparency, consumer protection, and responsible lending practices. This would encourage the creation of a healthy and sustainable BNPL business in India and assist in preventing excessive consumer debt accumulation that is excessive.

V. CONCLUSION

The BNPL market has seen rapid expansion in recent years, both locally and internationally. The researcher believes that BNPL services have the potential to benefit India significantly. BNPL arrangements provide cheap

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[58] Master Circular on Credit Card (n 47).

and less risky credit to consumers, catering to the demands of risk-averse younger generations, allowing access to credit to the underbanked, and improving the sales of merchants. But, as has been noted in this paper, BNPL arrangements are not governed by consumer credit laws and may provide potential consumer issues that require immediate attention. To guarantee that the BNPL market grows in a way that benefits customers, regulatory control is required.

To this end, this paper proposes adopting an approach that protects the interests of the consumer but at the same time preserves the unique characteristics of the BNPL mechanism. Concerning BNPL arrangements, an attempt has been made to outline in broad brush six key reforms that could be undertaken in India. Therefore, BNPL arrangements should:

- Be subject to licensing requirements;
- Be subject to KYC norms;
- Not be subject to minimum income requirements, but be subject to maximum credit limits;
- Be subject to standardized information disclosure requirements
- Be subject to confidentiality requirements
- Be subject to the establishment of a grievance redressal mechanism.

IV. MACRO STRESS TESTING DURING CLIMATE RISKS: REEXPLORING THE TRADITIONAL MECHANISM

- Akshat Kothari & Alay Raje*

ABSTRACT

Global financial system stability is severely threatened by climate change, and conventional methods for managing financial risk may not be sufficient to handle the problems this presents. Macro stress testing can be used to analyse the possible effects of climate change on financial stability as well as to determine how resilient financial institutions are to major shocks. The report makes the case that macro stress testing should be expanded to evaluate risks associated with climate change, such as liability risks, transition risks, and physical risks. Macro stress testing can shed light on the repercussions of climate change on financial markets and institutions. Regulators and financial institutions can more accurately assess their resilience to climate-related disruptions and take the required steps to mitigate these risks by including climate hazards into stress testing scenarios. The paper also makes the case that green finance legislation can be crucial in enabling the use of macro stress testing to evaluate risks associated with climate change. The paper examines several distinct green finance regulations that enable macro stress testing incorporate climate change risks. The paper has lastly demonstrated that macro stress testing is a crucial instrument for evaluating the threats to financial stability posed by climate change. Green finance regulations must be created to make it easier to incorporate climate risks into macro stress testing in order to do this. To strengthen financial stability and resilience in the face of climate change, governments and financial regulators must collaborate to establish and execute such regulations.

I. Introduction 66
II. Climate Change Risks – An Economic Nightmare: 67
III. Understanding the Methods of Risk Management: 70
A. Traditional Methodology 70
B. Macro Stress Testing 72
C. The Case Study of Bank of Japan: 74
IV. Impact of Green Finance & its Regulation 75
V. The Dawn of a New Age – Enforcing Macro Stress Testing via Green Finance Regulations: 80
A. Creation of a Robust Framework. 81
B. Providing guidelines on conducting Macro stress testing. 83
C. Issues in the enforcement of macro stress testing via Green Finance Regulations: 85
VI. Concluding Remarks 86

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I. INTRODUCTION

India has begun its journey toward carbon neutrality, proposing a "Green Deal" to be completed by 2070. The financial sector, in particular, has been scrutinized for its ability to contribute to environmental sustainability. In this context, 'green finance' has emerged as a hot topic among global corporations. Green finance refers to all public and private organizations that provide financial support for sustainable development initiatives. Green finance emphasizes the importance of increased capital flow from the national government and private entities to establish green infrastructure. The RBI Governor recently stated that it is important to focus on the climate related risks that shall impact the business model of banks and ultimately disrupt the Indian economy. To assess the associated risks, regulators must formulate a forward-thinking, comprehensive, and strategic approach to address climate risks.[1]

The key issue presently appearing in bank management is that the traditional risk management approaches are not sufficient for the measurement of climate change risks. The ability to predict either short-term costs or long-term effects of weather events is difficult, even though effective policymaking frequently necessitates a precise assessment of economic harms. Since the global financial crisis of 2008, stress tests have been used more frequently. Regulators use them to evaluate how well-prepared Regulated Entities (**"REs"**) are for a given set of risks. It is suggested that the solution to this conundrum may lie in a macro-stress test for system-wide analysis with supervisory objectives. Through this paper, the authors attempt to showcase,

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[1] Shaktikanta Das, Governor, Reserve Bank of India, 'Banking Beyond and Tomorrow' (Speech at Bank of Baroda's Annual Banking Conference, Mumbai, 22 July 2022) <https://rbidocs.rbi.org.in/rdocs/Speeches/PDFs/BOBBBT22NDJULYEF5ED5285B7143F3BBDD451D32BD9296.PDF> accessed 29 March 2023.

the significance of green finance regulations in implementing macro stress testing for better risk management. The present article is divided into four parts. *Firstly,* the article describes the risks imposes by climate risks. *Secondly,* it shall delve into explaining the traditional risk management approach undertaken by the financial institutions in India and then signifies the macro stress testing approach. *Thirdly*, it elaborately defines the definition of green finance and its importance in attracting green investment. *Fourthly*, it concerns the development of green finance regulations for implementing macro stress testing. The authors also attempt to provide policy recommendations in this subsection.

II. CLIMATE CHANGE RISKS – AN ECONOMIC NIGHTMARE

Climate change is what can be termed the doomsday clock of the 21st century, with its effects overreaching towards posing major economic difficulties across the world. While the immediate effects of climate change are pretty obvious and extremely talked about, the need has arisen to investigate a more significant, indirect effect – the potential for a significant financial meltdown. For instance, a large insurer could go bankrupt due to climate-related catastrophes, which could quickly spread to the mortgage and other financial sectors, increasing expenses and delaying recovery.

Climate change has triggered extreme weather events such as floods, storms and heatwaves. By 2030, India, which is anticipated to rank third in terms of carbon dioxide emissions after the US and China shall experience a 0.5°C increase in temperature.[2] According to average taken over a period of 30-years, the sub-Himalayan region of eastern India often sees a monthly

[2] ibid.

mean temperature of 15.5 C in the month of June.[3] However, recently 3.1 °C higher than average temperature has been noted.[4] In 2021 climate change induced natural calamities have accounted for over 343 billion USD in economic damages, across the globe.[5] India has been ranked 7th amongst countries that are most frequently impacted by extreme weather conditions according to the Global Climate Risk Index 2021.[6] 19 million hectares of land were burned during the 2019–20 wildfire season in Australia, at a cost to the economy of AUD 20 billion.[7] Notably, the report – the State of Climate in Asia 2021 has found that India suffered the second-highest loss due to extreme climate events in 2021, incurring nearly $7.6 Billion in damages as a result of flooding and storms.[8] The study by the European Environment Agency estimated that its members suffered cumulative economic losses of between EUR 450 billion and EUR 520 billion as a result of weather- and climate-related catastrophes during 1980 to 2020.[9]

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[3] S. Thapa, 'Comfort zone calculation and climatic condition for a typical building located in the darjeeling hills' (2011) 29(1) Salesian Journal of Humanities and Social Science II (2) 123.

[4] Disha Shetty, 'Hottest July ever! 65% Indians were exposed to heatwaves in May-June 2019' (*Business Standard* 10 August 2019) <https://www.business-standard.com/article/current-affairs/hottest-july-ever-65-indians-were-exposed-to-heatwaves-in-may-june-2019-119081000202_1.html> accessed 25 March 2023.

[5] 'Weather, Climate and Catastrophe Insight' (*AON* 2023) <https://www.aon.com/getmedia/f34ec133-3175-406c-9e0b-25cea768c5cf/20230125-weather-climate-catastrophe-insight.pdf> accessed 26 March 2023 ["AON"].

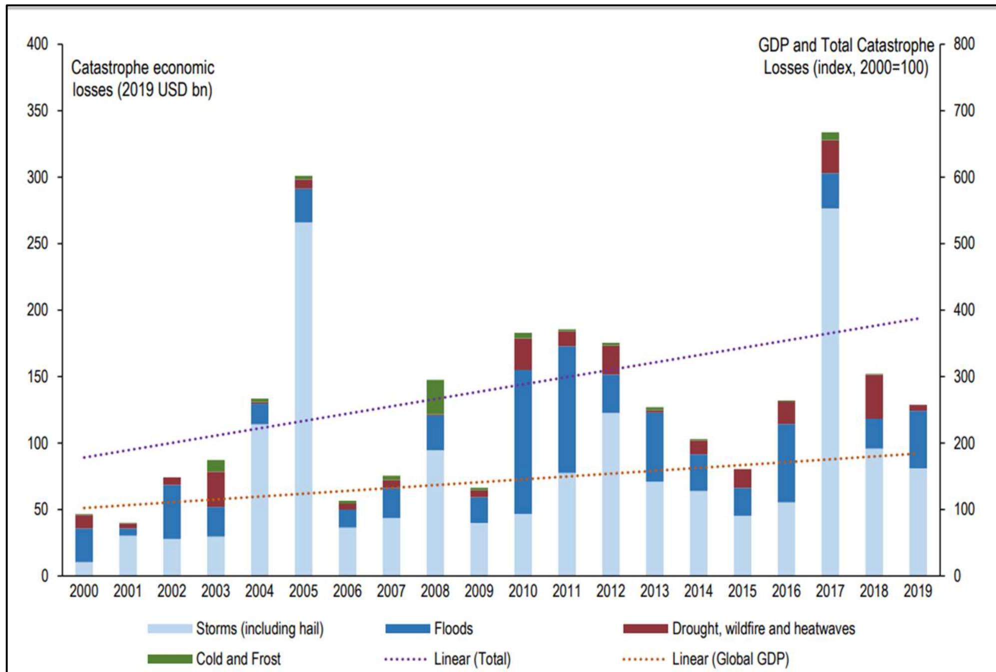
[6] Diya Trivedi, 'India among countries worst affected by climate change: Global Climate Risk Index 2021' (*Frontline* 25 January 2021) <https://frontline.thehindu.com/dispatches/india-among-countries-worst-affected-by-climate-change-according-to-global-climate-risk-index-2021/article33659497.ece> accessed 26 March 2023.

[7] Filkov, et al., 'Impact of Australia's catastrophic 2019/20 bushfire season on communities and environment. Retrospective analysis and current trends', (2020) 1(1) Journal of Safety Science and Resilience 44.

[8] World Meteorological Organization, State of the Climate in Asia *2021* (WMO-No. 1303, 2021).

[9] European Environment Agency, 'Economic losses and fatalities from weather- and climate-related events in Europe' (03 February 2022) <https://www.eea.europa.eu/publications/economic-losses-and-fatalities-from/economic-losses-and-fatalities-from> accessed 29 March 2023.

The following chart indicates the economic damage that climate change induced calamities impose –



Source: OECD calculations based on data on economic losses provided by Swiss Re sigma and data on gross domestic product from World Economic Outlook (database) (April 2021)

Given the far-reaching effects of climate change on the financial well-being of the country and the global market, it becomes imperative that the banking sector internalize such risks via their business models. Global markets and the market players in light of the climate related risk management would be in a need for finance. Additionally, banks as a response to this are integrating the global climate sustainability agenda into their operational aspects, including the evaluation of financing assets. This would however, require an appropriate regulatory framework for; a) identifying significant drivers of climate risk and the channels through which they are transmitted; b)

mapping and measure climate-related exposures and any areas of risk concentration; and c) assessing the overall risk.

In such a context, we shall now examine whether the efforts of India's banking regulation towards climate resilience could benefit by beginning with a macro stress test for climate risks.

III. UNDERSTANDING THE METHODS OF RISK MANAGEMENT.

A. Traditional Methodology

An effective risk governance framework includes a risk management process that enables the institutions to recognize new risks as well as create and put into action effective risk mitigation plans. When identifying and reducing all types of risk, the management should take climate-related financial risks into account. These risk assessment principles outline the various risk categories in which climate-related financial risks can be addressed.[10] There are several approaches that have been undertaken by the Indian government for the calculation of impacts and risk assessment. These methods include 1) Informational impact focused study 2) Backward-looking climate risk analysis and 3) Forward-looking climate risk analysis.[11] These risk analysis are primarily based on the available data. For example, the informational study is mostly a generalized study that provides a broad overview of hazards, impacts and damages. In order to take the analysis

[10] Office of the Comptroller of the Currency, Principles for climate-related financial risk management for large <https://www.occ.gov/news-issuances/bulletins/2021/bulletin-2021-62a.pdf> accessed 29 March 2023.

[11] Dr Reinhard Mecheler, et. Al, *Climate Risk Management Framework for India: Addressing Loss and Damage* (National Institute of Disaster Management and Deutsche Gesellschaft Fur Internationale Zusammenarbeit Giz 2019).

forward into a risk assessment, two approaches can be applied.[12] The first approach being a backward looking assessment wherein the past record of the damages can be utilized for the understanding of risks and damages, and the second being a forward looking scenario bases manner, a risk analytical method to comprehend risk, vulnerability, and exposure, generate scenarios, evaluate attribution, and reap the rewards of risk mitigation.

Traditional risk management approaches are based primarily on subjectivity and individual perceptions, which may not be the optimal way of dealing with the emerging risk landscape.[13] While a number of approaches already exist in the field of short-term risk assessment and management, mainly in the field of extreme events, existing approaches do often not sufficiently address long-term, slow onset changes due to climate change. Also, risk and vulnerability assessments often do not meet the information needs of policymakers and local governments in order to manage the risks of climate change and associated losses and damages effectively.[14]

Pertinently, the ability to predict either short-term costs or long-term effects for weather events is difficult, even though effective policy making frequently necessitates a precise assessment of economic harms. This is due to the fact that current models frequently rely on historical data, which in this case means examining data that was influenced by a climate that no longer exists given that CO2 levels are higher than ever and are continuing to rise exponentially. Therefore, it seems that one of the main obstacles to

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[12] ibid.

[13] Vishal Ruia, 'Role of Data Analytics in risk management' (*Ernst & Young,* 22 February 2021) <https://www.ey.com/en_in/risk/role-of-data-analytics-in-risk-management> accessed 25 March 2023.

[14] Dr Reinhard Mecheler, et. Al, *Climate Risk Management Framework for India: Addressing Loss and Damage* (National Institute of Disaster Management and Deutsche Gesellschaft Fur Internationale Zusammenarbeit Giz 2019).

implementing successful supervisory reforms is the lack of adequate data and analytical capacity in relation to climate risks.[15] Hence, it is concluded that the traditional risk management approaches are not sufficient for the measurement of climate change risks.

B. Macro Stress Testing

Macro stress testing has received a lot of attention in many countries since the financial crisis of 2008 as a way to assess potential risks to the financial system. Stress testing is a type of scenario-based analysis used to gauge a system's resistance to potential stresses.[16] Stress testing became a crucial part of crisis management during the 2007–2009 global financial crisis, especially for the FRB and the Committee of European Banking Supervisors.[17] Analysis of climate-related scenarios is becoming a significant method for determining, quantifying, and managing climate-related risks. The term "climate-related scenario analysis" refers, for the purposes of this guidance, "*to exercises used to conduct a forward-looking assessment of the potential impact on a bank of changes in the economy, financial system, or the distribution of physical hazards resulting from climate-related risks*".[18] These tests are different from conventional stress tests, which usually evaluate the potential effects of brief shocks on current economic and financial conditions.

In order to assess how well a bank's strategy and risk management are prepared for structural changes brought on by climate-related risks, banks can

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[15] Basel Committee on Banking Supervision, *Climate-related financial risks-measurement methodologies* (Bank for International Settlements, April 2021).

[16] Marcelo, A., A. Rodríguez, and C. Trucharte, 'Stress Tests and Their Contribution to Financial Stability' (2008) 9 65-81 Journal of Banking Regulation <https://doi.org/10.1057/jbr.2008.1>.

[17] M Goldstein, 'Banking's Final Exam: Stress Testing and Bank-Capital Reform' (Peterson Institute for International Economics Press 2017).

[18] K Dent and Ben Westwood, *Stress Testing of Banks: An Introduction* (Bank of England, 2016).

apply an efficient framework for climate-related scenario analysis alongside their current risk management procedures.[19] Macro-prudential stress tests are intended to evaluate the financial sector's overall resilience to shocks, which may include second-round effects resulting from connections with the larger financial system or the economy.[20] Even though data is gathered at the firm level, the analysis reveals risks and weaknesses that could jeopardize the stability of the financial system as a whole.[21] It would be helpful for banks to incorporate macro-stress testing for the identification and assessment of the risk which will subsequently enable it to estimate the financial stability analysis of the climate change risks.[22]

Macro stress testing has been devised in various countries like The Netherlands, China, United Kingdom, European Union, France and Australia. These countries are the frontrunners in implementing climate stress testing and pertaining regulations. For instance, People's Bank of China (**"PBC"**) has standardized green disclosures and green credit ratings since 2018. In the UK, the Prudential Regulation Authority and the Bank of England had incorporated climate stress testing as part of their yearly Concurrent Stress Testing process. Although modelling climate-related scenarios and evaluating the impact of associated second-order effects are complex challenges, climate stress tests still offer crucial data. Greater expertise will be developed through more

[19] Office of the Comptroller of the Currency, Principles for climate-related financial risk management for large banks <https://www.occ.gov/news-issuances/bulletins/2021/bulletin-2021-62a.pdf> accessed 29 March 2023.
[19] Patrizia Baudino and Jean-Phillippe Svoronos, *Stress-testing banks for climate change – a comparison of practices* (Bank for International Settlements 2021).
[20] Ibid.
[21] Patrizia Baudino, R. Goetschmann, J. Henry, K. Taniguchi, and W. Zhu, *Stress-Testing Banks – A Comparative Analysis* (Bank for International Settlements 2018).
[22] Manal Shah, 'Macro-Stress Testing for Climate Risks and Green Finance Regulations' (*IndiaCorpLaw,* 19 November 2022) <https://indiacorplaw.in/2022/11/macro-stress-testing-for-climate-risks-and-green-finance-regulation.html> accessed 29 March 2023.

practice and need once climate stress scenarios are on the agenda and considered legitimate by regulatory bodies and the businesses they regulate.[23]

C. The Case Study of Bank of Japan

Macro stress testing is carried out by the Bank of Japan using various scenarios that reflects the financial and economic conditions at different points in time. The results were then published in the semi-annual Financial System Report. Macro stress testing is done every six months, and the Financial System Report (**"FSR"**) has published the results. In the FSR, macro stress testing has two goals.[24] First, it describes the potential risk factors that Japan's financial institutions may encounter and assesses how resilient the Japanese financial system is as a whole to these risks. In order to ensure the stability of the financial system, the Bank also uses it to facilitate communication with pertinent domestic and international parties.[25] The Bank's macro stress testing currently includes the following noteworthy components.[26] First, it uses the FMM, a medium-sized structural macromodel with two sectors—financial and macroeconomic—to reflect the feedback loop between the financial and economic sectors. Second, it can analyze data for specific financial institutions as well as overall metrics like capital adequacy ratios and net interest income.

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[23] Aziz Durrani, Ulrich Volz and Masyitah Rosmin, 'The Role of Central Banks in Scaling up Sustainable Finance: What do Monetory Authorities in Asia and the Pacific Think?' (2020) ADBI Working Paper Series, Asian Development Bank <https://www.adb.org/sites/default/files/publication/575571/adbi-wp1099.pdf> accessed 30 March 2023.

[24] Financial System and Bank Examination Department, 'Macro Stress Testing at the Bank of Japan' (2014) Bank of Japan 1.

[25] ibid.

[26] ibid.

IV. IMPACT OF GREEN FINANCE & ITS REGULATION

Green Finance as a term has gained traction among policymakers, regulators, and institutional bodies around the world in recent years. There is no clear definition of green finance and its components in any academic/scientific literature for India. In the absence, terms like ESG Investment, sustainable finance, and climate finance are used interchangeably or in conjunction with it.[1] Without a defined term, there is high probability that attribution can be arbitrary and may cause confusion if actions are not perceived as being in line with pollution reduction, climate change adaptation, and mitigation.[2] However, the United Nations Environment Program (**"UNEP"**) have attempted to define green finance. Green finance refers to national or global finance funded by private, public or alternative funds that seeks to support risks imposed by climate change and support sustainability, particularly aspects such as biodiversity and resource conservation.[3] This definition has been a guiding light for various governments and inter-governmental agencies for the development of policies.

Markets can be shaped around important policy agendas using a variety of potent interventions from policy actors.[4] Recently, the Reserve Bank of India announced regulatory policy initiatives for combating climate risks and sustainable finance. These guidelines include guidelines on 1) wide

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[1] Inderst, G., Kaminker, Ch., and Stewart, F., 'Defining and measuring green investments: implications for institutional investors' asset allocations' (2012) OECD Publishing.
[2] Labanya Prakash Jena & Dhruba Purkayastha, 'Accelerating Green Finance in India: Definitions and Beyond' (June 2020) CPI Discussion Brief, Climate Policy Initiative.
[3] Maya Forstater and Naurin Nuohan Zhang, 'Definitions and Concepts: Background Note' (2016) UNEP <https://unepinquiry.org/wp-content/uploads/2016/09/1_Definitions_and_Concepts.pdf> accessed 20 March 2023.
[4] Alex Nichols, 'Policies, Initiatives, and Regulations Related to Sustainable Finance' (Asian Development Bank 1 2021).

framework on green deposits 2) disclosure framework on climate related risks 3) climate scenario analysis and stress testing.[5] This embarks India's landmark step towards the formulation of green finance regulations. Green finance regulations refer to policies developed by a state regarding all public and private organizations that provide financial support for sustainable development initiatives. The objective of Indian Government here could be tweaking the Indian financial market by increasing market participants' alleged interest in financial instruments with a "green" outlook.[6]

Globally, in order to address climate change and environmental degradation, national governments, financial institutions, and international organizations are increasingly realizing the significance of green finance policies (Table 1).

Table 1: Policies/Initiatives undertaken across the globe by 2021

Policy Level	Developing Authority/Country	Policy/Initiative
Transnational	N/A	Paris Agreement
Transnational	United Nations	UNEP Environment Fund
Transnational	United Kingdom	Social Investment Task Force

[5] ET Online, 'RBI announces regulatory guidelines on climate risk and sustainable finance' (*The Economic Times*, 8 February 2023) <https://economictimes.indiatimes.com/news/economy/policy/rbi-announces-regulatory-guidelines-on-climate-risk-and-sustainable-finance-for-res/articleshow/97718777.cms?from=mdr> accessed 30 March 2023.

[6] Department of Regulation, 'Discussion Paper on Climate Risk and Sustainable Finance' (2022) Reserve Bank of India <https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/CLIMATERISK46CEE62999A4424BB731066765009961.PDF> accessed 30 March 2023 ["RBI Discussion Paper"].

Regional	European Union	European Green Deal
Regional	Asian Development Bank	ASEAN Catalytic Green Finance Facility
National	United Kingdom	Green Finance Taskforce
National	United States	Green New Deal
National	Netherlands	Donut Economy
National	India	Green Bonds
National	India	Green Debt Securities (Reporting & Disclosures)
National	India	ESG & Sustainability Regulation

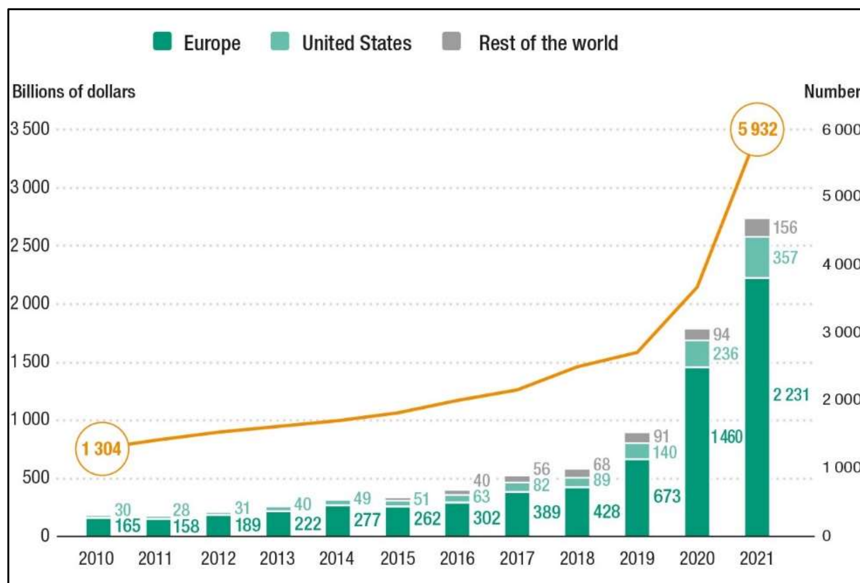
These international initiatives are crucial for advancing green financial practices and aiding the shift to a low-carbon economy. These regulations can assist in reducing the effects of climate change and promoting environmental sustainability by encouraging financial institutions to invest in sustainable projects. As estimated by UNCTAD, the value of sustainable financial products is to be $5.2 trillion, up 63% from 2020. In addition, there are $2.5 trillion in sustainable bonds (including green, social, and mixed-sustainability bonds) (Figure 1) and $2.7 trillion in sustainable funds (Figure 2).[7]

[7] UNCTAD, 'Regulation rising as financial markets tackle climate risks' (*UNCTAD*, 09 June 2022) <https://unctad.org/news/regulation-rising-financial-markets-tackle-climate-risks> accessed 29 March 2023.

Figure 1: Sustainable Bonds Market, 2015-2021 (Billions of Dollars)

Source: United Nations Conference on Trade and Development

Figure 2: Sustainable funds and assets, 2010-2021 (Number of funds, r/h axis, and billions of dollars, l/h axis)



Source: United Nations Conference on Trade and Development

The authors hereby establish the analysis of the policies and regulations development by the authorities. In United Kingdom, the

government rolled out a green finance task force for the purpose of developing proposals on how the public and commercial sectors should cooperate to make green financing a crucial component of the UK financial services sector, such as increasing investment into cutting-edge clean technology and improving demand and supply for green lending, etc.[8] Whereas in India, the Securities Exchange Board of India (**"SEBI"**) mandated disclosure requirements for issuers of green debt securities by regulation called SEBI (Issue and Listing of Debt Securities), 2008. This policy aimed at

- *"Continuous review and assessment of identified green project(s) and/or asset(s);*
- *Continuous disclosure of utilized and unutilized proceeds;*
- *Ensuring that all project(s) and/or asset(s) funded by the proceeds of green debt securities, meet their documented objectives; and*
- *Offering qualitative and quantitative indicators on the environmental impact of the project(s) and/or asset(s); and*

V. VERIFYING PROCEEDS AND INTERNAL TRACKING MECHANISMS, THROUGH EXTERNAL AUDITORS."

However, the correlation of green finance with the green finance regulations and green technology innovation creates positive as well negative impact on the market. According to some studies, the mechanism of disparate environmental regulations on the development of green technologies is negatively regulated by green finance. The "command and control" environmental regulations' detrimental effects on green technological innovation are lessened by green finance, while the "market incentive"

[8] Green Finance Taskforce, *Accelrating green Finance* (Government of United Kingdom, 2018).

environmental regulations' beneficial effects are lessened. On the other hand, through space overflow, green finance can effectively support the development of green technology innovation in nearby areas while also significantly enhancing the level of local green technology innovation.[9]

VI. THE DAWN OF A NEW AGE – ENFORCING MACRO STRESS TESTING VIA GREEN FINANCE REGULATIONS

India is amongst the countries who yet do not have any codified sustainability or green policies in particular for the banking sector, however, there have been several attempts from the regulatory bodies for promoting an overarching policy that covers the financial sector in terms of green financing. RBI has recently released a press-note stating that it will soon be coming up with a Policy to regulate Green Finance and to prevent the harms associated with climate risks.[10] This is in addition to the Discussion Paper that RBI released on Climate Risk and Sustainable Finance, wherein RBI has tried to examine the risks attributable to climate change, and the need for appropriate governance, strategies to overcome such risks, and devise micro-prudential risk management structure for the same.[11] The question that arises is how do Green Finance Regulations help in enforcing macro stress test? The answer is two-limbed –

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[9] Fang Y and Shao Z, 'Whether Green Finance Can Effectively Moderate the Green Technology Innovation Effect of Heterogeneous Environmental Regulation' (2022) IJERPH.

[10] Reuters, 'RBI to issue norms to boost green finance, mitigate climate risks' (*Times of India* 08 February 2023) <http://timesofindia.indiatimes.com/articleshow/97721100.cms?utm_source=contentofinterest&utm_medium=text&utm_campaign=cppst> accessed 29 March 2023.

[11] RBI Discussion Paper (n 39).

A. Creation of a Robust Framework

Green Finance regulations have to stand-up to their responsibility of regulating and supervising sustainable financing by formulating rules, governing REs and empowering the Regulators. Incorporating provisions on macro-stress testing is key step towards this responsibility.

Climate risks have been broadly categorized into; a. physical risks and b. transition risks.[12] The physical risks include ones that are a resultant of extreme weather events, such as heatwaves, floods, storms, ecosystem pollution, chronic sea-level rise or water scarcity, and deforestation/desertification.[13] Interestingly, the transition risk has its genesis in the policy movement towards low carbon economy, for instance, public policy change, technological changes, etc.[14] While these transitioning policies bring forth opportunities for sustainable development, it also imposes the governments, REs, investors, and borrowers with high transition costs. Creation of a robust framework in form of Green Finance Regulation entails internalizing these risks via Macro stress testing. For this purpose:

- Mandating mapping of risks and disclosure: Macro-stress testing requires data of REs on their exposure to climate-related hazards. These regulations can mandate the REs to map the exposure and disclose the same, for instance, concentration in CO2/GHG-intensive assets, carbon emission footprint of portfolio, liabilities (including borrowings and credit lines) provided to entities exposed to climate

[12] Prashant Vaze, Neha Kumar, Sarah Colenbrander, Lily Burge and Nandini Sharma, "Identifying, managing and disclosing climate-related financial risks: options for the Reserve Bank of India" (2022) ODI Report.
[13] ibid.
[14] ibid.

risks, collateral positioned in higher-risk flood prone areas, coastal areas, etc. Thus, regulators can better comprehend the possible effects of these risks on the entire financial system. Further, this will lead to REs providing green financial products to de-risk their portfolio.

- Mandating top-down macro stress tests for the REs & providing guidelines on bottom-up technique: A top-down technique, as it's typically defined in stress testing, reflects the fact that the exercise is nearly totally directed by a single authority, which also supplies the scenario and the major premises.[15] In contrast, a bottom-up method is one in which businesses use their own modelling and occasionally add assumptions to obtain the results to the extent to which these may better reflect their individual circumstances.[16]

  The authors advocate that the top-down approach should be made compulsory by the Regulations, and even a separate authority supervised by the RBI could be created to carry out these functions. The Regulation should mandate that RBI should carried out the macros stress test at a regular interval by including in its pool REs from various sectors. The rationale behind this exercise is to gain access to a holistic examination of data and to increase the exposure of data. For instance, RBI can undertake the top-down test by ascertaining credit risk, sectoral risk, interest risk, and liquidity risk.

  Similarly, guidelines of a bottom-up approach, will be dealt in the subsequent part of the article.

- Regulating customers to the REs: Tenor restrictions may be made applicable to clients in industries that are particularly susceptible to

[15] Basel Committee on Banking Supervision, *Stress testing principles* (Bank for International Settlements, October 2018).

[16] ibid.

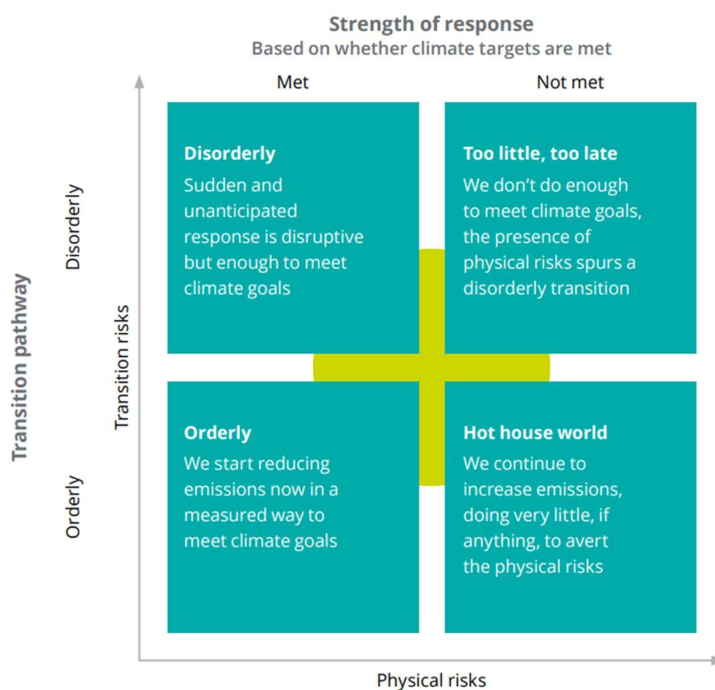
climate risks. Moreover, customers with real estate as collateral to be provided with a reduced loan-to-value cap if they don't meet the minimum sustainability requirements. Customers whose productivity is directly impacted by weather conditions should be directed to get insurance against extreme weather occurrences (such as seasonal floods and droughts). Further, customers in CO2 and GHG-intensive businesses should be subjected to a sustainable energy transition plan.

- <u>Rules on Insurance Companies</u>: Insurance companies form the backbone of risk mitigation response when a climate disaster hits. Hence, the Green Finance Regulation can provide specific rules on insurance companies, for instance, based on previous data of the losses incurred due to climate disaster, the prices of the insurances to be adjusted and at the same time kept affordable to the consumer so that insurance protection vacuum is not created.
- <u>Incorporating penalty for violation:</u> For non-disclosure of REs' data and non-compliance with the guidelines of macro stress testing, the Regulation can impose penalties.
- <u>Mandating the publication of results</u>: The Regulation can mandate the publication of the results of the stress test on the websites of the REs or via Reports similar to financial statements that are made available to all stakeholders. An explanatory note can be added after the concluding report that whether or not the RE has sufficient capital buffers to withstand the potential impact of the climate risks.

B. Providing guidelines on conducting Macro stress testing

The Green Finance Regulations can provide for guidelines on formulation and implementation of macro stress test by the REs individually.

The public sector banks, insurance companies, pension funds, non-banking financial companies, and other REs can be promoted to develop their own procedures and standards for such stress testing. The Regulation can stipulate the requirement of 'portfolio analysis' (where the REs can identify the assets and liabilities they want to test), followed by modelling stress test according to sector specificity (where the REs can identify their primary sector that is likely to be affected more, such as coal-intensive industries, followed by the sub-sectors). Accordingly, the impact assessment should be done by tailoring the stress test as per the following graph:



Source: Deloitte – Centre for Regulatory Strategy, Asia Pacific (Report on Climate-related risk stress testing)

Based on the graph various scenarios can be created such as; an economic recession, a sharp increase in interest rates, and a decline in asset prices, floods due to melting of glacier caused to continuous carbon emission,

orderly implementation of sustainability policies, disorderly transition to a low-carbon economy, which included a sharp decline in oil and gas prices, a sudden rise in carbon prices, etc. Therefore, the Green Finance Regulation can provide for a general framework of a macro stress test, based on which the REs can develop their own methodology.

C. Issues in the enforcement of macro stress testing via Green Finance Regulations

The mechanism of macro stress testing establishes various opportunities to the industry but also brings certain challenges in the enforcement of the same. The authors have identified carious challenges that shall be addressed by the regulators for the formulation of the policy:

- Disclosure of data: Many jurisdictions currently experience deficiencies in the availability, quality, and granularity of the data used for climate scenario evaluations, especially for transition hazards but also frequently for physical threats. Another potential problem is the speed at which datasets can be updated; financial companies, who are used to updating data on a quarterly or semi-annual basis, may have different needs from regulators, who can only update databases every five years. With respect to the Indian context, Data on physical and transitional risk factors is scarce. Because existing data-gathering practices do not meet international standards, the already available data is insufficient and unreliable.[17]
- Data Privacy concerns: Data privacy remains a big concern in the enforcement of disclosure requirement, especially in the absence of

[17] Neha Khanna et. Al, 'Climate Risks and Opportunities' Climate Policy Initiative 10.

any data protection laws in India. Companies and institutions may be required to divulge sensitive information, such as confidential information about their business operations, investments, and strategy, as a result of climate-related stress testing. This information has a likelihood of being abused or obtained by unauthorized individuals, posing threats to finances, reputation, or competition.[18] Further, for the stress testing, data retention is possible, thus it's important to follow the right disposal and retention procedures to ensure privacy. Data breaches and unauthorized access are made more likely when data is kept around longer than necessary or is not properly disposed away.

- Climate and modelling expertise: The help of experts in climate and science when creating or customizing data sets to match the context of the financial institution will be necessary. In any disclosures made, financial institutions will also need to be able to show that they comprehend the information and presumptions underlying the climate risk scenarios for the regulator and the general public.[19]

Therefore, the enforcement of macro stress testing via green finance regulations marks a positive yet murky step towards sustainable financing. India could formulate these regulations through the aid of numerous governments and think-tanks across the globe.

VII. CONCLUDING REMARKS

Green Finance Regulations thereby in the context of macro-stress testing satisfy the twin overarching purposes: first, introducing the macro-

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[18] Centre for Regulatory Strategy, 'Climate related risks and stress testing' (2020) Deloittee 28.
[19] Neha Khanna et. Al, 'Climate Risks and Opportunities' Climate Policy Initiative 10.

stress test as a mandate for internalizing climate change induced risks, and second providing for guiding rules for the implementation of such stress tests. Global financial system stability is severely threatened by climate change, and conventional methods for managing financial risk may not be sufficient to handle the problems this presents. Macro-stress test offers priceless remedy to the plight of Regulators and REs to such possible shocks and to reduce the risk.

The authors make the case that macro-stress testing should be expanded to evaluate risks associated with climate change, such as liability risks, transition risks, and physical risks. Regulators and financial institutions can more accurately assess their resilience to climate-related disruptions and take the required steps to mitigate these risks by including climate hazards into stress testing scenarios. The authors also make the case that green finance legislation can be crucial in enabling the use of macro stress testing to evaluate risks associated with climate change. Thus, macro-stress testing along-side hands in glove with green finance regulations is a crucial instrument for evaluating the threats to financial stability posed by climate change. Therefore, to strengthen financial stability and resilience in the face of climate change, governments and financial regulators must collaborate to establish and execute such regulations.

V. CBDC REGULATIONS IN INDIA: THE ROADBLOCKS AND OPPORTUNITIES FOR RBI

- Shivkant Sharma & Anupriya Dasila*

ABSTRACT

The introduction of Central Bank Digital Currencies ("**CBDCs**") as e-rupee, caused financial technology to spread its wings in the currency regulation of India. This development happened amidst several niche cryptocurrencies, which have taken the world by storm, with their increasing valuation. Although this wheel of cryptocurrency investments was marred with many crises, prime dent has been caused by the recent FTX crisis, which spilt out its volatile and unregulated nature. These incidents pushed the government to launch a digital currency which is backed by the sovereign and is recognised as a legal tender. In India, the citizens are becoming very adept with technology through the UPI payment systems, and its predecessors by facilitating financial inclusion via digital means. This growing connectivity between the banks and customers set a solid foundation for CBDCs. In this regard, RBI being the main regulator of currency, has released a concept note on CBDCs before their implementation on a pilot basis. The note exhaustively discusses several aspects, like the working infrastructure, possible merits and implications, along with relevant instances from several countries. However, the concept note of RBI is merely an epiphany of ideas, while the real scenario can turn out to be different. This paper presents the genesis of CBDCs and the difference between cryptocurrency and CBDCs besides providing a critical analysis of the concept note.

I. Introduction.................................90
II. Understanding the Nature of CBDC, and What Differentiates it From Cryptocurrency....................................92
III. Current State of the Digital Payments Landscape In India..............95
IV. The Role of Technology in CBDC Regulation and Working Infrastructure 97
V. Merits of CBDC In India - Efficiency And Transparency In Transaction Systems...........................100
VI. Public Perception and Education Around CBDC in India.......................102
VII. The Implications of CBDCs. .105
VIII. The Practices For CBDC Regulations - Lessons From Other Countries..107
IX. Conclusion and Recommendations for the RBI...110

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I. INTRODUCTION

The winds of change can be felt, gliding at the very outset of technological evolution in the 21st century. The gradual shift has not only changed the way individuals carry out their business activities but also compelled governments across the globe to think beyond the traditional mechanics of financial systems pertaining to money and payment systems.[1] In recent years, the financial regulatory authorities of many countries across the globe have started implementing various forms of technology in their working infrastructure pertaining to the issuing of currencies, the cardinal one being, Central Bank Digital Currency (CBDC).[2]

The immense growth of fast and convenient digital payment systems as well as the mushrooming of unregulated private virtual currencies in multiplicity[3], sit at substantial odds with the historical concept of money.[4] Consequently, the integration of technology into the banking sphere has made bankers and customers perplexed. Undoubtedly, the fiat currency and Unified Payments Interface (UPI) hold the major chunk of financial transactions in our country, on that backdrop the issuing of CBDC will surely going to startle the conventional users of the existing payment mechanisms.[5] It is important to note that private virtual currencies are not a burden on the central bank balance

[1] Arner D, Barberis J, Buckley R, 'The Evolution of Fintech: A new Post Crisis Paradigm', (2016) UNSW Law Research Paper 62.
[2] World Bank Group and IMF 'Fintech: The Experience So Far', EPolicy Paper No. 19/024, (2019).
[3] Bains, Parma, and Nabuyasu Sugimota 'The Regulations of Crypto Assets: A Closer Look at the Crypto Asset Ecosystem' (2022) 2 IMF.
[4] Ibid.
[5] B. Singh and S.Kaur, 'Crypto Currencies/Blockchain and the Banking System' (2019) 2 The Journal of Indian Institute of Banking and Finance 56.

sheet and carry no intrinsic value.[6] Still, the growing use of these kinds of currencies gave central banks around the world food for thought.[7] This is certainly relevant as electronic payment methods become more popular and printing money becomes more expensive and difficult.[8]

Additionally, the steady rise of private virtual currencies gave a bundle of nerves to the government due to its volatile and decentralised nature which threatened the stability of the financial system.[9] Furthermore, the persisting cyber security concerns pressed the central banks to look for an alternative, and thereafter, CBDCs came into the picture. The RBI launched the pilots of CBDC, in both retail and wholesale spheres in November and December 2022 respectively. Though it has received a warm welcome from financial entities, the citizens are still in awe of this new development, whether it is a sword or a shield to them in the digital landscape, especially at the outset of the private crypto currencies.[10] There are several challenges before the RBI like cyber security, data protection, infrastructure cost, awareness and benefits of CBDC. This research article aims to demystify the operations, regulations and consternations regarding CBDC.

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[6] IMF, 'Review of the Institutional View on the Liberalization and Management of Capital Flow' (2022), IMF Policy Paper 2022/08. <https://www.imf.org/en/Publications/Policy-Papers/Issues/2022/03/29/Review-of-The-Institutional-View-on-The-Liberalization-and-Management-of-Capital-Flows-515883> Accessed 29 March 2023.
[7] H.A. Saulamke and P.N.D.P Hinge, 'Digital Payment System with Reference to Financial Transactions in India: An Empirical Analysis' (2019) 8 Adalya Journal 70, 73.
[8] N. Sobti, 'Impact of Demonetization on Diffusion of Mobile Payments Services in India: Antecedents of Behavioural Intention and Adoption Using Extended UTAUT Model' (2019) 16(4) Journal of Advances in Management Research 472, 481.
[9] C. Margulis, A. Rossi, 'Legally Speaking, is Digital Money Really Money?' (*IMF Blog,* 14 January 2022) <https://www.imf.org/en/Blogs/Articles/2021/01/14/legally-speaking-is-digital-money-really-money> Accessed 29 March 2023.
[10] Ibid.

II. UNDERSTANDING THE NATURE OF CBDC, AND WHAT DIFFERENTIATES IT FROM CRYPTOCURRENCY.

The words "digitisation" and "technology" did not confine themselves to a part of tough jargon. Rather, they lie at the tip of the tongue of everyone, especially the enthusiasts of cryptocurrency. It has brought out a new form of excitement, because of the disruption it has caused in the traditional financial systems along with the influx of investors attributed to it.[11] India has seen a growing interest in cryptocurrencies in recent years, with a surge in trading volumes of different currencies and investments through varied channels. India holds the record of highest number of crypto owners and comes second with respect to adoption rate.[12] On the contrary, this inrush of crypto-investments worried the central government.[13] In 2018, the Reserve Bank of India (RBI) prohibited cryptocurrency exchanges effectively to cut off the banking channels for crypto traders and investors.[14] However, the ban was lifted in March 2020 by the Supreme Court of India in its judgement, which declared the ban unconstitutional.[15] Since then, there has been a renewed interest in cryptocurrencies, with many Indians investing in Bitcoin, Ethereum, and other digital assets. Indian exchanges such as WazirX, CoinDCX, and ZebPay have continuously reported a surge in trading volumes and user registrations. This verdict accentuated the need to alleviate the drought of crypto-based legislation.

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[11] Robert Searle, 'Futuristic Economics for the 21st Century?' in Dr. Debesh Bhowmik, *An approach towards Central Bank Digital Currency* (Kunal Books 2022).
[12] Ashwani Kumar, 'The crypto Framework: Building Blockchain Businesses, Nationally' (*Financial Express*, 5 October 2022).
[13] B. Singh and S. Kaur, 'Crypto Currencies/Blockchain and the Banking System' (2019) 2 The Journal of Indian Institute of Banking and Finance 56.
[14] Circular, Reserve Bank of India (6 April 2018).
[15] *Internet and Mobile Association of India V Reserve Bank of India,* (2020) SCC Online SC 275.

In January 2021, the government proposed a bill named *the Cryptocurrency and Regulation of Official Digital Currency Bill, 2021* was introduced by the Indian Parliament,[16] which sought to ban all private cryptocurrencies, and simultaneously a framework for the creation of a digital rupee issued by the RBI. The RBI published various research papers and, in its concept note,[17] it defined CBDC as *"the legal tender issued by a central bank in a digital form. It is the same as a fiat currency and is exchangeable one-to-one with the fiat currency. Only its form is different."*[18] The recognition given to CBDCs as legal tender by the government makes them more reliable than cryptocurrencies.[19] Features like trust, safety and settlement finality, found in physical cash, are also present in e- rupee.[20] In essence, these are the manifestation of fiat currency in its new incarnation in digital form has gotten traction and countries across the globe have been using them for hundreds of years.

The difference between CBDCs and Cryptocurrencies.

There are certain key differences between CBDCs and cryptocurrencies. CBDCs are issued by central banks, which regulate and oversee their use, while cryptocurrencies are created by private individuals or

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[16] Cryptocurrency and Regulation of Official Digital Currency Bill, 2021.

[17] Fintech Department, 'Concept Note on Central Bank Digital Currency' Reserve Bank of India (October 2022).

[18] https://rbidocs.rbi.org.in/rdocs/Speeches/PDFs/CBDC22072021414F2690E7764E13BFD41DF6E50AE0AE.PDF

[19] Aarti Patki and Vinod Sople, 'Indian Banking Sector: Blockchain Implementation, Challenges and Way Forward' (2020) 4 Journal of Bank Finance and Technology 65.

[20] Press Trust of India, 'RBI Internal Panel Working on Model of Central Bank's Digital Currency division Very Soon: Deputy Governor B P Kanungoo' (*Economic Times,* 5 February 2021) <https://economictimes.indiatimes.com/news/economy/policy/rbi-internal-panel-working-on-model-of-central-banks-digital-currency-decision-very-soon-deputy-governor-b-p-kanungo/articleshow/80704944.cms> Accessed 29 March 2023.

entities and operate independently without sovereign authority.[21] CBDCs are recognized as legal tender in the countries where they are issued, while cryptocurrencies are not considered legal tender in most countries.[22] CBDCs are designed to maintain a stable value against the national currency and facilitate secure and efficient payments and settlements. In contrast, cryptocurrencies serve a broader range of purposes, including investment and speculation, and are often characterised by high volatility and fluctuations in value.[23] "*CBDCs are not digital assets as they are the mere digital manifestation of fiat currency and a significant point of difference is the taxation aspect. It is crucial to understand that while CBDCs are 'currency' they are not subject to tax. However, virtual digital currencies, as proposed in the Finance Bill, 2022, have been made subject to high tax incidence.*"[24] Finally, CBDCs are built on centralised and permission systems, while cryptocurrencies are often based on decentralised and permissionless blockchain technology which increases the risk of money laundering and terror financing.[25]

The recent instance of the FTX bankruptcy is a testimony to the volatile nature of cryptocurrencies because there is no central authority to

[21] Bains, Parma, and Nabuyasu Sugimota 'The Regulations of Crypto Assets: A Closer Look at the Crypto Asset Ecosystem' (2022) 2 IMF.
[22] Tobias A 'Stablecoins, Central Bank Digital Currencies and Cross-Border Payments: A New Look at the International Monetary System' (IMF-Swiss National Bank Conference, Zurich, May 2019).
[23] C. Margulis (n. 9).
[24] Meghna Mittal, 'CBDC in India- A Leap of Faith?' (Vinod Kothari, 1 February 2022) <https://vinodkothari.com/2022/02/cbdcs-in-india-a-leap-of-faith/> Accessed 29 March 2023.
[25] Kosse and, I. Mattei, 'Gaining Momentum- Results of the 2021 BIS Survey on Central Bank Digital Currencies' (2022) BIS Paper No. 125. < https://econpapers.repec.org/RePEc:bis:bisbps:125> Accessed 29 March 2023.

regulate them.[26] As it went bankrupt, the global crypto currency market capitalisation was USD 0.95 trillion, and it has massively dropped to USD 0.84 trillion.[27] As a consequence, many people lost everything. Investors, venture capitalists and other investment managers related to crypto deals are trying to shift from the wreckage, and pondering over the fact that though cryptocurrency offers a great potential to earn money quickly, a brave face of approach is required to make it a fulltime venture.[28] Therefore, the adoption of CBDC in India, by using blockchain technology, gives the quality of fiat currency along with giving protection to citizens from the volatility of cryptocurrencies.

III. CURRENT STATE OF THE DIGITAL PAYMENTS LANDSCAPE IN INDIA.

India has come a long way in terms of its payment system and now, the digital payment system has become an irreplaceable part of modern-day life. The genesis of the digital payment system in India can be traced back to 1996, when ICICI bank launched online banking services for the first time to their clients at its retail branches, which was at seen as a luxury at that time.[29] Thereafter, a lot of payment systems have been developed by RBI such as debit cards, credit cards, National Electronic Funds Transfer (NEFT), and Real-Time Gross Settlement (RTGS) to provide hassle-free service to the people. Over the last few decades, India has experienced tremendous growth

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[26] Jim Wyss, 'Licking its FTX wounds, Bahamas Step-ups Push for Digital Fiat (Bloomberg, 14 January 2023)<https://www.bloomberg.com/news/articles/2023-01-14/ftx-collapse-challenges-bahamas-sand-dollar-central-bank-digital-currency-cbdc#xj4y7vzkg> Accessed 29 March 2023.

[27] Suhail Nathani and Yash Desai, 'India: The FTX Collapse: Key Takeaways' (Mondaq, 9 January 2023) < https://www.mondaq.com/india/fin-tech/1268678/the-ftx-collapse-key-takeaways>Accessed 29 March 2023.

[28] Ibid.

[29] K. Bhinde, 'Growth of Digital Payment System in India' (2019) 22 Think India Journal 245.

in digital payments, largely due to the government's demonetization initiative in 2016.[30] The country has witnessed an unprecedented surge in the use of digital payment modes such as Bharat Interface for Money-Unified Payments Interface (**"BHIM-UPI"**), Immediate Payment Service (**"IMPS"**), Prepaid Payment Instruments (**"PPIs"**), and National Electronic Toll Collection (**"NETC"**) system. The growth in digital payments has resulted in more transparency in transactions, which has empowered the country's economy and promoted digital inclusion.[31] BHIM-UPI has emerged as the preferred payment mode over other alternatives[32] as it has served as the means of bringing the payment mechanism to the palm top, thereby promoting financial inclusion which sets the stage for CBDC introduction. But despite significant progress, large parts of the population remain financially underserved. Increasing financial inclusion has many challenges including access to digital technology. CBDC could potentially facilitate financial inclusion by increasing access to digital payments and thus serving as a gateway to wider access to financial services.

The concept note of RBI envisages the interoperability of CBDC with the current payment infrastructure of UPI, digital wallets like PayTM, Gpay and many more. However, there are certain limitations while doing transaction through UPI, there is cap on number of transactions a customer can do in a day and recently NPCI proposed to charge 1.1% on merchant transaction

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[30] N. Sobti, 'Impact of Demonetization on Diffusion of Mobile Payments Services in India: Antecedents of Behavioural Intention and Adoption Using Extended UTAUT Model' (2019) 16(4) Journal of Advances in Management Research 472, 481.

[31] S. Rastogi and A. Sharma, C. Panse and V.M Bhimavarapu, 'Unified Payment Interface: A Digital Innovation and its Impact on Financial Inclusion and Economic Development (2021) 9(3) Universal Journal of Accounting and Finance 518.

[32] Ibid.

above 2000 rupee.[33] However, CBDC will provide hassle-free transaction service to customers without any charges and there will be no cap as such in terms of CBDC transactions in a day. In addition to this, RBI is also planning to provide offline payment service through CBDC for a certain amount that will enhance the digital inclusion in financial services.[34] Moreover, CBDC-R will be for small customer and merchants while CBDC-W will be wholesale and cross border payments.

IV. THE ROLE OF TECHNOLOGY IN CBDC REGULATION AND WORKING INFRASTRUCTURE

Cutting-edge technology is a prime requirement, especially when it comes to the invention of a currency that not only promises peer-to-peer payments but also provides convenience and cash-like safety. In addition to this, the concerns of privacy and accessibility must satisfy the designs as being a currency, it is bound to be in the pockets of people from various walks of life. As digital payments continue to rise in India, addressing these concerns is essential to build confidence amongst citizens and curb the financial turmoil.[35] In this regard, there are two broad types of CBDCs. For retail purpose, CBDC has the suffix 'R' (CBDC-R), which can also be utilised for general purposes. On the other hand, for wholesale, CBDC has the suffix 'W' (CBDC-W) which can be also utilised for interbank purpose. CBDC-R will be available to all non-financial consumers and businesses, covering the private

[33] Editor, 'NPCI Sets 1.1% Interchange Fee on UPI Payments Via Prepaid Instruments and Wallets' (The Economic Times,31 March, 2023) < https://m.economictimes.com/tech/technology/npci-sets-1-1-interchange-fee-on-upi-payments-via-prepaid-instruments-wallets/articleshow/99068703.cms>Accessed pn 16 March 2023.
[34] S. V. Kesavaraj, C. Mukund Jakhiya and C. Nisha Bhandari, 'A Study on Upcoming Central Bank Digital Currency: Opportunities, Obstacles, and Potential FinTech Solutions using Cryptography in the Indian Scenario,' 13 International Conference on Computing Communication and Networking Technologies, Kharagpur, India, 1-10 (2022).
[35] Concept note (n 16) 31-32.

sector. On the other hand, CBDC-W will aim to cover securities settlement and smooth payments in interbank transactions.

According to the Working Paper of BIS, which provides an encompassing viewpoint of all the central banks,[36] the private sector will play a vital role for efficient usage of CBDCs. The aforementioned observation is also supported by the concept note of RBI.[37] It envisages the operations of CBDC to be either *"Direct"*, where the central bank issues and gives access to CBDC or *"Intermediate"*, where private players also be a part of the core system developed by RBI, thereby forming a 'Two-tier Model'.

The general operation under the 'Two-tier Model' will carry on under two different mechanisms. The first one is the "Indirect Model", in which a bank or the service provider would act as intermediaries between the central bank and consumers, for the transactions of digital currencies, and would also provide digital wallets to the consumers. Point of difference must be noted, that this intermediary system will operate on the retail segment, while for the wholesale segment, central banks are bound to manage it directly, by keeping a track of all transactions.

The second mechanism is the "Hybrid Model", where as soon as the digital currencies are issued by the central bank, the private intermediaries are responsible for its distribution and all connected customer activities. Though the private intermediaries manage retail payments, the Central Bank also maintains a central ledger, which eventually forms a backup support that the technical infrastructure will facilitate the transaction if the intermediaries face

[36] Raphael Auer and Rainer Bohme, 'The technology of retail central bank digital currency' (BIS Quarterly Review, March 2020).
[37] Concept note (n 16) 24-25.

insolvency and technical outages. The aforementioned model deserves to be appreciated because of the foreseeability it possesses.

Though as per the concept note, RBI prefers to have an "Indirect Model" for digital currency transactions as it upholds its right to issue currency.[38] Aside from issuing currencies, there is an entire supply chain in various processes like account keeping, transaction verification, customer verification, etc. which are managed by RBI. Undeniably, the pace of these activities has accelerated by technical developments. Subsequently, to facilitate the smooth transfer of digital currency and efficiency in allied services, RBI will create tokens and issue them to authorised entities, known as 'Token Service Providers (TSPs). These TSPs will be responsible for token distribution to the end users. Interestingly, the official notification which brings in the CBDC on a pilot basis, mentions blockchain technology.[39] Blockchain technology has many variations underneath, which range from "permissionless technology" which is used in private cryptocurrencies and is processed by unknown validators, to "permission technology" which is processed by known and vetted validators. If CBDCs run on the permissionless variant, the threat of instability will turn into reality. Moreover, the cost of computing accompanied by the proof report requirement for every transaction will not only be expensive but also time-consuming. Therefore, a "permission" centralised form of blockchain technology is necessary.[40]

The concept note stressed the Distributed Ledger Technology (DLT)-based infrastructures.[41] In DLT, the ledgers are managed by multiple entities

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[38] Ibid.
[39] Press Information Bureau, 'Central Bank Digital Currency (CBDC) pilot launched by RBI in the retail segment has components based on blockchain technology' Ministry of Finance (12 December 2022).
[40] Raphael Auer (n 30) 93-95.
[41] Concept note (n 16) 31-33.

in a decentralised manner and each transaction is verified independently, unlike conventional database technologies. However, this process of updating comes with its limitations. Each update in the ledger must harmonise across the nodes of all entities, thereby forming a consensus mechanism. The multiple rounds of communications from one entity to another take time, and henceforth the DLT, only enables lower transactions and can function effectively in small jurisdictions.[42]

Though the stage is set, there are several implications before the curtain falls. India is a country where billions of transactions happen varying from small-scale to voluminous ones, thus RBI requires the digital infrastructure to have robust scalability and a trusted environment to support CBDC.

V. MERITS OF CBDC IN INDIA - EFFICIENCY AND TRANSPARENCY IN TRANSACTION SYSTEMS.

With rapid developments taking place in the world, India has to maintain its place in the financial technology sphere. RBI has been working in this direction by issuing CBDCs to the common public and enterprises, in addition to monetary policy objectives, suiting the current landscape. The need of maintaining stability of digital payments along with building trust among end-users is a paramount prerequisite which will have the following perks:

- *Fewer intermediary risks:* Every banking transaction requires some form of intermediary or other, which acts as a middleman between the borrower and lender, and helps in pooling transactions.[43] However

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[42] Ibid.

[43] Kristalina Georgieva, 'The Future of Money: Gearing up for Central Bank Digital Currency' (IMF, Feb 2022).

there are certain risks associated with the intermediaries. For instance, the recent insolvency of Silicon Valley Bank has affected the banking services of nearly half of all US based technology and life science companies.[44] CBDCs can reduce intermediary risks in several ways. The CBDC transactions are settled directly between the two parties without the need for intermediaries such as banks or payment processors. This helps in mitigating the risk of insolvency or defaults on obligations, which can disrupt the flow of payments and cause financial instability. Further, transactions can be settled in real-time or near real-time, which reduces the risk of settlement failures and the need for intermediaries to hold large amounts of liquidity to cover settlement risks.

- *Ease in Cross Border Transactions:* The existing banking procedure pertaining to the cross-border transactions is expensive and time consuming. The efficient mechanism of secure cross-border payments has been given the prime importance by the G20 Countries, and India being a host of the 2023 G20, showed immense potential by culminating e-rupee. The report by BIS titled*Using CBDCs across borders: lessons from practical experiments* mentions the research experiment that was conducted on the four jointly issued digital currencies of the central banks of two or more countries, respectively.[45] It concluded that, sovereign digital currency yields faster settlements with lower costs and greater operational transferability.
- *Preventing Financial Crime:* Many studies have found out that having a sovereign-backed digital currency would improve in countering

[44] Hanna Zialdy, 'Why Silicon Valley Bank collapsed and what it could mean' (CNN Business, 13 March 2023).
[45] Morten Bech, 'Using CBDC across borders: lessons from practical experiments' (BIS Innovation Hub, 2021).

financial crime such as tax evasion and money laundering. For that CBDCs will have to allow account-based traceability, as compared to the token-based design.[46] In the Indian context, CBDCs need to access enabling factors and fill regulatory gaps to prevent any obscurity that leads to the misuse of CBDCs in nefarious activities. Nevertheless, the Central Bank and other investigative agencies have to design digital currencies to incorporate high-security standards and strict regulations for transferability and traceability.

VI. PUBLIC PERCEPTION AND EDUCATION AROUND CBDC IN INDIA

The previous chapters greatly showcase that the Indian population synchronises with the attempts made by the central bank towards digitalization. UPI system bears the testimony of success as it lessened the burden on the pockets of the consumers by bringing the payment interface to palmtop. Consequently, the possibility of a digital divide has been reduced to some extent.

In the recent judgement in *Lotus Pay Solutions v. Union of India*[47], the division bench of Delhi High Court held that RBI has the authority to regulate the Payment Aggregators as it falls under the purview of the payment systems. In the judgement the bench also acknowledged the rapid development in technology in banking sphere; thereby the courts should accept the increasing scope and ambit of legislation in this regard.[48] The digital rupee serves as an important cue in integrating finance, and technology, therefore RBI has to

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[46] Swiss Federal Council, 'Federal Council report in response to the Postulate 18.3159, Wermuth, of 14.06.2018' (2019) accessed 30 March 2023.
[47] Lotus Pay Solutions v. Union of India, 2022 SCC OnLine 2939.
[48] Lotus Pay Solutions v. Union of India, 2022 SCC OnLine 2939.

address the legal framework with respect to the digital rupee. Through the Finance Act, of 2022, several amendments were made to the Reserve Bank of India Act, 1934 (hereinafter, "**RBI Act**") in accordance with the proposals of the central government for FY 2022-2023. The Section 2 of the RBI Act,[49] clause (aiv) was inserted after clause (aiii), which is as follows,

(aiv) "bank note" means a bank note issued by the Bank, whether in physical or digital form, under section 22;[50]

Section 22 bestows upon RBI the right to issue bank notes and now with the inclusion of the digital rupee, Section 22 will be read together with clause (aiv) of Section 2, for the matters concerned.[51] Moreover, Section 22 A was inserted, with respect to the non-applicability of certain provisions for the digital form of bank notes.[52] According to this provision, Section 24 (Denominations of notes),[53] Section 25 (Form of bank notes),[54] Section 27 (Re-issue of notes),[55] Section 28 (Recovery of notes lost, stolen, mutilated or imperfect)[56] and Section 39 (Obligation to supply different forms of currency)[57] shall not apply to the bank notes issued in digital form by the Bank.

General Public notion and applicability in public policies.

The digital rupee is a "**fit-for-purpose**" currency, as after it is pre-programmed, it could be accepted for only a specific purpose. The CBDC-R and CBDC-W can be immensely helpful in supporting social benefit schemes

[49] Reserve Bank of India Act, 1934, s 2.
[50] Reserve Bank of India Act, 1934, s 2 (aiv).
[51] Reserve Bank of India Act, 1934, s 22.
[52] Reserve Bank of India Act, 1934, s 22A.
[53] Reserve Bank of India Act, 1934, s 24.
[54] Reserve Bank of India Act, 1934, s 25.
[55] Reserve Bank of India Act, 1934, s 27.
[56] Reserve Bank of India Act, 1934, s 28.
[57] Reserve Bank of India Act, 1934, s 39.

and other targeted payments. For instance, a pre-programmed CBDC can be utilised to issue LPG subsidies, as direct benefit transfer, the programming would be done in such a way that only designated LPG agencies are authorised to use these currencies, and would possess the access to convert this CBDC into the retail CBDC or even the fiat currency from a commercial bank. Similarly, many schemes can be supported by this methodology, ranging from Pradhan Mantri Kisan Samman Nidhi ("**PM-KISAN**") to Pradhan Mantri Fasal Bima Yojana ("**PMFBY**").[58] The subsidies can also be extended to other sectors, like in case of agriculture, subsidies for fertilisers could be transferred by the means of CBDC. The specifically programmable CBDCs can also be utilised by private and non-government entities to pay employees' expenses, fuel and telecom bills and other expenses out of industrial supply chain management.

Therefore, adopting CBDCs for the facilitation of social benefit programmes in compliance with the human resource requirements ensures accuracy with pace. Subsequently, the CBDCs can also venture across jurisdictions to fulfil various cross-border remittances, but to make it possible, there has to be a requisite infrastructure for the interoperability of CBDCs between jurisdictions. MSMEs could significantly gain from the infrastructure which CBDCs promise to provide, as with the usage of CBDCs banks will be able to generate a more accurate risk profile. The built-in tracking mechanism boosts lenders' confidence in MSME borrowers and reduces the risk of default. This increases the creditworthiness of MSMEs. Also, the reduction of time and cost of transactions make the lenders process loan applications and disburse funds easily. The CBDCs can catalyse financial

[58] Mihir Gandhi and Vivek Belgavi, 'Central Bank Digital Currency in Indian Context' (PwC, 2021).

inclusion as it can be accessed by anyone with a smartphone and an internet connection, making it easier for MSMEs in remote areas or without access to traditional banking services to access credit.[59]

VII. THE IMPLICATIONS OF CBDCS.

- *Cyber security concerns:* Being a programmed digital currency, it also bears high risks by opening the doors to many cyber threats.[60] Moreover, the central bank has storage information, and sometimes even a complete cache, which creates a degree of apprehension of breach of data as it controls certain levels of transactions between the citizens and the banks. Similar to the problems that have plagued major tech companies and internet service providers (ISPs), this can cause serious privacy breaches. For instance, criminals might break in and exploit data, or central banks might forbid transactions between citizens. In simpler terms, there is a great requirement for setting limitations to control or the digital currencies will lead to over-surveillance by the central banking authorities, thereby breaching the privacy of citizens.
- *Accountability concerns:* Although the digital rupee is legally enforced by a statute, there is still a gap pertaining to accountability with respect to the disputes arising out of CBDC transactions. This makes the end-users perplexed. An IMF Study conducted in 2021 revealed that 40 out of 174 central banks are legally permitted to issue CBDCs, vouch for legal status and strike a balance between maintaining traceability of or

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[59] Ibid.

[60] Budhen Kumar Saikia, 'CBDC in India Issues and Challenges' in Dr. Debesh Bhowmik, *An approach towards Central Bank Digital Currency* (Kunal Books 2022).

financial crimes and respecting the privacy in transactions.[61] Also, the consumer protection being, a cardinal aspect of banking services, a dispute redressal forum and regulations strengthening in this direction are greatly needed, and also a designated authority should exist to manage the disputes. It is pertinent to note that even the concept note released by RBI is silent about the cardinal aspect of dispute resolution.

- *Counterfeit concerns:* The technology operating CBDCs need to be guarded and updated at regular intervals, especially when it comes to the "**tokenised**" form of CBDCs. This could be done by creating a counterfeit CBDC token that looks and functions like a real one, or by creating a digital wallet that purports to hold CBDC but is empty or contains fake CBDC. Many studies have shown that CBDC could be counterfeited by creation of fake CBDC tokens or digital wallets.[62] The Central banks will need to implement strong authentication and verification processes to ensure that only authorised parties can create and use CBDC tokens and digital wallets. The use of sophisticated hacking techniques could attempt to breach the CBDC system and create counterfeit CBDC tokens or manipulate existing CBDC transactions to their advantage.
- *Anonymity Concerns:* The importance of anonymity in a currency depends on individual preferences and the context in which the currency is being used. Fiat currency holds a major chunk of conventional transactions, enjoys no control over it by the government in the form of ledger, and has no tax liability attached to it. If a CBDC

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[61] Gabriel Soderberg, 'Behind the Scenes of Central Bank Digital Currency: Emerging Trends, Insights and Policy Lessons' (IMF, Feb 2022).
[62] Prabina Kumar Padhi, 'Emergence of Central Bank Digital Currency in Indian Perspective: A Conceptual Analysis' in Dr. Debesh Bhowmik, *An approach towards Central Bank Digital Currency* (Kunal Books 2022).

can be utilised for the same purpose, even though the customers transaction data will be saved in encrypted form but the same can also be decrypted by the government because it is maintaining the central ledger. This problem may dissuade the customers to prefer CBDC over fiat currency. However, if the government allows complete anonymity, then it will increase the money laundering and terror financing risks. Therefore, the anonymity concern is a double edge sword for RBI and to balance this problem requires further research and deliberations. The programming of CBDCs should be encrypted in such a manner that it can only be decoded when some illicit transaction is detected.[63]

VIII. THE PRACTICES FOR CBDC REGULATIONS - LESSONS FROM OTHER COUNTRIES.

As of July 2022, there are 150 countries exploring the CBDC and few have started implementing it under pilot projects. The first CBDC was launched by Bahamas in the form of Bahamian Sand Dollar, in 2020. Subsequently, China, Sweden, Jamaica and other countries have also introduced the CBDC in their countries, with Jamaica's JAM-DEX being the latest one.[64] The practices and framework developed by these countries is cardinal for our country to roll out CBDC on a large scale. However, the use of technology and control on CBDC issuance differ from country to country. For instance, in China, PCOB has tested DLT during its pilot testing and decided that its capacity to manage huge transactions does not meet its

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[63] Pratima Ghosh, 'Problems and Prospects of Central Bank Digital Currency' in Dr. Debesh Bhowmik, *An approach towards Central Bank Digital Currency* (Kunal Books 2022).

[64] Marsh, Sarah 'Eastern Caribbean Blazes a Trial as First Currency Union to Lunch Central Bank Digital Cash' *(Reuters,* 1 April 2021).

requirements. Therefore, China relies on "**Hybrid Architecture**"[65] while other countries like the Bahamas and Sweden are exploring the DLT.[66]

Though Sweden is in favour of paying interest on CBDC that will be less than the bank interest for maintaining the monetary policy, China,[67] Bahamas ECCU and India[68] are against it. Currently, the Bahamas is the only country that prioritises reducing the use of money for illegal activities as a main goal for its CBDC.[69] This objective is linked to the country's efforts to strengthen its AML/CFT framework, which faced scrutiny in 2018 when it was placed on the FATF grey list due to strategic deficiencies. Following this, the Bahamian government implemented an action plan to address the deficiencies, leading to its removal from the list in December 2020.[70] On March 2nd 2023, Bank of England and HM Treasury, launched a new consultation paper which proposes the introduction of *'digital pound'* for everyday payments.[71] The Swedish Riksbank has released a report on CBDC, which highlights that the elderly and groups with certain disabilities will be adversely affected in a cashless society and is exploring the use of CBDC in facilitating digital payments especially suitable for these groups as a

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[65] Working Group on E-CNY Research and Development of the People's Bank of China, 'Progress of Research & Development of E-CNY in China' (2021).

[66] Raphael Auer (n 30) 5-10.

[67] Ma, Winston, 'China's Cryptocurrency Regulations will Proper Similar Regulations Globally' (2021) 1 International Financial Law Review.

[68] FB Beauro, 'CBDCs will not bear any interest: RBI DG T Ravi Sankar' (Financial Express, 8 April 2022) <. https://www.financialexpress.com/digital-currency/cbdcs-will-not-bear-any-interest-rbi-dg/2485365/> Accessed 29 March 2023.

[69] The Central Bank of the Bahamas, 'Consultation Paper: Proposed Legislation for the Regulation of the provision and use of Central Bank issued Electronic Bahamian Dollars' (The Central Bank of Bahamas, 2021) <https://www.centralbankbahamas.com/viewPDF/documents/2021-02-15-11-24-12-Central-Bank-Electronic-Bahamian-Dollars-Regulations-2021.pdf> Accessed 29 March 2023.

[70] Ibid.

[71] Steve Browning and Jamie Evans , 'Central Bank Digital Currency: The Digital Pound' (House of Commons Library, 8 March 2023).< https://researchbriefings.files.parliament.uk/documents/CBP-9191/CBP-9191.pdf> accessed 29 March 2023.

complement to cash.[72] Similarly, India is a country with more than one billion population, where most of the population lives in rural area and they are not familiar with digital transaction system and still rely on cash. Government has to ensure that these people should not be left stranded. The countries with a highly digitalized payment sector are concerned about disruption of digital services and concentration risks like China where there are only two firms which dominate the market.[73] The PBOC has expressed concern that the failure of such firms could have serious consequences.[74] Currently, there are many online payment service providers in India such as Gpay, PhonePe, PayTM etc, and CBDC may pose the risk to make their business unprofitable because it will directly compete with existing service providers.[75] Banks provide credit facilities to various institutions for their project, CBDC may impact the bank profitability because people may not deposit their money in banks directly.[76] This may cause interest rate hike and make practically impossible for banks to function. Thus, credit facility for developmental projects will be very costly and this may impact the monetary policy of RBI.[77]

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[72] Country Report, 'Sweden: Financial Sector Assessment Program-Technical Note on Central Bank Digital Currency' (IMF, 5 April 2023)< https://www.imf.org/en/Publications/CR/Issues/2023/04/05/Sweden-Financial-Sector-Assessment-ProgramTechnical-Note-on-Central-Bank-Digital-Currency-531866>Accessed 15 March 2023.

[73] Krishna Srinivasan, 'Opening Remark at Peer Learning Series on Digital Money/Technology: Central Bank Digital Currency and the Case of China' (IMF, 7 July 2022) < https://www.imf.org/en/News/Articles/2022/07/07/sp070722-central-bank-digital-currency-and-the-case-of-china>Accessed on 29 March 2023.

[74] Ross P Buckley and Heng Wang, 'China's Central Bank Digital Currency Will Transform the International Monetary and Financial Systems' (University of Oxford, 18 November 2022) < https://blogs.law.ox.ac.uk/blog-post/2022/11/chinas-central-bank-digital-currency-will-transform-international-monetary-andFinacial System> Accessed 29 March 2023.

[75] Press Information Bureau (n39).

[76] Ibid.

[77] Editor, 'Impact of CBDC on the Financial System and Economy of India' (Economic Times, 26 October 2023)< https://economictimes.indiatimes.com/markets/cryptocurrency/impact-of-cbdc-on-the-financial-system-and-economy-of-india/articleshow/95095731.cms?from=mdr>Accessed 29 March 2023.

Therefore, India has to take note of the concerns raised by the other countries. The offline operability of CBDC will be helpful for the area like northeast where there is not much digital penetration and people are living in area where it is not commercially viable for banks to carry their business. Therefore, CBDC will increase the digital inclusion. In addition to this, government is also planning to linked it with direct cash transfer scheme like PM-KISAN, PMFBY and Mahatma Gandhi National Rural Employment Guarantee Act ("**MANREGA**").[78] The examples thereby provide hope for digital currency. Still, it is to be noted that, unlike the UK, India still has a high preference for cash, as the cash in circulation to GDP percentage in India is 12%, on the contrary, it is 3.4% in the UK, it is because of India has huge population, less digital inclusion, illiteracy and elderly population.[79] Therefore, the merits of having an e-rupee should be propagated amongst the masses as it will serve as one of the means to stay afoot with technology that grants greater security.

IX. CONCLUSION AND RECOMMENDATIONS FOR THE RBI

We are at the outset of the fourth industrial revolution, which has given impetus to technology in such a manner that it extends to blur the lines between digital, physical and biological spheres. Similarly, the concept of money has also evolved, as we have moved from exchange of goods in barter systems, to purchasing of goods and even services via currencies. Therefore, CBDCs serve as a prime example of a desired mode of currency in the fourth industrial revolution. The adoption of CBDC in India will bolster the conduct of digital transactions and its management, as it will eliminate the peril of volatility of cryptocurrency. Although the scalability of the e-rupee

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[78] Ibid

[79] Kunal Verma and Aashika Jain, 'What is Digital Rupee? How Is It Different From Cryptocurrency?' (Forbes, 24 March 2023)< https://www.forbes.com/advisor/in/investing/digital-rupee/> Accessed 29 March 2023.

might be marred by the concerns of cyber threats, huge number of transactions, hacking and the unanswered issue of anonymity of transaction data, yet with the robust and secured infrastructure, it cannot be scarred by these concerns. The debates, deliberations and discussions have to be held, amongst the stakeholders and the governments to address these concerns along with the setting up of a dispute resolution mechanism, and balance of anonymity. The RBI should regulate the operations of CBDCs in such a manner, that it would not disrupt the usage of existing payment service providers and banks credit facilities, in brief there has to be a healthy competition between CBDCs and the other digital payment alternatives. Since India has varied topography, CBDCs should have scalability, and its operations should be backed by a central ledger, as with the current scenario of varied financial crisis, the central ledger gives an assurance to the stakeholders for smooth recovery. Though CBDCs endeavours to reduce the time and intermediary risks involved in the current digital payment mechanisms like RTGS, IMPS etc, the technical regulatory bodies should strive hard to update its technology on regular intervals. This is important because, the transactions which are conventional should happen in an encrypted form, while the decrypting should only occur when there is an apprehension of any financial crime. The lessons from the foreign jurisdictions that adapted to this type of currency bear testimony to the fact that it can be a viable option in place of paper/ metallic currency. Albeit, the solutions might require significant investment in digital infrastructure and increment in expenditure on RBI's balance sheet, with time this mechanism will blossom at a larger pace with a cheaper rate.

VI. INDIA'S NEW FRAMEWORK ON SOVEREIGN GREEN BONDS: A HIT-AND-MISS?

- Akshata Modi*

ABSTRACT

The Indian Government recently released a set framework for the issuance and management of sovereign green bonds in order to encourage sustainable finance and environmental protection within the country. These guidelines provide a mechanism for the government to issue green bonds, and are expected to increase investment in environmentally-friendly infrastructure while attempting to offer to investors a trustworthy option for investing in eco-friendly projects. While the framework has the potential to promote investment in environmentally responsible projects and improve transparency in green financing, there are also several loopholes that may impede the success of the system. this article argues that there are loopholes in this framework which may impede its functioning and development of investor trust into the system. the author highlights these loopholes and assesses the potential of these bonds in India, by analysing (a) the shortcomings in the proposed mechanism, (b) the major misses of the framework, which discusses some of the specific areas where the framework failed to deliver, and (c) the potential which India's green bond market carries. Overall, the author has attempted to provide a practical analysis of the framework and its potential for promoting sustainable finance in India.

I. Introduction.. 114
II. Overview Of The Framework....... 115
III. Limitations Of The Proposed Structure 116
IV. Major Misses Of The Framework 117
A. Vagueness in Selection Criteria and Lack of Quantified Thresholds 118
B. Lack of Clarity Regarding the Use of Unallocated Funds..................... 118
C. Funding Expansion of CNG Infrastructure and Other Bio-Energy Projects 119
D. Poor Rating In Some Categories 120
E. Limited Potential for Off-Shore Investing 120
F. Challenging to Get a Favourable Outcome.. 122
G. Concerns of Greenwashing 123
V. Assessing the Potential of the SGBS Market in India 124
A. Performance Of SGBS In Other Economies..................................... 124
B. Current Landscape of Green Bond Issuance in India 126
C. Way Forward for the Indian Green Bonds Market................................. 127
D. IFSC: A Gateway to Tthe Global Green Bond Market........................ 131
VI. Conclusion. 133

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I. INTRODUCTION

The Government has released a framework on Sovereign Green Bonds ("**SGBs**") to promote sustainable finance and environmental protection in the country ("**Framework**").[1] SGBs are debt instruments issued by the central or state government to borrow money from investors with the assurance that the mobilised funds are being spent on eco-friendly activities.[2] The Framework outlines the procedures and guidelines for issuance of the green bonds by the Government of India. It addresses various aspects of issuance and management of the funds, ranging from the eligibility criteria for the projects to the reporting and disclosure requirements, and the role of certifying agencies. The Framework is expected to boost investment in the country's green infrastructure, while also providing a transparent and reliable investment option for investors who are interested in environmentally responsible investments.

On the face of it, the establishment of this mechanism appears to be a positive step towards a more sustainable and eco-friendly future in India and is expected to encourage private investment in sustainable projects. However, there seem to be shortfalls in the Framework which may impede its functioning and the development of investor trust in the system. Through this article, the author aims to highlight these limitations and assess the potential of the market in India.

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[1] Government of India, '*Framework of the Sovereign Green Bonds'*, Ministry of Finance, Department of Economic Affairs, Economic Division (16 February 2022) <https://dea.gov.in/sites/default/files/Framework%20of%20Sovereign%20Green%20Bonds%20%28Feb%202022%29.pdf> accessed 20 February 2023.

[2] Ministry of Finance, Government of India, '*Sovereign Gold Bond Scheme - Operational Guidelines'*, (2017) <https://www.financialexpress.com/wp-content/uploads/2015/11/Sovereign-Gold-Bond-Scheme-2015-Operational-Guidelines.pdf> accessed 1 March 2023.

II. OVERVIEW OF THE FRAMEWORK

The framework has been aligned with the International Capital Market Association ("**ICMA**") Green Bond Principles, 2021,[3] which aims to fund projects in nine categories that meet various environmental goals such as resource conservation, biodiversity conservation, climate adaptation, and mitigation. The SGBs framework is a significant step towards achieving a low-carbon and climate-resilient future. However, there is still room for improvement since some of the principles for selecting green projects in certain sectors are too vague and could increase the risk of financing projects that are not entirely green or have adverse climate-related impacts.

A notable feature of the SGBs framework is the formation of a Green Finance Working Committee (**"GFWC"**) that includes representatives from various ministries. This committee is responsible for selecting eligible green projects. Meanwhile, a Public Debt Management Cell (**"PDMC"**) will track the allocation and expenditure of the proceeds. However, the specific details of the tracking process, such as ensuring regular monitoring, transparent reporting, and disclosure of verifiable information across different departments, are yet to be determined.

[3] International Capital Market Association, 'Green Bond Principles: Voluntary Process Guidelines for Issuing Green Bonds', (2021) <https://www.icmagroup.org/green-social-and-sustainability-bonds/green-bond-principles-gbp/> accessed 1 March 2023.

III. LIMITATIONS OF THE PROPOSED STRUCTURE

While the Framework is a commendable initiative, it does not come without limitations. Some of the drawbacks found in the Framework have been identified by the author as under:

- Lack of standardization

The framework does not provide clear definitions for what qualifies as a green project, which could lead to confusion and potential misuse of funds. There is no uniform standard for what constitutes a green bond in India, thereby potentially leading to inconsistencies and a lack of trust in the market.

- No independent verification and disclosure requirements

The framework does not require independent verification of the environmental benefits of the projects funded by green bonds. This means that there is no way to ensure that the projects are effectively delivering the promised environmental benefits. Further, there is also no mandate requiring issuers to disclose information about the projects being funded, hence, making it difficult for investors to make informed decisions.

- Lack of regulatory enforcement

On the surface, it seems that there may be a lack of a proper enforcement mechanism for ensuring that the funds raised through green bonds are indeed used for environmentally friendly projects. Moreover, the framework does not provide for independent third-party audits of the project selection process, management of proceeds, and reporting on allocation and impact of the allocated proceeds.

- No penalty for non-compliance

The framework does not include penalties for non-compliance with the green bond requirements, which may reduce the effectiveness of the framework.

- The limited scope of applicability

The applicability of the framework is restricted to government-issued green bonds, and the need for having a similar structure in place for private-sector green bonds has been overlooked by the system.

The author considers these to be some of the potential shortfalls in the Framework. The government and relevant stakeholders must address these issues to make the framework more effective and successful in promoting sustainable finance and environmental protection.

IV. MAJOR MISSES OF THE FRAMEWORK

The Framework has been criticized for some major lapses. It has been scrutinized for its lack of clarity and vagueness in selection criteria, which has led to concerns about the credibility of green bond issuances in the country. Additionally, there are concerns about the use of unallocated funds and the funding expansion of CNG infrastructure and other bio-energy projects, which could have negative environmental impacts. These concerns, coupled with the uncertainty in regulation, competition from other investment options, political and economic uncertainty, and the likelihood of being rupee-dominated, have raised questions about the future of the Indian green bond market. In this context, it is crucial to explore strategies to address these issues and identify a way forward for the Indian green bond market.

A. Vagueness in selection criteria and lack of quantified thresholds

The project categories have been defined very broadly by the framework, which creates uncertainty about the type of expenditures that can be financed and the broader climate risks associated with the expenditures. The project categories of the framework lack quantified thresholds and specific climate resilience screening criteria which will be used in the selection of green projects under the framework.

Moreover, the framework's project categories lack quantified thresholds.[4] Among other misses, there is no threshold established for energy efficiency improvements, no minimum certification standard required for green buildings and it has also not been defined what an energy and emissions-efficient waste-to-energy plant would constitute.

B. Lack of clarity regarding the use of unallocated funds

The framework provides guidelines for the issuance of SGB, but it is important for the issuing authority to provide clear and transparent information about the allocation and use of funds raised through the sale of these bonds. If the information provided is unclear or incomplete, it may lead to uncertainty and reduced demand for the bonds. The structure should ideally set up a mechanism mapping out how unallocated funds will be utilized. However, there seems to be a lack of clarity regarding the use of unallocated funds and whether the funds would refinance existing projects.

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[4] Department of Economic Affairs, Ministry of Finance, Government of India, '*Second Opinion - CICERO GREEN: India'*, (2018) <https://dea.gov.in/sites/default/files/Second%20Opinion%20CICERO%20GREEN_India_Final.pdf> accessed 1 March 2023.

The government needs to provide clear and transparent information on the allocation and use of funds raised through the sale of SGB. This can help to increase the confidence of investors and support the development of the green bond market in India. Additionally, regular reporting on the use of funds and the progress of green projects can help to enhance transparency and accountability in the use of the funds raised.

C. Funding expansion of CNG infrastructure and other bio-energy projects

Compressed natural gas ("**CNG**") is a fossil fuel, which may not be considered 'green' by most. One of the major misses of the Framework is the consideration of funding the expansion of CNG infrastructure, which puts into risk the Framework's credibility. Funding the expansion of CNG infrastructure may not be the best use of green bond funds, as CNG is still a fossil fuel and does contribute to greenhouse gas emissions. There are also concerns regarding the framework supporting expenditures related to biofuels, bioenergy plants, and solid biomass with inherently wider climate risks.[5]

As per the Framework, the expenditures envisaged to be funded may also be associated with wider climate risks and impacts that the selection process does not address. The inclusion of funding for the expansion of CNG infrastructure is a policy choice made by the government and relevant stakeholders. However, SGBs should have preferably been utilised for

[5] ibid.

projects that have a greater positive impact on the environment, such as renewable energy projects

D. Poor rating in some categories

The Framework has been reviewed externally by a second-party opinion (**"SPO"**) provider, CICERO, which has categorised the Framework as 'medium green', raising several questions. As per its *'Shades of Green'* method of categorisation, CICERO assigns the classification of 'medium green' to projects and solutions which indicate a significant step towards long-term objectives but need improvement.

In its evaluation, CICERO has categorised energy efficiency, renewable energy, clean transportation, and adaptation categories as dark or medium-to-dark green. However, categories like waste management and sustainable water, pollution prevention and control, and others have received light or light to medium green, which represents transition activities that do not lock in emissions.[6] Moreover, CICERO has also brought into light several pitfalls of the Framework which highlight some of the reasoned concerns that critics of the Framework hold as well.

E. Limited potential for off-shore investing

The potential for offshore investment in SGBs may be limited. These factors identified by the author demonstrate the rationale behind the same:

- Uncertainty in regulation

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[6] ibid.

Offshore investors may be apprehensive about investing in green bonds issued by the Indian government due to uncertainty in regulations and a lack of clarity around the framework, which further diminishes the potential for offshore investment.

- Competition from other investment options

There may be more attractive investment options available for offshore investors, such as bonds issued by other governments, stocks, and other fixed-income securities. This could limit the demand for India's green bonds by offshore investors.

- Political and economic uncertainty

The political and economic instability in India may discourage offshore investors from investing in the country's green bonds. The government's ability to attract foreign investment will also be affected by this uncertainty.

- Likelihood of being rupee-dominated

It may be difficult to attract offshore investors to invest in SGBs because, in all probability, SGBs will be rupee-denominated. The Indian government has, however, taken certain measures to make it easier for offshore investors to invest in SGBs. One of the measures taken by the government is to allow foreign investors to buy SGBs through the fully automated bidding process on the National Stock Exchange of India (**"NSE"**)

and the Bombay Stock Exchange (**"BSE"**).[7] This may make it easier for foreign investors to participate in the bidding process and invest in SGBs.

These factors indicate how the potential for offshore investment in SGBs may be limited. However, it is important to note that the green bond market in India is still in its early stages of development and with time, increased awareness, and improved market conditions, offshore investment prospects may improve.

F. Challenging to get a favourable outcome

In all likelihood, SGBs would be rupee-denominated and be issued in onshore markets, which could pose a challenge in obtaining a favourable premium. This is because investors who are aligned with environmental, social, and governance (**"ESG"**) principles and are willing to pay a premium for sustainable bond instruments are primarily from developed markets. Indian investors, however, have yet to distinguish the pricing difference between a green bond and a regular rupee bond making it challenging to get a favourable premium. This is because most environmental, social and governance (**"ESG"**) aligned investors are ready to pay a premium for sustainable bond instruments from developed markets. Indian investors are yet to differentiate pricing between a green bond and the normal rupee bond.

The limited market size and the absence of a uniform standard may make it difficult for SGBs to achieve a favourable premium. Additionally, investors may have other investment options offering higher returns and greater security, which could reduce demand for green bonds, further making

[7] National Stock Exchange of India, '*Sovereign Gold Bond (SGB)*', n.d. https://www.nseindia.com/products-services/about-sgb accessed 20 February 2023.

it tough to get a favourable premium. The green bond market in India is still in its early stages of development, and with time and increased awareness, it is possible that the demand for green bonds will increase and the challenges to getting a favourable premium will reduce.

G. Concerns of greenwashing

While the government has prescribed, however vaguely, the reporting on the allocation of funds and the environmental impact of projects funded by SGBs, there is no clear guidance on how this reporting will be done, what metrics will be used, or how frequently it will be done. This lack of transparency could make it difficult for investors to assess whether the projects funded by SGBs are truly green and raises concerns about greenwashing.[8] Moreover, there is a risk that SGBs could be used to finance projects that are only marginally green or those which do not have a significant impact on the environment. While the framework requires that projects funded by SGBs have a positive environmental impact, it is not clear how this impact will be measured or verified. This could potentially allow for projects which have only a small environmental impact to be classified as green projects, leading to accusations of greenwashing.

The concerns about greenwashing greatly impact the credibility of India's SGB market. Greenwashing could potentially undermine investor confidence in the SGB market and make it more difficult for governments to raise funds through SGBs in the future. This could have negative

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[8] Centre for Financial Accountability, '*Greenwashing in the Indian Finance* Sector' (report, Centre for Financial Accountability, 2021) <https://www.cenfa.org/publications/reports-and-briefings/greenwashing-in-the-indian-finance-sector/> accessed 18 April 2023.

consequences for the environment if it reduces the availability of funding for genuine green projects.

V. ASSESSING THE POTENTIAL OF THE SGBS MARKET IN INDIA

Apart from helping a country to finance its commitments made under the Paris Agreement, SGBs also serve as market indicators of a nation's dedication towards transitioning to sustainable energy.[9] Sovereign guarantees offer investors protection from the credit risk or possibility of default by the issuer and offer greater transparency when compared to private issuances that are similar in nature. If a government issues an SGB, especially when it is the first one, the overall standard of green issuance across the nation improves, as per the Bank for International Settlements.[10]

A. Performance of SGBs in Other Economies

Sovereign green bonds have been issued by several countries around the world to finance climate and environmental-friendly projects. In 2016, Poland became the first country to issue a sovereign green bond raising € 750 million to finance renewable energy projects. Their market has grown fast, with 11 issuers raising a total of USD 78 billion in 2021 alone.[11] France too

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[9] Shailaja Rathi, '*Sovereign Green Bonds: A Path to Financing the Energy Transition and Addressing Climate Change*', (2021) 12 Journal of Energy and Natural Resources Law 431, 432.

[10] Bank for International Settlements, '*The Green Bond Market: Developments in 2020*', BIS Quarterly Review (March 2021) 25, 26 <https://www.bis.org/publ/qtrpdf/r_qt2103e.htm> accessed 24 February 2023.

[11] Benchmark Mineral Intelligence, '*The Global Green Bond Market: An Overview'*, (3 February 2022) https://www.benchmarkminerals.com/the-global-green-bond-market-an-overview/ accessed 24 February 2023.

issued the first of its SGBs in 2017, raising € 7 billion.[12] The bond was oversubscribed, indicating a high level of investor interest. Fiji's issuance of the bond in 2017 created the first-ever issuance by a developing country, and it was oversubscribed, raising USD 50 million.[13]

While there have been some success stories, there have also been failures and challenges in the issuance and implementation of these bonds. China has issued several green bonds, but there have been concerns about the lack of transparency and verification of the projects being financed. In some cases, funds raised from green bonds have been used to finance projects that have questionable environmental benefits.[14] In Indonesia, the issuance of green sukuk (an Islamic bond) in 2018 to finance sustainable development projects, failed to attract a significant level of investor interest. Investors were hesitant to invest in the bond due to concerns about the lack of transparency and governance in Indonesia.[15]

Overall, the success of sovereign green bonds depends on several factors, including the level of investor interest, the transparency and

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[12] UNEP Inquiry, '*Sovereign Green Bonds: A Catalyst for a Sustainable Bond Marke*t', (April 2018) 16 https://unepinquiry.org/wp-content/uploads/2018/04/Sovereign-Green-Bonds-A-Catalyst-for-a-Sustainable-Bond-Market-Full-Report.pdf accessed 24 February 2023.

[13] International Finance Corporation, '*Sovereign Green Bonds and* Infrastructure', (2019) 19 https://www.ifc.org/wps/wcm/connect/4629c31b-6f47-4ce7-85fa-75e70339ab99/2019+SGIS+report_Final+MAY+2019.pdf?MOD=AJPERES&CVID=ng1woDU accessed 24 February 2023.

[14] Yi Zhang and Wei Li, '*Green Bonds in China: Characteristics, Issues and Prospects'*, (2020) 19 Journal of Cleaner Production 355 <https://www.sciencedirect.com/science/article/pii/S0959652620310785> accessed 24 February 2023.

[15] Dini Siti Anggraeni, 'Green Sukuk and Green Bond: A Comparative Analysis for Indonesia', (2021) 6(1) Journal of Islamic Monetary Economics and Finance 103 https://www.researchgate.net/publication/350753505_Green_Sukuk_and_Green_Bond_A_Comparative_Analysis_for_Indonesia accessed 24 February 2023.

verification of the projects being financed, and the alignment with international standards for green bonds.

B. Current Landscape of Green Bond Issuance in India

Yes Bank issued the country's first green bond in 2015 to finance clean energy and renewable energy projects, particularly those involving wind and solar power.[16] Since then, the market for green bonds in India has expanded to encompass a range of government agencies, businesses, state-owned banks and financial institutions, and the banking industry. In its 2017 "Brown to Green" Report, Climate Transparency compared the issuance of green bonds across the G20 nations as a percentage of each nation's total debt market.[17] India is ranked fifth among the G20 nations in their estimation.[18] This demonstrates the potential for the country to create and expand green bonds as a tool to hasten the adoption of green technologies.

The issuance of green bonds will foster India's commitment towards its Nationally Determined Contributions (**"NDC"**) targets and build credibility in the global green finance ecosystem.[19] However, to fully realize the potential of the sovereign green bonds market in India, there is a need for greater transparency and standardization in the green bond market, as well as

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[16] CSE (Centre for Science and Environment), '*Yes Bank issues India's first green infrastructure bond to finance clean energy projects*' (2015) <https://www.downtoearth.org.in/news/yes-bank-issues-india-s-first-green-infrastructure-bond-to-finance-clean-energy-projects-50491> accessed 30 March 2023.

[17] Climate Transparency, '*Brown to Green Report 2017: G20 climate performance of the world's largest economies*' (2017) <https://www.climate-transparency.org/wp-content/uploads/2017/11/Brown-to-Green-Report-2017.pdf> accessed 30 March 2023.

[18] ibid.

[19] Prateek Garg and Ritika Verma, '*Sovereign Green Bonds in India: The Way Forward*', (2021) 20(1) Journal of Sustainable Finance and Investment 37 <https://www.tandfonline.com/doi/full/10.1080/20430795.2020.1860339> accessed 24 February 2023.

increased awareness among investors about the environmental and social benefits of sustainable investments.

The Government went ahead with the first issuance of SGBs on January 25, 2023, whereby the Ministry of Finance priced INR 80 billion (USD 1 billion two-tranche deal split equally between five and ten-year tenors).[20] The deal was oversubscribed by more than four times, enabling primary market spread compression of two basis points on the 10-year tranche, and three basis points on the 5-year tranche. Both the tranches were priced inside the yield curve, thereby obtaining a *greenium*, i.e., cheaper financing costs. The five-year bond was allocated to 32 investors and the 10-year bond was allocated to 57 investors.[21] On February 9, 2023, each tranche was opened again for INR 40 billion (USD 500 million), increasing India's total green liabilities to INR 160 billion (USD 2 billion).[22] Since the bonds remained inside the yield curve in this round of funding too, the ministry achieved cheaper financing again.

C. Way forward for the Indian Green Bonds Market

According to a study conducted by the Council for Energy, Environment and Water (**"CEEW"**), India needs USD 10 trillion worth of investments to reach its "net zero by 2070" goal. Sovereign green bonds may

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[20] Climate Bonds Initiative, '*India's Debut Sovereign Green Bond Market: First Deal Landed With Greenium*', (23 February 2023) <https://www.climatebonds.net/2023/03/india%E2%80%99s-debut-sovereign-green-bond-market-first-deal-landed-greenium> accessed 5 March 2023.

[21] *Ibid*.

[22] Press Trust of India, '*India Raises Rs 40,000 Cr through Third Tranche of Sovereign Green Bond Sale*' (9 February 2023) <https://www.india.com/business/india-raises-rs-40000-cr-through-third-tranche-of-sovereign-green-bond-sale-5088251/> accessed 1 March 2023.

prove to be an effective policy tool for tackling the funding difficulties associated with the low-carbon transition and promoting green growth, the two priorities outlined in Budget FY24.[23]

While the Framework by the government provides a strong foundation for the growth of the Indian green bond market, there is still significant scope for further growth. By taking targeted actions to increase awareness, streamline issuance, develop a green projects pipeline, expand the investor base, standardize reporting, and encourage secondary market trading, the Indian green bond market can effectively contribute to India's sustainable development goals.

- Incentivizing issuers and investors of green bonds

For the same, the government should provide incentives to issuers and investors of green bonds. For issuers, this could include tax exemptions, lower borrowing costs, or other financial incentives. For investors, this could include tax credits, lower transaction costs, or other financial incentives. Such incentives would encourage issuers and investors to participate in the green bond market and would help to build momentum for the market.

- Increasing awareness and expanding the investor base

The government should also promote awareness of the benefits of green bonds among the general public. This could include public education campaigns, conferences, and workshops. Such initiatives would help to build a broader understanding of the importance of sustainable finance and

[23] Arjun Dutt and Gagan Sidhu, '*An Impetus to Green Growth*' (Financial Express, 7 July 2021) https://www.financialexpress.com/opinion/an-impetus-to-green-growth/2974538/ accessed 27 February 2023.

environmental protection, which would in turn create more demand for green bonds.

- Standardizing reporting requirement

The government should work closely with the certifying agencies to ensure the integrity and transparency of the green bond market. This could include monitoring the certification process, ensuring that the certification standards are rigorous and consistent, and ensuring that the certifying agencies are independent and free from conflicts of interest. Standardized reporting on the use of proceeds, project selection, and impact reporting should be mandated. The government should consider adopting the guidelines outlined in ICMA's Green Bond Principles and Sustainability Bond Guidelines to ensure consistency and comparability of reporting across issuers.

- Addressing greenwashing concerns through external certification and penalisation

The government should consider obtaining certification from recognized global organizations such as the Climate Bond Initiative (**"CBI"**)[24] to verify that its green bond framework and projects financed meet international standards. This will increase investor confidence and reduce the risk of greenwashing. There should also be established an ongoing monitoring and reporting system to track the performance of the projects financed by the SGBs. The system should be subject to external audit and should be designed

[24] Climate Bonds Initiative, '*Certification*', accessed April 18, 2023, <https://www.climatebonds.net/certification>.

to ensure that the projects financed are delivering the expected environmental benefits.

The Securities and Exchange Board of India (**"SEBI"**) requires companies to disclose their environmental impact and imposes penalties for misleading investors through greenwashing. Similar measures to the SGB framework ensure that SGB-funded projects are genuinely green and that investors are not misled by false claims of environmental benefits.

- Recommendations regarding external audits

The framework provides for "post-issuance external verification", however, the particulars of the same remain to be vague. Hence, a criterion should be established for the selection of external agencies and it should be mandated for them to have the necessary expertise to accurately assess the environmental impact of projects. External agencies may also be made to report their findings directly to investors and make this information publicly available, which could help to increase transparency and reduce the risk of greenwashing.

- Leveraging the potential of the International Financial Services Centre

Here, the International Financial Services Centre ("**IFSC**") has immense potential to play a significant role in the issuance and trading of green bonds. As a global financial centre, the IFSC can attract international investors and issuers to finance green projects in India. The IFSC can provide a competitive platform for green bond issuers, as it offers various tax incentives and regulatory exemptions and catalyses the process of tapping into the growing demand for green investments worldwide.

D. IFSC: A Gateway to the Global Green Bond Market

According to a report by the Climate Bonds Initiative, the global green bond market reached $257.7 billion in 2019, and it is expected to continue to grow in the coming years.[25] By leveraging the IFSC's capabilities, India can become a major player in the green bond market. The way ahead for India is to create a conducive environment for green investments. The Indian government has taken several initiatives to promote green investments, such as the National Action Plan on Climate Change and the Green Energy Corridor Project. However, more needs to be done to create a robust ecosystem for green investments. This includes strengthening the regulatory framework, creating awareness among investors, and developing innovative financial instruments to finance green projects.

- Building a favourable regulatory and tax-efficient climate for SGBs

IFSC provides a favourable regulatory environment, it has a separate regulatory regime that is designed to attract foreign investors and offer them a more business-friendly environment. The regulatory framework is designed to promote transparency, investor protection, and market integrity, which can enhance the credibility of green bonds issued through the IFSC.

Another benefit of leveraging the IFSC system is that of tax incentivisation. The IFSC provides various tax benefits such as a lower tax rate, tax holidays, and exemptions from certain taxes.[26] These incentives can

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[25] Climate Bonds Initiative, '*Green Bond Market Summary 2019*' (2020) https://www.climatebonds.net/resources/reports/green-bonds-market-summary-2019 accessed 30 March 2023.

[26] GIFT Gujarat, '*Tax Incentives*' https://www.giftgujarat.in/business/ifsc?tab=Tax%20Incentives accessed 18 April 2023.

make it more attractive for investors to invest in green bonds issued through the IFSC. Moreover, the IFSC can provide access to a wide range of investors, including institutional investors, private equity firms, and high-net-worth individuals. These investors may be more willing to invest in green projects and green bonds issued through the IFSC, as they are increasingly interested in sustainable finance.

- Creating a conducive environment for green investments

In October 2022, the International Financial Services Centres Authority ("**IFSCA**") established a committee of specialists on sustainable finance, and a few among its proposals were, new sustainable finance products, enabling derisking techniques, and sustainable green products.[27] The group was looking into methods to improve capital flows through IFSC and aid in the creation of novel financial products for the green and sustainable finance sectors. By issuing sovereign green bonds via IFSC, the market for green bonds would be increasingly validated, leading to stronger offers, bigger order books, more price leverage, and a more reputable investor base.[28]

- Setting up of Sovereign Masala Green Bonds at GIFT IFSC

In addition, to increase the investor pool for India's sustainability transition without assuming currency risk, the Ministry of Finance should take into account allowing sovereign masala bond issuances to be listed at IFSC. Using sovereign green bonds to raise money at a cheap cost can be quite successful. The greenium, or pricing advantage, that several sovereign green,

[27] SME Futures, '*Issuance of sovereign green bonds via IFSC, experts suggest*' (14 September 2021) https://smefutures.com/issuance-of-sovereign-green-bonds-via-ifsc-experts-suggest/ accessed 30 March 2023.

[28] Mayank Mishra, "*India's green bond market needs to take off to meet ambitious renewable energy targets*," The Financial Express (30 August 2021) <https://www.financialexpress.com/opinion/indias-green-bond-market-needs-to-take-off-to-meet-ambitious-renewable-energy-targets/2318119/> accessed 30 March 2023.

social, and sustainability (**"GSS"**) issuances worldwide command serves as proof of this.[29] Additionally, it may also be beneficial for the government to explore the option of issuing sovereign masala green bonds through GIFT IFSC as an alternative avenue.

By leveraging the IFSC's capabilities, India can attract international investors and issuers to finance sustainable infrastructure projects. However, creating a conducive environment for green investments requires a multi-stakeholder approach, and the government, regulators, investors, and financial institutions need to work together to achieve this goal.

VI. CONCLUSION

The SGBs mechanism set up by the Government has several limitations and shortfalls which could hinder its effectiveness. The mechanism lacks standardization, disclosure requirements, and regulatory enforcement. Critics argue that green bonds may not necessarily lead to an increase in funding for green projects, but may lead to the diversion of funds from other sources, such as regular bonds or loans.[30] Additionally, there may be challenges in measuring and verifying the environmental impact of the projects funded by green bonds, which can lead to concerns around greenwashing, or exaggeration of the environmental benefits of projects.

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[29] Satyendra Jain and Jyoti Prasad Mukhopadhyay, '*Sovereign green bond issuance: perspectives from the Indian sub-continent*' (2019) 11(2) Journal of Financial Economic Policy 271, 274.

[30] R Wesselink et al, '*Sustainability and Environmental Bonds: Conceptualisations Beyond the Green Bond Label*' (2021) 8(1) Journal of Environmental Investing 9, 14.

Ultimately, the effectiveness of SGBs in promoting sustainability and mitigating climate change will depend on how well they are implemented and whether they are accompanied by other policies and initiatives that support green finance and sustainability. To improve the effectiveness of green bond investment in India, there is a need for greater clarity, standardization, and transparency in the selection process, as well as a more robust regulatory framework that ensures compliance and accountability.

VII. UNIFIED PAYMENT INTERFACE: AN INDIAN SUCCESS STORY OF REVOLUTIONIZING THE PAYMENT INDUSTRY

- Ananya Bhat*

ABSTRACT

Governments across the globe are gearing towards real-time technology to boost economic growth and prosperity by providing consumers and businesses with cheaper and more effective payment options. The development of financial technology, the blistering rate of internet data penetration and cell phones have directly impacted the revolutionary shifts in international payments and transactions. Under the aegis of the National Payment Corporation of India, the Unified Payment Interface was launched as one of the most successful models of real-time payment systems globally. While attributing its success to the collaborative efforts of the Government, central, public-sector banks, private institutions and consumers, India is the undisputed leader in real-time payments. With its latest entry into cross-border remittances, India has progressed from domestic success to a global sensation. This paper intends to comprehensively analyze the progressive acceptance and proliferation of UPI, a form of real-time payment across India against their global counterparts. It shall also discuss the viability of a fee-per-transaction clause on UPI transactions to revitalize the assets of stressed banks and financial institutions, in light of the latest NPCI press release and the future of this ubiquitous model in India.

I. Introduction 136
II. Part A… 138
A. Evolution and Scope of Development of UPI in India 138
B. How UPI Works 140
C. The Regulatory Framework Governing UPI Transactions 143
III. Part B… 146
A. UPI as a Successful RTP Model vis-à-vis Global Competitors 146
B. Consumer Adoption of RTP Across the Globe 148
IV. Part C… 150
A. Viability of fee-per transaction in India: An analysis of the recent NPCI notification 150
V. Part D… 154
A. Conclusions and Suggestions 154

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I. INTRODUCTION

Unified Payment Interface (hereinafter referred to as **"UPI")** is a mobile-centric, real-time interbank payment system[1] which permits peer-to-peer **("P2P")** and peer-to-merchant **("P2M**") transactions.[2] Launched in 2016, UPI is a banking technology infrastructure in which all banks, financial institutions and users transact money using phone numbers, QR codes, account numbers, IFSC codes, Aadhar numbers, unique Virtual Payment Addresses **("VPA"),** or UPI IDs.[3]

The Remitter Bank, Remitter PSP, Beneficiary Bank, and Beneficiary PSP are the four participants in the UPI system. While the remitter and beneficiary PSP are the front end (which, in this instance, is a mobile application)[4] used by the remitter or beneficiary to send or receive the funds, the remitter and beneficiary banks are the accounts where the actual movement of funds occurs. Although money transfers only occur between banks in the UPI ecosystem, a bank or a non-bank can provide the front end or platform.

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[1] Rahul Gochhwal, '*Unified Payment Interface—An Advancement in Payment Systems*' [2017] American Journal of Industrial and Business Management, 7, 1174-1191 < https://www.scirp.org/pdf/AJIBM_2017102515484308.pdf > accessed 19 March 2023.

[2] '*UPI payments now available in UAE as NPCI's global arm partners Mashreq Bank*' (*Livemint* , 20 August 2021) < https://www.livemint.com/news/india/upi-payments-now-available-in-uae-as-npci-s-global-arm-partners-mashreq-bank-11629455637164.html > accessed 25 March 2023.

[3] '*The Phenomenal Success of India's Mobile Payments System*' Penser (UK), < https://www.penser.co.uk/article/the-phenomenal-success-of-indias-mobile-payments-system/#:~:text=within%20a%20single%20interface%2C%20to,success%20in%20India%20was%20interoperability. > accessed 27 March 2023.

[4] Johannes Ehrentraud, Jermy Prenio, Codruta Boar, et al, '*Fintech and payments: regulating digital payment services and e-money*' (*BIS FSI Insights on policy implementation No 33*, 2021) < https://www.bis.org/fsi/publ/insights33.pdf > accessed 23 March 2023.

The other stakeholders of this model of immediate credit with real-time confirmation are the NPCI, merchants and consumers.[5]

Recently, UPI was in the spotlight when it made a grand entry into alternative payment methods **("APM")** with cross-border remittance with the linkage of Singapore's PayNow and UPI.[6] This is Singapore's second and India's first cross-border real-time system linkage. This first-of--its-kind arrangement uses cloud technology and has seen the participation of non-banking financial institutions[7] for enabling cost-efficient cross-border transactions.[8]

Part A of the paper shall discuss the evolution and scope of development, modus operandi and the regulatory framework governing UPI transactions in India. Following this, Part B will focus on the reasons for the progressive acceptance and proliferation of UPI, a form of real-time payment **("RTP")** against their global counterparts and the global consumer adoption of RTPs. Part C shall analyse the viability of fee-per-transaction in India in light of the recent NPCI notification and its impact on UPI's ubiquitous model on the Indian turf. The last limb of this paper will deal with a summary,

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[5] '*How UPI is Driving India's Shift from Cash to Digital Payments*', *ACI Blog* < https://www.aciworldwide.com/blog/how-upi-is-driving-india-shift-from-cash-to-digital-payments > accessed 31 March 2023.

[6] '*India's UPI goes global, links with Singapore's PayNow for seamless cross-border transactions*' (*Business Insider*, 21 February 2023) < https://www.businessinsider.in/india/news/indias-upi-goes-global-links-with-singapores-paynow-for-seamless-cross-border-transactions/articleshow/98114766.cms > accessed 31 March 2023.

[7] Mayank Goyal, '*Linkage of UPI with overseas countries and its impact on cross border neo banks*' (*BFSI*, 31 March 2023) < https://bfsi.economictimes.indiatimes.com/blog/linkage-of-upi-with-overseas-countries-and-its-impact-on-cross-border-neo-banks/93212117 > accessed 31 March 2023.

[8] '*SBI Joins India's First Cross-Border Real-Time UPI-PayNow Payments System With Singapore*' (*Outlook India*, 22 February 2023) < https://www.outlookindia.com/business/sbi-joins-india-s-first-cross-border-real-time-upi-paynow-payments-system-with-singapore--news-264243 > accessed 21 March 2023.

conclusions and suggestions for improving fintech and consumer acceptance of RTPs.

II. PART A

A. Evolution and Scope of Development of UPI in India

The Indian banking industry has experienced tremendous growth and has been experimenting with and attempting to adapt and integrate electronic payments to improve the banking system. It has experienced development unlike anything else since the introduction of e-payments. One of the most successful models of e-payment in India is UPI, a brainchild of the National Payments Corporation of India **(“NPCI”),** which was formed in 2009 as an initiative of the Reserve Bank of India **("RBI")** and the Indian Banks Association **("IBA")**. The NPCI pioneered UPI as a public-private partnership **("PPP")** with an interoperable platform. With little to no transaction fees, the platform has been used by the fintech industry, banks, and telecoms, which have used it to deploy QR codes at point-of-sale merchant locations (POS).[9]

The RBI, in its report, recognized that non-cash transactions in India were critically low, although retailer merchants accepted card-based payments. In light of this, it published its vision statement in 2012 to uphold its renewed commitment to provide "safe, efficient, accessible, inclusive, interoperable and authorised payment and settlement systems for the country."[10] This regulatory policy aimed at greening financial institutions by fostering a cashless and paperless society. It also emphasised the usage of

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[9] Ministry of Information & Broadcasting, ‘*From Local to Global: How India’s Digital Payment Revolution is Inspiring the World*’ (*Press Information Bureau*, 19 March 2023) < https://pib.gov.in/FeaturesDeatils.aspx?NoteId=151350&ModuleId%20=%202 > accessed 29 March 2023

[10] Reserve Bank of India (2012) Payment Systems In India Vision 2012-15. Department of Payment and Settlement Systems, Reserve Bank of India.

electronic payment products and services accessible anywhere and anytime by anyone at affordable prices.[11]

The structure of the Indian economy is changing, and the use of real-time payment technologies has reduced the amount of cash in circulation **("CIC").** For the first time in 20 years, the State Bank of India (SBI) noted that the CIC declined by ₹7,600 crores during Diwali week,[12] from 88% in FY16 to 20% in FY22, and is further expected to reduce to just 11.15% in FY27![13] The report also stated that a lower level of currency in circulation is comparable to a reduction in the cash reserve ratio **("CRR")** for the banking system because it causes less deposit leakage and benefits monetary transmission.[14] A high CIC increases risks, including its storage and lack of trial transactions leading to tax evasion.[15] By gaining quick access to tax records or transaction data on e-commerce marketplaces, digital infrastructure enables individuals and small enterprises to access and use their data.

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[11] Ibid

[12] Livemint, '*A 20-year first: Why currency circulation in India dipped in Diwali week*' (India, 03 November 2022) < https://www.livemint.com/economy/a-20-year-first-why-currency-circulation-in-india-dipped-in-diwali-week-11667479479273.html > accessed 19 March 2023.

[13] Smriti Jain, '*Power of digital transactions! Currency in circulation declines in Diwali week for 1st time in 20 years*' (*Times of India* 3 November 2022) < https://timesofindia.indiatimes.com/business/india-business/power-of-digital-transactions-currency-in-circulation-declines-in-diwali-week-for-1st-time-in-20-years/articleshow/95276968.cms > accessed 19 March 2023.

[14] SBI, '*THE POWER OF DIGITAL TRANSACTIONS: CURRENCY IN CIRCULATION DECLINES IN A BUSY DIWALI WEEK FOR THE FIRST TIME IN 20 YEARS* (IN 2009, A MARGINAL DECLINE OF RS 9.5 BN BUT REFLECTING THE CRISIS!) (India, 03 November 2022) < https://sbi.co.in/documents/13958/25272736/031122-Ecowrap_20221103.pdf/cd4b1203-b560-54b5-0b24-600015b2a81c?t=1667455438553 > accessed 19 March 2023.

[15] Rahul Gochhwal, (n 1).

B. How UPI Works

A UPI transaction involves a two to four-party model consisting of two PSPs.[16] For UPI to function, a VPA connected to the customer's bank account is created. Following that, customers can utilize this VPA to send and receive money from other users.[17] The inter-bank transfer occurs over mobile devices: smartphones and otherwise, registered with the bank to transfer money between bank accounts instantly. Upon successful registration with UPI, an identity is generated, and this is used to transfer money. The RBI regulates UPI, which runs as an open-source application programming interface **("API")** on top of the Immediate Payment Service ("**IMPS"**) and Aadhar Enabled Payment System **("AEPS")**.[18] The UPI then integrates various bank accounts, smooth fund routing and merchant payments into a single mobile application.

The API on which UPI works is simple and requires a one-click two-factor authentication to ensure safe and secure payments using mobile phone devices.[19]According to the "India Digital Payments Report", the fintech firm Worldline India noted that UPI transactions accounted for over Rs. 32.5 trillion

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[16] Shehnaz Ahmed and Aryan Babele, '*Modernising the Law for Payment Services in India | Preparing for the Future of Retail Payments*' (*Vidhi Centre for Legal Policy Blog*, 4 Oct 2021) < https://vidhilegalpolicy.in/research/modernising-the-law-for-payment-services-in-india-preparing-for-the-future-of-retail-payments/ > accessed 01 April 2023.

[17] Dr.A, Shaji George et.al., '*Payments Interface (UPI): Benefits, Challenges, and Opportunities*' (2023) 2(1) PUIRJ < https://zenodo.org/record/7723154#.ZB7rmnZBzEY > accessed 25 March 2023

[18] S. Varahasimhan, '*UPI: the dawn of digital fintech nirvana*' (*The Hindu,* 04 July 2022) < https://www.thehindu.com/business/upi-the-dawn-of-digital-fintech-nirvana/article65599052.ece > accessed 25 March 2023

[19] Neelanjit Das, '*UPI Provides A Seamless And Convenient Payment Option; But How Secure Is It?*' (*Outlook India*, 23 April 2022) < https://www.outlookindia.com/business/upi-google-pay-phonepe-bhim-mobikwik-hdfc-provides-a-seamless-and-convenient-payment-option-but-how-secure-is-it--news-192752 > accessed 31 March 2023

out of the total volume of Rs. 38.32 trillion transaction digital payment transactions in the third quarter of 2022.[20]

Digital payments in India are facilitated by the India Stack, a storehouse of software and tools like API connecting databases and software.[21] These stacks integrate Aadhaar's identity and authentication capabilities with NPCI's projects for digital payments via APIs.

India Stack is the first national digital infrastructure in the world. It is a unified platform and a technical foundation comprising a collection of APIs, serving as a technological bridge between two software applications. Financial services are at the vanguard of this innovation and transformation, which has seen an exponential rise in India's embrace of digital services. Governments, corporations, start-ups, and developers can use this unique digital infrastructure to catalyze the development of the digital ecosystem.[22]

While Real Time Gross Settlement **("RTGS")** and National Electronic Funds Transfer **("NEFT")** also facilitate merchants' payments, including P2M transactions and Fund Transfer Payment Systems, they are not as popular as UPI. This is because RTGS is predominantly used for Business-to-business payments **("B2B Payments")** for large value transactions, and NEFT does not facilitate immediate credit with real-time confirmation.[23] While RTGS and

[20] Press Trust of India, '*Digital Payments Worth Rs 38.32 Trillion Carried Out In Jul-Sep 2022 Period: Worldline*' (*Outlook India*, 06 December 2022) < https://www.outlookindia.com/business/digital-payments-worth-rs-38-32-trillion-carried-out-in-jul-sep-2022-period-worldline-news-242687 > accessed 25 March 2023.

[21] '*What is the India Stack? Nandan Nilekani explains*' (*DigFin*, 28 July 2023) < https://www.digfingroup.com/what-is-india-stack/ > accessed 19 March 2023.

[22] Neelanjit Ghosh (n 20).

[23] Discussion Paper on Charges in Payment Systems, RBI (3 October 2022) < https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/DPSSDISCUSSIONPAPER5E016622B2D3444A9F294D07234059AA.PDF > accessed 30 March 2023.

NEFT are owned and operated by RBI, UPI is owned and operated by NPCI, a non-profit entity.

The UPI platform stands out in real-time payments due to its interoperability and simple design. The consumer's bank account is portable due to UPI, and they can connect them all to a single app if they have multiple bank accounts.[24] To empower every Indian with access to a variety of safe and secure economic e-payment choices, the NPCI and RBI played a role in the establishment of a regulatory sandbox, the opening of Centralized Payment Systems **("CPS")** to non-bank PSOs, authorising 'on tap' payment system and empowering feature phone-based payment service system.

Contrary to popular opinion, owning a smartphone or having internet access is not the *sine qua non* for carrying out UPI transactions in India.[25] The NPCI integrated the National Unified Unstructured Supplementary Service Data Program **("NUUP")** to enable persons with feature phones to make digital payments with a relatively simple enrolment procedure. This initiative called the UPI123Pay, has an app-based functionality with an Interactive Voice Response **("IVR")** to activate this facility on feature phones.[26] The UPI123Pay feature facilitates customer onboarding and retention, thus making

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[24] '*How UPI is Driving India's Shift from Cash to Digital Payments*', *ACI Blog* < https://www.aciworldwide.com/blog/how-upi-is-driving-india-shift-from-cash-to-digital-payments > accessed 31 March 2023.

[25] '*UPI money transfer without Internet or smartphone; know how to do it*' (*Business Today* , 06 January 2022) < https://www.businesstoday.in/industry/banks/story/upi-money-transfer-without-internet-or-smartphone-know-how-to-do-it-318068-2022-01-06?onetap=true > accessed 20 March 2023.

[26] Reserve Bank of India launches (a) UPI for Feature Phones (UPI123pay) and (b) 24x7 Helpline for Digital Payments (DigiSaathi), Press Release: 2021-2022/1830 (India, 08 March 2022) < https://www.rbi.org.in/Scripts/BS_PressReleaseDisplay.aspx?prid=53385 > accessed 20 March 2023.

UPI a customer-centric model. This model is all the more beneficial in the Indian context, where over 95 million feature phones are still in use.[27]

C. The Regulatory Framework Governing UPI Transactions

Payment and Settlement systems are a group of financial institutions that serve as an institutional backbone and facilitate the transfer of money and other assets between central banks, financial intermediaries, firms and consumers.[28] It includes the process, procedures and interbank funds transfer system which operates the payment service operator **(“PSO”**). Payment methods are typically categorized as retail or wholesale. UPI is a type of retail payment system that deals with a lot of low-value transactions for consumers' and businesses' purchases of products and services.[29]

The establishment of national payment systems is often spearheaded by the central bank of each nation. The Payment and Settlement Systems Act, 2007 **(“PSS Act”)** and the Payment and Settlement Systems Regulations, 2008 **(“PSS Regulations”)**, which came into effect on August 12, 2008, govern the payment and settlement systems in India. § 4 of the PSS Act states that a payment system cannot be started or run in India without RBI authorization.

The PSS Act gives the RBI the essential authority to regulate payment systems without considering policy objectives. It does so largely from a systemic perspective. The RBI offers guidelines, instructions, and notices to

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[27] Shanglio Sun, ‘*Share of mobile operating systems in India 2012-2022*’ (*Statista,* 08 Mar 2023) < https://www.statista.com/statistics/262157/market-share-held-by-mobile-operating-systems-in-india/ > accessed 17 April 2023.

[28] John Armour and others, ‘Payment and Settlement Systems’ *Principles of Financial Regulation* (Oxford, 2016; online edn, Oxford Academic, 20 Oct. 2016) < https://doi.org/10.1093/acprof:oso/9780198786474.003.0018 > accessed 15 April 2023.

[29] BIS, ‘*Central banks and payments in the digital era*’, (*BIS Annual Economic Report*, 2020) < https://www.bis.org/publ/arpdf/ar2020e3.pdf > accessed 12 April 2023

regulate fintech under the PSS Act.[30] In 2022, RBI made a separate fintech department handling fintech regulations, Central Bank Digital Currency ("CBDC"), internal and international co-ordinations, among others.

The RBI released guidelines on digital banking units **("DBU" Guidelines)**[31] and digital lending **("Digital Lending Guidelines")** to banks and Non-Banking Financial Institutions **("NBFCs")** as a result of the increasing adoption of digital payments in recent years, as reflected by the Digital Payments Index.[32] The DBU guidelines do not redefine banking, instead, they concentrate on how banking services are delivered using electronic devices and include online banking, mobile banking, or any other digital channels that the bank deems appropriate, provided they offer a high degree of process automation, cross-institutional service capabilities, and a differentiated business model or strategy.[33]

NPCI International Payments Limited **("NIPL"),** a wholly owned subsidiary of NPCI works on transcending domestic waters and establishing a successful cross-border APM. It has already entered into bilateral cooperation with other countries like the UK, USA, France, UAE and Singapore and recently entered into a cross-border remittances linkage with Singapore.[34] It is

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[30] Shehnaz Ahmed and Aryan Babele, '*Modernising the Law for Payment Services in India | Preparing for the Future of Retail Payments*' (*Vidhi Centre for Legal Policy Blog*, 4 Oct 2021) < https://vidhilegalpolicy.in/research/modernising-the-law-for-payment-services-in-india-preparing-for-the-future-of-retail-payments/ > accessed 01 April 2023.

[31] Vaibhav Kakkar and others, '*Fintech Laws and Regulations 2022*' (*Global Legal Insights*, 2022) < https://www.globallegalinsights.com/practice-areas/fintech-laws-and-regulations/india > accessed 17 April 2023.

[32] Neelanjit Das, '*Why Did RBI's Digital Payments Index Jump To An All-Time High In March?*' (*Outlook India*, 29 July 2022) < https://www.outlookindia.com/business/why-did-rbi-s-digital-payments-index-jump-to-an-all-time-high-in-march--news-212811 > accessed 01 April 2023.

[33] RBI, 'Guidelines for Establishment of Digital Banking Units', [3.1.] < https://www.rbi.org.in/Scripts/NotificationUser.aspx?Id=12285&Mode=0 > accessed 16 April 2023.

[34] Mayank Goyal (n 8).

guided by the RBI cross-border sales of goods and services **(“OPGSP Guidelines”)** and Online Export-Import Facilitators Guidelines **(“OIEF Guidelines”)**.[35]

There are several regulatory loopholes when it comes to UPI transactions. For instance, a third party application provider **(“TPAP”)** participates in the UPI ecosystem as a service provider of PSPs. When a client registers, PSP is responsible for authenticating the user through either its app or TPAP's app. It is expected to adhere to all PSP and NPCI regulations.[36] The PSS Act excludes TPAPs from authorization requirements because they just offer a technological interface and do not handle customer cash or offer payment, clearing, or settlement services. The role of TPAPs has changed significantly as a result of the payments sector's transformation and the advent of bank-fintech partnerships, particularly when they are interacting with customers directly.[37] Countries like Indonesia and Canada have given legal recognition to TPAPs and have assessed them with risk assessment framework.[38]

Secondly, although NBFCs can participate in both front-end and back-end services, they can operate in the UPI ecosystem only if they partner with banks.[39] When these banks collapse, TPAPs providing UPI services are directly affected. For instance, when RBI placed YesBank under moratorium, consumers of TPAPs like PhonePe witnessed transaction disruptions until it

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[35] Vaibhav Kakkar (n 32).

[36] ‘*Roles and Responsibilities of NPCI/PSP and TPAPs in Unified Payments Interface (UPI)*’, *Indusland Bank* < https://www.indusind.com/content/dam/indusind-corporate/Other/UPI-R&R-of-NPCI-PSP-TPAPs.pdf > accessed 31 March 2023.

[37] Shehnaz Ahmed, (n 31), 52.

[38] Canada RPA Act, s 29; Indonesia BI Regulations, art. 61.

[39]“RBI, ‘*Master Directions on Prepaid Payment Instruments (PPIs)*’ (August 2021) para 2.8 < https://www.rbi.org.in/Scripts/BS_ViewMasDirections.aspx?id=12156 > accessed 17 April 2023.

partnered with ICICI.[40] Although NPCI has released notifications urging TPAPs to adopt multi-bank models[41], the lack of regulatory framework makes financial technology fragile and prone to non-compliance by TPAPs, thereby affecting consumer confidence in digital payment systems.

III. PART B

A. UPI as a Successful RTP Model vis-à-vis Global Competitors

To understand the seismic adoption rate of digital payments in India, it is essential to understand the socio-political context in which UPI was launched in 2016. UPI was not the talk of the town when it was first launched. The growth and proliferation of UPI came with the advent of demonetisation and achieved its zenith with the global pandemic and the lockdown that ensued in 2020.

India removed the Rs. 500 and Rs. 1,000 notes from circulation on November 8, 2016, to stop the circulation of black money into the economy. These were the days of extended lines at ATMs, cash-strapped machines, and several fatalities due to the abrupt shock to the cash economy.[42] The situation

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[40] Shehnaz Ahmed, '*Yes Bank Collapse Exposes the Fault-Lines in India's Fintech Industry*' (*Vidhi Centre for Legal Policy*, 23 March 2020) < https://vidhilegalpolicy.in/blog/yes-bank-collapse-exposes-the-fault-lines-in-indias-fintech-industry/ > accessed 16 April 2023.

[41] '*NPCI advised UPI payment apps to have multi-bank approach in 2017*' (*Business Insider*, 9 March 2020) < https://www.businessinsider.in/business/news/npci-advised-upi-payment-apps-to-have-multi-bank-approach-in-2017/articleshow/74556160.cms > accessed 16 April 2023.

[42] Kamalika Ghosh, '*Demonetisation Catalysed Digital Payments, But Nobody Knows Its Impact On Black Money*' (*Outlook India*, 08 November 2021) < https://www.outlookindia.com/website/story/business-news-demonetisation-led-to-increased-digital-adoption-that-helped-in-dealing-with-covid-19-but-still-no-data-on-black-mon/400179 > accessed 27 March 2023.

was further exacerbated when the pandemic struck the Indian markets, first in 2020 and then in 2021.[43]

Digital payments began to gain popularity, and the UPI was a blessing in disguise during these times. Paytm was the sole significant digital wallet provider in 2016. Since then, many UPI-enabled businesses have become household brands, including PhonePe, Google Pay, Amazon Pay, and others. From hawkers to vendors, almost the entirety of the retail chain accepts payment via UPI.

The foundation of the digital payment environment in India is government regulation and policy. Together, the Indian Government and RBI have formulated schemes like the Pradhan Mantri Jan Dhan Yojana, a financial inclusion initiative introduced in 2014 and the Digital India program, a digital empowerment initiative launched in 2015 to empower digital payment initiatives. Through several initiatives, including tax exemptions, price caps on digital payments, and incentives for retail transactions, the Government has aggressively promoted digital payments over the years.[44] Currently, transactions via UPI have exceeded Rs. 800 crores in volume, with a daily transaction rate of Rs. 36 crores in January 2023 alone![45]

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[43] Pragya Agarwala et.al., '*Epidemiological Characteristics of the COVID-19 Pandemic During the First and Second Waves in Chhattisgarh, Central India: A Comparative Analysis*' [2022] 14(4) PubMed Central < https://www.ncbi.nlm.nih.gov/pmc/articles/PMC9106595/#:~:text=The%20month%20of%20February%202021,%2C%202021%2C%20lasting%2099%20days. > accessed 27 March 2023.

[44] Simmi Chaudhary, '*Digitalising payments for an Inclusive Digital India*' *MyGov blog* < https://blog.mygov.in/editorial/digitalising-payments-for-an-inclusive-digital-india/ > accessed 31 March 2023.

[45] News Service, '*Daily UPI transactions cross 36 crores: RBI Governor*' (*The New Indian Express*, 07 March 2023) < https://www.newindianexpress.com/business/2023/mar/07/daily-upi-transactions-cross-36-crores-rbi-governor-2553915.html > accessed 31 March 2023.

One of the major catalysts for greater acceptance of UPI among the Indian populace and the retail markets is its utility in making transactions of smaller denominations without any charges. The charges, even if applicable, are *de minimis*. Tax benefits and seamless experience have paved the way for UPI acceptance in the upstream market. When NPCI upgraded UPI to version 2.0, it was aimed to be more merchant-centric, with features like buy-now-pay-later and a more robust verification procedure to reduce the possibility of fraud.

UPI transactions are secured with multi-factor authentication, and users can set their own UPI PIN, adding layer of security. These transactions are settled in real time, meaning the money is transferred from one bank account to another almost instantaneously. A primary advantage of UPI is its interoperability, which enables customers to transfer money between banks using a single mobile application. This functionality has drastically streamlined the payment procedure for clients and has made UPI more accessible and user-friendly compared to other payment systems. Further, the availability of round-the-clock service, secure and reliable conditions, and an explosion of crucial consumer services that require digital transactions, such as e-commerce and taxi-hailing via apps, as well as the scaling up of these services to its widespread adoption.

B. Consumer Adoption of RTP Across the Globe

While China makes up the majority of Asia Pacific's 34.6% share, 45% of those 118 billion transactions occurred in India, the Middle East, Africa, and South Asia. With a predicted CAGR of more than 50% from 2021 to 2026, South and Central America will experience the highest growth. These regions are only beginning the transition to electronic payments. While cards have been widely used for years and are now the foundation for contactless or

mobile wallet transactions in developed markets, growth there is predicted to be slower.[46]

Noting the tremendous success of UPI, Google urged that the Federal Reserve Board, the central bank of the United States, use UPI as an example while creating FedNow, which is the real-time payment system for the United States.[47] Initially, there weren't many incentives to use alternatives to paper checks and cash as of 2020. The need for new contactless payment systems has grown as a result of the pandemic. Further, businesses can integrate payments directly into their systems, but they must do so for each bank separately. RTP integration for small to medium-sized banks is practically difficult because of more than 4,000 banks in the US. Further, a nominal fee of $0.045 is charged for every real-time transaction.[48] There must be a more straightforward and cohesive solution if RTP is to become the industry standard.[49]

India continues to dominate RTP and accounts for 46% of all global sales, followed by Brazil, China, Thailand, and South Korea. By 2027, Bahrain, which has a population of only 1.5 million, is anticipated to have the most significant rate of RTP consumer adoption, with an estimated 83.3 RTP transactions per head per month. By 2027, only four European nations—

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[46] Sam Murrant, '*Developing Nations Continue To Drive Global Real-Time Payment Volumes — and There's More To Come*' (*ACI Worldwid,* April 2022) < https://www.aciworldwide.com/wp-content/uploads/2022/04/Prime-Time-for-Real-Time-Report-2022.pdf > last accessed 22 March 2023.

[47] '*Google wants US Federal Reserve to follow India's UPI example and build* 'FedNow' (*Livemint,* 14 December 2019) < https://www.livemint.com/news/india/google-wants-us-federal-reserve-to-follow-india-s-upi-example-and-build-fednow-11576335813947.html > accessed 25 March 2023.

[48] Admin, '*Is Real-Time Payment the future of payments?*' (*Diro.io* 25 October 2021) < https://diro.io/real-time-payment/#:~:text=The%20fee%20for%20RTP%20is,the%20cost%20for%20financial%20institutions. > accessed 30 March 2023.

[49] Ibid

Netherlands, Sweden, Denmark, and Finland—are anticipated to rank among the top 10 consumers of RTP.[50]

A global lesson from India is the deeper penetration of mobile phones over banking facilities for ensuring the success of RTPs. Unlike its US and European counterparts, India's real-time payment system is not intricately linked with traditional and inflexible electronic payment structures. It is a government-backed system with financial institutions' agreement and commitment, standardizing and centralizing every component of the system. By combining consumer demand (pull factor) and governmental regulation (push factor), financial institutions across the globe shall witness a new era of digital evolution.

IV. PART C

A. Viability of fee-per transaction in India: An analysis of the recent NPCI notification

In a two-sided retail market consisting of merchants and consumers such as UPI, the PSPs take credit risk and incur costs to facilitate instantaneous payments. The costs associated with a digital payment transaction are not universally uniform and could differ based on the commercial agreement between the parties. These fees generally comprise interchange fees, other service charges, and convenience fees and are known as Merchant discount rates **("MDR").**[51] It is shared with the issuer of the payment instrument,

[50] ACI Worldwide, '*World's Major Economies Playing Catch-Up as Widespread Adoption Drives Global Real-Time Payments Growth – ACI Worldwide Report*' (*Business Wire*, 20 March 2023) < https://www.businesswire.com/news/home/20230328005314/en/World%E2%80%99s-Major-Economies-Playing-Catch-Up-as-Widespread-Adoption-Drives-Global-Real-Time-Payments-Growth-%E2%80%93-ACI-Worldwide-Report > accessed 01 April 2023.

[51] Shehnaz Ahmed (n 31), 18.

which is determined by the PSO. The MDR for UPI is zero, according to the amendment made by the Government to the PSS Act, effective January 1, 2020.[52]

Additionally, notifications for MDR cost reimbursement for particular payments were released by the RBI and the Ministry of Electronics and Information Technology. The following amendments to the Income Tax Act of 1961 and the PSS Act were made by the government in 2019 through the Finance (No. 2) Act of 2019[53]:

- §269SU Income Tax Act, 1961**(“IT Act”)** required companies to offer their customers payment options for (i) debit cards enabled by RuPay, (ii) UPI (BHIM-UPI), and (iii) UPI Quick Response Code (BHIM-UP QR Code) if their total sales, turnover, or gross revenues exceeded INR 500 million in the last fiscal year.[54]
- §10A was inserted into the PSS Act which prohibited banks and system providers from charging a payer or a beneficiary to receive money via the electronic payment methods allowed by § 269SU of the IT Act.

UPI transactions can occur either as bank account-to-account transactions or with Prepaid Payment Instruments (PPI Wallets). The NPCI, in its latest press release, announced the application of a fee that the PSP charges to the merchant, called an interchange fee of 1.1% on UPI Payments via prepaid payment instrument **("PPI")** of online merchants, large merchants

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[52] Press Trust of India, ‘*MDR waiver: RBI may pay Rs 1,800 cr to banks to fund free transactions*’ *(Business Standard*, 07 January 2023) < https://www.business-standard.com/article/economy-policy/mdr-waiver-rbi-may-pay-rs-1-800-cr-to-banks-to-fund-free-transactions-120010701314_1.html > accessed 30 March 2023.

[53] The Finance (No. 2) Act, 2019 < https://egazette.nic.in/WriteReadData/2019/209695.pdf > accessed 25 March 2023.

[54] The Income Tax Act, 1961, ss. 269SU and 271DB.

and small offline merchants carrying out transactions greater than Rs. 2000.[55] PPIs include wallets like Paytm Wallet, Amazon Pay among others and preloaded gift cards like HDFC and ICICI Gift Cards. Interchange fee is the fee charged by PSPs to the merchant to cover the cost of accepting, processing and authorising transactions.[56] On a variety of services, the interchange charge will also be payable in the range of 0.5% to 1.1%. There will be an interchange fee of 0.5% for fuel, 0.7% for telecom, utilities/post office, education, and agriculture, 0.9% for supermarkets, and 1% for mutual funds, the Government, insurance, and railroads.[57]

This fee does not apply to P2P and P2M transactions, thereby implying bringing private money transfers outside the scope of UPI.[58] This notification is set to come into force from April 1, 2023, and will be reviewed on or before September 30, 2023.[59] The implication of this circular is restricted to digital transactions over Rs. 2000 made via merchant QR codes, which are likely to be paid merchant acquirer to the wallet issuer.[60] Since the interchange fee

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[55] Amol Dethe, '*Merchant transactions using PPI on UPI over Rs 2,000 will be charged at 1.1% from April 1*' (*Economic Times,* 28 March 2023) < https://bfsi.economictimes.indiatimes.com/news/fintech/merchant-transactions-on-upi-over-rs-2000-will-be-charged-at-1-1-from-april-1/99065673?action=profile_completion&utm_source=Mailer&utm_medium=newsletter&utm_campaign=etbfsi_news_2023-03-29&dt=2023-03-29&em=YW5hbnlhYmhhdDE2MTRAbnVhbHMuYWMuaW4= > accessed 29 March 2023.

[56] Basudha Das, '*UPI payments: Which transactions will attract NPCI's 1.1% interchange fee? Check details here*' (*Business Today*, 30 March 2023) < https://www.businesstoday.in/industry/banks/story/upi-payments-which-transactions-will-attract-npcis-11-interchange-fee-check-details-here-375271-2023-03-29 > accessed 30 March 2023.

[57] Ibid

[58] Payment instrument issuers include banking/non-banking entities that issue cards and wallets. Payment acquirers are banking/non-banking entities which facilitate the acceptance of payment instruments. PSOs are deployed to facilitate P2P and P2M transactions.

[59] Koustav Das, '*1.1% fee on UPI transactions above Rs. 2,000, but who pays that?*' (*India Today*, March 29, 2023) accessed < https://www.indiatoday.in/business/story/upi-transaction-interchange-fee-rs-2000-merchants-prepaid-payment-instruments-interoperability-2352883-2023-03-29 > accessed 29 March 2023.

[60] Ibid

applies only to transactions made through PPIs, the principal target seems to be the digital wallets which store money without paying interest to the user.

With this move, the revenue for banks and PSPs, who provide the infrastructure for UPI, is said to be benefitted.[61] Since the fee is charged on the merchant side, the final brunt of paying such charges may or may not pass onto the consumers. For instance, if a PPI Payment is made using the QR Code of Google Pay, then according to the recent NPCI Notification, Google pay will receive an appropriate interchange charge from the retailer.[62] The wallet loading charges to the account holder's bank (remitter bank) is 15 basis points if more than Rs. 2000 is stored in it.[63]

The circular, which is yet to be notified, clarifies that individual transactions shall not be charged any extra fee on personal transactions. This aligns with the Government of India's policy of digitising India and recovering costs incurred by service providers through other means.[64]

The notification adheres to the guidelines issued by RBI in 2019 on the pricing of UPI Guidelines. According to these guidelines, banks and PSPs can charge a fee for UPI transactions, subject to certain conditions. The RBI, the custodian of Indian banks, stated that PSOs incur vast expenditures to ensure safe and secure payment systems which are user-friendly, safe and secure,

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[61] Ankita Chakravarti, '*Wallet payments may have a transaction fee, UPI to remain free*' (*India Today*, 29 March 2023) accessed 30 March 2023.

[62] Ronak Jain, '*Will UPI Payments now attract charges? Decoding NPCI's interchange fee on UPI transactions via prepaid payment instruments*' (*Business Insider*, 30 March 2023) < https://www.businessinsider.in/finance/news/npci-introduces-interchange-fees-on-upi-transactions-done-via-prepaid-payment-instruments/articleshow/99080455.cms > accessed 30 March 2023.

[63] Basudha Das (n 57).

[64] 'Charges on UPI transactions? What govt said explained in 10 points' (*Livemint*, 22 August 2022) < https://www.livemint.com/money/personal-finance/charges-on-upi-transactions-what-govt-said-explained-in-10-points-11661138297587.html > accessed 30 March 2023.

interoperable and receive no profits in return. Its consultation paper recommends the imposition of charges on PSOs recovered from the beneficiary.[65]

One of the essential considerations is the pricing strategy followed by banks and PSPs. If the fees charged for UPI transactions are too high, it may discourage users from using the service and result in declining transaction volume. On the other side, if the fees are too low, banks and PSPs may be unable to recover their expenses and earn a profit. Fee ceilings are crucial to restrict the financial success of banks and PSPs and ensure that users will not be charged excessive fees for UPI transactions.

V. PART D

A. Conclusions and Suggestions

Fintech is developing at a rate that was unimaginable a decade ago. In markets like India, the Government's push, an almost obstinate determination to make digital transactions the standard rather than dealing in cash, is matched by the considerable pull factor of consumer demand and adoption. The ease and dependability of commerce are now more critical than perks like monetary rewards and tax breaks.

UPI payments are instantaneous since they are started, cleared, and paid in seconds. The combination of rapid availability and finality of capital transactions, instant confirmation, and integrated information flows guarantee that payments are made within seconds. It is a system for both merchant payments and transfers of funds. The enlarged outreach of UPI is facilitated

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[65] Discussion Paper on Charges in Payment Systems, RBI (3 October 2022) < https://rbidocs.rbi.org.in/rdocs/Publications/PDFs/DPSSDISCUSSIONPAPER5E016622B2D3444A9F294D07234059AA.PDF > accessed 30 March 2023.

by its customer-centric model. Payer PSP, Payee PSP, Remitter Bank, Beneficiary Bank, NPCI, Bank Account Holders (Payer and Payee/Merchants), and Third-Party Application Providers (TPAPs) are among the different participants in UPI.[66] It uses a combination of these participants to enable the settlement of payment transactions.

While UPI transactions are effortless, efficient and secure for small-amount transactions, the same is not the case for large-scale transfers. For instance, most banks associated with UPI have an upper limit on the amount and frequency of weekly transactions.[67] Some banks have a single transaction limit but no limit on the number of transactions.[68]

Most APMs typically see success only in the native market because of low standardisation and the resulting need for a country-by-country strategy. The global aspirations of UPI stem from its advanced domestic success. This instant gratification model has displayed a 10% month-on-month growth over the past five years, and its experts in the field believe that one of the ways of its international expansion can be with remittances.[69] The linkage of Singapore's PayNow with UPI is a magnificent success for enabling cost-efficient cross-border transactions using cloud technology.

The debate on the indispensability of a fee-per-transaction via UPI and whether the end customers, the primary beneficiaries of this system, are to bear the brunt of paying interchange fees is open-ended. This question is

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[66] Ibid

[67] UPI Transaction Limit 2023: SBI, HDFC & 105 Banks (Updated List) (*Cashfree*, January 2023) < https://www.cashfree.com/blog/upi-transaction-limit/ > accessed 27 March 2023.

[68] For instance, the SBI UPI Limit on single and multiple transactions upto 10 transfers is a maximum of Rs. 100,000. However, there is no limit on per week or per month transaction. See also, ibid.

[69] Mayank Goyal (n 8).

intricately linked to the sustainable revenue model of banks, non-banking PSPs and financial startups. The RBI has always advocated that PSPs in any payment system should generate revenue to support ongoing system operations and enable investments in new technologies, systems and procedures. Additionally, since UPI is similar to IMPS regarding funds transmission systems, a tiered fee may be assessed based on the various amount bands. The ubiquitous model of UPI could be overshadowed by the application of fee-per-transaction.

Ultimately, it is for the Government to set out policies by balancing the requirements of stressed financial institutions, consumers, merchants and its Digital India initiative. India has shown the world that a single cell phone has the power to revolutionise the payment system. From cash is king to digital payments for the win, she has come a long way in fintech innovation.

VIII. ARE THE LESSONS LEARNED: REGULATORY REFORMS IN THE INDIAN NBFC SECTOR POST-GREAT INDIAN NBFC CRISIS

- Deepanshu*

ABSTRACT

The 2008 global financial crisis impacted the Indian financial system, leading to policy adjustments to ensure financial stability and reduce systemic risks. Non-banking financial companies (**"NBFCs"**) emerged as a significant source of credit in India's financial sector, but the recent Great Indian NBFC Crisis raised concerns about the effectiveness of regulatory controls and NBFC sector resilience. The Reserve Bank of India (**"RBI"**) implemented regulatory measures to restore public trust and address the crisis, including risk management principle adjustments, capital adequacy standards, and liquidity frameworks. However, uncertainty remains about the effectiveness of these measures in preventing future crises. The author aims to analyze the Great Indian NBFC Crisis, including the factors that caused it, the evolution and potential of NBFCs in India, and how to strengthen the sector post-crisis. The author will also assess if the government and regulatory authorities have learned from the crisis and evaluate the effectiveness of the measures implemented by the RBI and regulatory authorities. The study the author aims to provide valuable insights into the regulatory changes in the Indian NBFC market and the causes and difficulties faced by NBFCs in India.

I. Introduction 157
II. The Great Indian NBFC Crisis 159
III. Lessons Learned From the NBFC Crisis 163
IV. Regulatory Response to the Nonbanking Financial Company Crisis 166
V. Future of NBFC 169
VI. Conclusion 171

I. INTRODUCTION

The Non-Banking Financial Companies (**"NBFCs"**) industry has expanded considerably in recent years, aiding in the expansion and

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advancement of the Indian economy as a whole. Small and medium-sized businesses (**"MSMEs"**), micro, Small and medium-sized businesses (**"SMEs"**), and other unbanked sectors of the economy have significantly benefited from the sector's ability to provide loans. Additionally, NBFCs are essential to financing consumer, housing, vehicle, and infrastructure initiatives.[1]

As a result of meeting the credit needs of economic sectors that traditional banks are unable to serve properly, the Indian NBFC sector has grown to be a major player in the Indian financial system. Financial organizations known as NBFCs offer banking services like loans, investments, and credit lines but need a banking license. They are governed by the Reserve Bank of India (**"RBI"**) under the Reserve Bank of India Act[2], and incorporated under the Companies Act[3].

As the requirements of the industry and the larger financial system changed over time, so did the regulatory framework for NBFCs. The RBI is the main agency in charge of overseeing and governing NBFCs to ensure their stability and soundness. Over the years, the RBI has implemented a number of regulatory measures to bolster the NBFC regulatory framework, enhance sector governance standards, and better risk management procedures.

The NBFC industry has encountered a number of difficulties recently, including the liquidity crisis and asset-liability mismatches, which resulted in

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[1] Ravisha Poddar, 'What Are NBFCs And What Does It Mean To Indian Economy' (https://startup.outlookindia.com/) <https://startup.outlookindia.com/analysis/what-are-nbfcs-and-what-does-it-mean-to-indian-economy-news-7809> accessed 21 March 2023.
[2] Reserve Bank of India Act 1934, s 45(I)- s 45 (QB).
[3] Companies Act 2013, s 3.

the Great Indian NBFC Crisis in 2018–2019.[4] The crisis made it clear that regulatory changes are required to handle the sector's vulnerabilities and guarantee its stability and soundness.

As a result, this research will help in examining the NBFC crisis, and the regulatory changes made to the NBFC market after that and will also offer insightful information on what are the factors due to which the NBFC crisis has happened and what lessons are learned from that NBFC crisis.

II. THE GREAT INDIAN NBFC CRISIS

In India, the NBFCs are organizations that operate similarly to banks. They have the same authority to extend credit as banks do. They cannot, however, accept deposits from borrowers in order to make these advances.[5] Therefore, in order to finance their debts, these NBFCs borrow money from the bond market.

NBFCs handle 5% of the lending in the Indian banking sector.[6] These non-traditional banks are known as "shadow banks" because they extend credit more quickly than conventional banks do. Nevertheless, things changed dramatically in 2018, when Infrastructure Leasing and Financial Services (**"IL&FS"**) defaulted on Inter Corporate Deposits (**"ICDs"**) secured from the Small Industries Development Bank of India (**"SIDBI"**), it was clear that the company was having financial issues. The dread and panic brought on by the

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[4] ABC, 'The Great Indian NBFC Crisis' (Management Study Guide - Courses for Students, Professionals & Faculty Members.) <www.managementstudyguide.com/great-indian-nbfc-crisis.htm> accessed 21 March 2023.

[5] James Chen, 'Nonbank Financial Institutions: What They Are and How They Work' (Investopedia, 31 May 2009) <www.investopedia.com/terms/n/nbfcs.asp> accessed 16 April 2023.

[6] Krishna Kant, 'NBFCs' Share in India's Lending Pie Fell to 5-Year Low of 19.8% in H1FY23' (Business standard, 13 December 2022).

delayed payment of Commercial Papers (**"CPs"**) rocked the economy. The default was primarily caused by the Asset Liability Management (**"ALM"**) mismatch. Although ALM mismatch is common in the financial sector, it nevertheless constitutes a major threat to the company and must be handled with care. Long-term liabilities like CPs and Non-Convertible Debentures (**"NCDs"**) may be used to support loans carried out in sectors like infrastructure and housing. These investments provide more cost-effective funding and are reviving interest in some investment groupings, such as mutual funds. However, they mature in a very short amount of time—between three and six months—while NBFCs are expected to repay loans over the following twenty years. NBFCs routinely issue new sets of CPs together with additional borrowing to meet short-term obligations. They were able to "roll over" money in this way without any issues up to the point where lenders started to withdraw from the succeeding batch of CPs, which dried up liquidity. The company's assets and obligations are out of balance because it cannot make money.[7]

Here "The Great Indian NBFC Crisis" affected the NBFCs' sectors and sub-sectors like Asset Management Companies (**"AMCs"**) and Housing Finance Companies (**"HFCs"**) very negatively and made them particularly susceptible. The effects were so severe that credit disbursal amounts decreased by 17% from October to December 2018 compared to the prior year as a result. The NBFCs were collapsing and closing down at a faster pace than expected.[8]

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[7] ABC, 'NBFC Crisis | Study Into the Causes & Solutions | NBFC License India |' (NBFC Registration) <https://nbfclicenseindia.com/blog/nbfc-crisis/> accessed 22 March 2023.
[8] 'How the IL&FS crisis ravaged India's NBFC sector - A Timeline - ET BFSI' (ETBFSI.com) <https://bfsi.economictimes.indiatimes.com/news/nbfc/how-the-ilfs-crisis-ravaged-indias-nbfc-sector-a-timeline/90541212> accessed 22 March 2023.

The outlook for NBFCs was no longer positive in the market. Instead, their stock prices were plummeting. A blue-chip NBFC company, Dewan Housing Finance Corporation Ltd. (“**DHFL”**), unexpectedly experienced a 60% daily stock price decline.[9] The same thing happened with IL&FS, which is reputed to be a leader in this industry. The following are some ways that the stock’s fall contributed to the market crash:

- Asset Quality Issues: Many NBFCs are HFCs that lend to developers or homebuyers, heavily investing in the housing sector. However, the Indian housing sector has collapsed, with companies such as Amrapali, Supertech, and Unitech failing, leading to questions about NBFCs’ asset quality. This, along with increased scrutiny of assets and liabilities, is driving these companies towards insolvency.
- Timing Mismatch: Indian NBFCs have been borrowing short-term and lending long-term, resulting in an asset-liability timing mismatch. However, they were able to pay their debts when due until IL&FS mismanaged its funds, exposing its faulty business model.[10] As a result, investors were scared away, and NBFCs couldn’t issue new debt to roll over old debt, causing further problems.
- Mutual Funds: The NBFCs depended on debt mutual funds for funds, but due to their market crash, investors reduced their investments, causing a decline in the supply of funds. This has worsened the problems of the NBFCs.

[9] Rahul Oberio, ‘NBFC Bubble Burst: Stocks Fall Up to 80% From 52-Week Highs’ (The Economic Times) <https://economictimes.indiatimes.com/markets/stocks/news/nbfc-bubble-burst-stocks-fall-up-to-80-from-52-week-highs/articleshow/65946303.cms> accessed 23 March 2023.

[10] ABC, ‘NBFC Crisis | Study Into the Causes & Solutions | NBFC License India |’ (NBFC Registration) <https://nbfclicenseindia.com/blog/nbfc-crisis/> accessed 22 March 2023.

Both immediately and over time, the IL&FS crisis had a major effect on India's financial situation. Here are some of the main effects:

- Liquidity crunch: Due to the fact that numerous other NBFCs and mutual funds had invested in the company's debt documents, the default by IL&FS and its subsidiaries caused a liquidity shortage in the Indian financial market. Investor trust suffered as a result, and a large number of investors withdrew money from mutual funds and NBFCs, worsening the liquidity crisis.
- Slowdown in economic growth: India's economy grew more slowly as a result of the liquidity crisis and the uncertainty it brought about because many sectors and industries that depended on financing from NBFCs and other financial institutions had trouble acquiring capital.[11]
- Regulatory overhaul: As a result of the crisis, the RBI and other regulatory bodies overhauled the financial system's regulatory framework in order to avoid future crises. Additionally, the RBI improved NBFC oversight and surveillance.[12]
- Investor confidence: Investor trust in the Indian financial system was damaged by the crisis, and many investors became warier in making investments in NBFCs and other financial organizations. This has caused investors to switch to safer investments like government bonds,

[11] Mathew Joseph, 'Global Financial Crisis: How Was India Impacted?', Inwent-Die Conference on Global Financial Governance – Challenges and Regional Responses (Deutsches Institut für Entwicklungspolitik 2009) <www.idos-research.de/fileadmin/_migrated/content_uploads/Global_Financial_Crisis_and_Impact_on_India_Berlin030909.pdf> accessed 16 April 2023.

[12] Reserve Bank of India, Financial Stability Report (Including Trend and Progress of Banking in India 2019-20) (ACME Packs & Prints (I) Pvt. Ltd.) <www.sbfnetwork.org/wp-content/assets/policy-library/910_India_Report_on_Trend_and_Progress_of_Banking_in_India_2019-2020_RBI.PDF> accessed 16 April 2023.

which has adversely affected the financial sector's development prospects in the private sector.

- Impact on corporate governance: The disaster revealed significant flaws in IL&FS and its subsidiaries' corporate governance and risk management procedures. Companies are now under pressure to improve their governance practices to prevent similar disasters as a result of increased scrutiny of corporate governance practices across the Indian corporate sector.

III. LESSONS LEARNED FROM THE NBFC CRISIS

The IL&FS crisis, which occurred in India in August 2018, had a significant impact on the country's NBFC sector.[13] The company heavily relied on short-term debt to fund long-term infrastructure projects, resulting in an asset-liability mismatch when projects were stalled, and fresh funds did not flow in. The company suffered from mismanagement, poor governance, high leverage, and poor returns on investments. The Government of India, being a major stakeholder, intervened to prevent the company from collapsing, with LIC and SBI providing the necessary liquidity.[14] The new Board at IL&FS identified certain lessons from the NBFC crisis and acted according to that:

- Need for better regulation: The NBFC crisis in India has brought attention to the need for stringent and effective oversight of the non-

[13] Riya Regmi and Poornima Kukreti, 'The Impact of Government Intervention on the NBFC Crisis' (Social Science Research Network) <https://deliverypdf.ssrn.com/delivery.php?ID=777119081090115113125007119064077029117046025068004010066118104028006102104102113119029035055009008044005105101118121016015127106071060023014122071107069108095084028031052051113064117110026107021099066082097114102067127019010071068080075001090084020094&EXT=pdf&INDEX=TRUE>.

[14] Claudia Buch and B Gerard Dages, 'Structural changes in banking after the crisis', Committee on the Global Financial System (Bank for International Settlements).

banking financial sector. Despite the RBI's efforts to address the issue, more extensive regulation is needed to prevent regulatory loopholes.[15] The crisis has also highlighted the importance of varied funding sources, such as a thriving securitization market, in order to supply NBFCs with long-term financing. Because the upheaval caused by the crisis has had an impact on banks and mutual funds that have invested in insolvent financial enterprises, effective regulation is even more crucial.[16] In order to keep the NBFI market stable and viable, more transparency, competition, and financial literacy among investors and borrowers are also necessary.

- Importance of Risk Management: In order to handle increased lending volumes and a wider range of portfolios, NBFCs must strengthen their internal risk-management procedures, as the crisis has made abundantly evident. As a result of the crisis, it has been urged and advised that the NBFC industry operate with due diligence and regularly evaluate firm growth. Risk management is crucial for NBFCs to exist since it has an impact on their capacity to draw in funding from primary markets in the short term and list on the stock exchange. The RBI has also made attempts to tighten risk management in the NBFC sector by pooling considerable funds in the NBFC and banking sectors in order to mitigate the impact of the crisis through open market operations.[17]

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[15] Reserve Bank of India, 'Re-Designing Regulatory Framework for NBFCS' Regulating Non-Banking <www.rbi.org.in/scripts/FS_Speeches.aspx?Id=928&fn=14> accessed 16 April 2023.

[16] Agustín Carstens, 'Non-Bank Financial Sector: Systemic Regulation Needed' (Bank For International Settlements 2021) <www.bis.org/publ/qtrpdf/r_qt2112_foreword.htm> accessed 16 April 2023.

[17] K Srinivasa Rao, 'Strengthening Risk-Management Capabilities in the Financial Sector' (Ideas For India, 21 June 2021) <www.ideasforindia.in/topics/money-finance/strengthening-risk-management-capabilities-in-the-financial-sector.html> accessed 16 April 2023.

- Need for better transparency and disclosure: The NBFC crisis has highlighted how important it is to perform careful due diligence on how the NBFC sector functions and routinely monitor business growth. The necessity for mutual funds and credit rating agencies to be more open and honest when evaluating risky assets has also been brought to light by the financial crisis.[18] In an effort to mitigate the consequences of the crisis through open market activity, the RBI has increased transparency in the NBFC industry by pooling sizable quantities of money from the banking and NBFC sectors. Therefore, improving openness and transparency is essential to prevent future issues of this nature.[19]
- Need for better liquidity management: The NBFC crisis in India has improved our understanding of the need for better liquidity management in the non-banking financial sector. The crisis has brought to light how important it is to perform careful due diligence on how the NBFC industry functions and constantly track business growth. The crisis has also forced the NBFC sector realise the necessity for improved risk-management capabilities in order to handle increasing volumes of loans and more diverse portfolios.[20]
- Role of credit rating agencies: The role of credit rating agencies in the non-banking financial industry has received more attention as a result

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[18] Debashis Basu, 'How Not to Waste the NBFC Crisis' (Indian Express, 10 June 2019) <www.business-standard.com/article/opinion/how-not-to-waste-the-nbfc-crisis-119061000006_1.html> accessed 16 April 2023.

[19] FE Bauru, 'Lessons From NBFC Crisis: Securitization Market Essential for Sustainable Funding' (Financial Express, 16 October 2018) <www.financialexpress.com/money/lessons-from-nbfc-crisis-securitisation-market-essential-for-sustainable-funding/1350330/> accessed 16 April 2023.

[20] K Srinivasa Rao, 'Strengthening Risk-Management Capabilities in the Financial Sector' (Ideas For India, 21 June 2021) <www.ideasforindia.in/topics/money-finance/strengthening-risk-management-capabilities-in-the-financial-sector.html> accessed 16 April 2023.

of the NBFC crisis. The necessity for tougher regulations limiting credit rating companies' capacity to provide high ratings to risky ventures has been made clear by the financial crisis. Banks and mutual funds that had lent money to troubled finance companies saw the effects of the crisis in addition to the NBFC sector. The problem has also drawn attention to the importance of carrying out exhaustive examinations into how the NBFC industry functions and of routinely monitoring business expansion.

IV. REGULATORY RESPONSE TO THE NONBANKING FINANCIAL COMPANY CRISIS

Although the NBFC crisis has not yet been fully resolved, the RBI and the government have taken major steps to contain it, which has led to a recovery in the market.[21] The RBI's initial actions included pooling funds through Open Market Operations (**"OMO"**) in the banking and NBFC sectors to lessen the effect, carefully monitoring significant NBFCs based on size and business volume, and creating a committee to review liquidity management frameworks. Additionally, the government offered assistance by declaring a six-month partial guarantee against high-quality pool buyouts to ensure the industry had enough liquidity.[22]

In order to fund lending in the financial system, the RBI also bought government debt paper worth Rs. 3 lakh crore from the market. NBFCs sought out alternative sources like external commercial borrowings, public bond issuances, and asset sales because the cost of borrowing from risk-averse

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[21] Nupur Anand Swati Bhat, 'RBI Moves Unlikely to Ease Pain for India's Struggling Shadow Banks' (U.S., 7 August 2019) <www.reuters.com/article/us-india-nbfc-liquidity-analysis/rbi-moves-unlikely-to-ease-pain-for-indias-struggling-shadow-banks-idUSKCN1UX1N1> accessed 16 April 2023.

[22] 'NBFC Regulation' (2018) LXXIV(11) RBI Bulletin, 1.

banks remained expensive for them. Despite the fact that this improved balance sheets and refinanced obligations, the liquidity problem remained.

In order to address this, the RBI loosened some regulations and limited the amount of loans that banks could extend to NBFCs. For a few months, the maximum limit was briefly raised from 10% to 15%, injecting almost $10 billion of liquidity into cash-strapped NBFCs. They were able to roll over their debts and collect short-term cash as a result Additionally, the RBI revoked the licences of several NBFCs after finding that they were breaking rules.[23]

The government and RBI took various actions to address the situation after realizing the gravity of the challenge facing NBFCs and HFCs in the wake of the IL&FS crisis and the wider economic impact of this episode.[24] The administration took the following measures:

- the initiation of a program worth $1 trillion aimed at providing guarantees to all NBFC lending that met the program's criteria, protecting them from first loss; and
- the introduction of an alternative investment fund worth $250 billion, with a government contribution of $100 billion, to complete housing development projects that were at a standstill. This was aimed at helping financially struggling developers to complete their projects, which would benefit HFCs that had

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[23] Abhijit Bhave, 'The NBFC Crisis and the Solution' (Wealth Management Course, Certification, AAFM Reviews, Real Estate Short Course) <www.aafmindia.co.in/Blog/the-nbfc-crisis-and-the-solution> accessed 16 April 2023.

[24] Subarta Panda, 'After IL&FS Crisis, Covid-19 Makes NBFCs Struggle Despite RBI Actions' (Business News, Finance News, India News, BSE/NSE News, Stock Markets News, Sensex NIFTY, Union Budget 2023) <www.business-standard.com/article/finance/after-il-fs-crisis-covid-19-makes-nbfcs-struggle-despite-rbi-actions-120061201803_1.html> accessed 25 March 2023.

- provided home loans to individuals who were purchasing homes in those projects.[25]

The RBI made the following actions to increase the amount of bank lending to NBFCs[26]:

- The risk weights assigned by banks for financing to NBFCs were reduced and made equivalent to those assigned for other businesses;
- the single-borrower exposure limitations of NBFCs were increased from 15% to 20% of Tier I capital to allow for more expansion; and
- banks were allowed to lend to registered NBFCs (excluding microfinance institutions) for on-lending to agriculture (limited to term loans only) up to $1 million, to micro and small businesses up to $2 million, and to housing up to $2 million per borrower (previously limited to $1 million), subject to certain conditions.

In addition to these direct actions, a number of indirect ones were also made to increase NBFCs' liquidity. Among these indirect metrics[27] are:

- between October 2018 and March 2019, OMOs were executed to inject approximately 3.5 trillion worth of liquidity into the financial system;
- the maximum quantity of securities that can fulfill both the statutory liquidity ratio and the liquidity coverage ratio, or the Facility to Avail Liquidity for Liquidity Coverage Ratio (**"FALLCR"**), was increased,

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[25] Reserve Bank of India, Report on Trend and Progress of Banking in India 2018-19 (RBI 2019).

[26] Nupur Anand Swati Bhat, 'RBI Moves Unlikely to Ease Pain for India's Struggling Shadow Banks' (U.S., 7 August 2019) <www.reuters.com/article/us-india-nbfc-liquidity-analysis/rbi-moves-unlikely-to-ease-pain-for-indias-struggling-shadow-banks-idUSKCN1UX1N1> accessed 16 April 2023.

[27] Rajeswari Sengupta, Lei Lei Song and Harsh Vardhan, 'A Study of Nonbanking Financial Companies in India' (ASIAN DEVELOPMENT BANK 2021).

enabling banks to hold fewer securities in reserves and offer more loans;

- to encourage NBFCs to securitize their loan portfolios, modifications to the securitization regulations, such as reducing the minimum holding time requirement, need to be implemented; and
- transferring control over HFC regulation from the National Housing Bank (**"NHB"**) to the RBI in order to coordinate regulatory supervision among banks, NBFCs, and HFCs.

The majority of these actions aimed to make NBFCs' short-term liquidity circumstances better. The imposition of liquidity-related rules (such as those related to asset liability management, or asset-liability mismatch) on NBFCs and the transfer of regulation of HFCs from the NHB to the RBI were two additional structural, long-term measures.[28] In order to improve NBFC regulation, the RBI must implement additional long-term steps, such as a stricter supervisory regime for NBFCs and HFCs.

V. FUTURE OF NBFC

The recent incidents in the NBFC industry, along with the resulting credit squeeze, have raised several questions about the NBFC's business strategy and future prospects. What are the possible benefits of enabling these specialized financial organizations to operate despite their lack of funding, as opposed to forcing banks to serve the same areas, must be considered? Banks have a higher cost of funding because they have direct access to public funds, and it is possible that some banks will enter into sectors that were previously only served by NBFCs.[29]

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[28] ibid.
[29] ibid.

If banks are unable to serve all consumer categories, determining the best non-bank funding strategy becomes critical. And access to home savings appears to be the most sustainable form of funding in an economy with an underdeveloped and illiquid bond market.[30] In such a setting, it is critical to devise strategies to assist non-banking financial enterprises in growing, even if banks provide the majority of their funding. This suggests that the RBI, the regulator, must re-calibrate regulatory monitoring based on the lessons learned from the current crisis.

Annual inspections and regulatory actions, similar to the asset quality review conducted for commercial banks during the NPA crisis of 2015-16[31], must be conducted on systematically important NBFCs.[32] Such NBFCs should be identified, and those with significant interconnections that may be too big to fail must be regulated individually and differently. While transforming these highly interconnected NBFCs into commercial banks or reducing their network externalities may improve the stability of the financial system, they may also be more efficient than other NBFCs in diverting funds to places where banks do not lend. As a result, there must be a balance between regulation and economic efficiency.

Additionally, a framework must be developed to assist NBFCs in managing periodic liquidity shocks. Contrary to the banks, which have access to RBI repo operations, NBFCs do not have a reliable source of short-term financing.[33] Furthermore, most NBFCs do not own high-quality debt

[30] Claudia Buch and B Gerard Dages, 'Structural changes in banking after the crisis', Committee on the Global Financial System (Bank for international settlements).
[31] 'NBFC Regulation' (2018) LXXIV(11) RBI Bulletin, 1.
[32] Master Direction – Non-Banking Financial Company – Systemically Important Non-Deposit taking Company and Deposit taking Company (Reserve Bank) Directions, 2020 (RBI 2020).
[33] Financial Sector Regulation for Growth, Equity and Stability (BIS Papers, Bank for International Settlements 2019).

instruments that can be used as collateral and a coordinated effort may be required to develop an institutionalized process for supplying liquidity in order to respond to a systemic liquidity shock.

A wide set of funding sources are required for the NBFC model's long-term survival. Banks and domestic debt capital markets are now the only sources of liabilities for NBFCs. To establish a sustainable and dependable funding model, NBFCs must have access to a larger pool of debt capital, both domestically and internationally. It may be necessary to revise regulations governing NBFCs' external commercial borrowing. Asset-backed securitization, for example, might help NBFCs gain access to large pools of debt capital, such as pension funds. Additionally, alternative investment vehicles with a higher risk tolerance can be encouraged to create funds for NBFC debt securities investments.[34] The 2018 financial crisis revealed critical lessons for different financial system players, including auditors, securities market regulators, mutual funds, credit rating agencies (**"CRAs"**), and banks.[35] The IL&FS default caused widespread shock due to the high ratings assigned to defaulted instruments, highlighting the need for stronger oversight of supportive institutions such as CRAs by the Securities and Exchange Board of India (**"SEBI"**) in the future. To establish an NBFC model, all participants must have a comprehensive understanding of the risks involved. NBFCs are critical in under or unserved consumer sectors, but their unique characteristics necessitate distinct regulatory oversight than that of commercial banks.[36] The

[34] Vijaya Kittu Manda, 'Lessons from the IL&FS Financial Crisis' (GITAM University April 2019).
[35] Jaime Caruana, 'Financial reform and the role of regulators: Evolving markets, evolving risks, evolving regulation' (BIS Speech, Bank for International Settlements 2015).
[36] Subhomoy Bhattacharjee, 'IL&FS default: Did rating agencies' failure to connect dots lead to crisis?' (Business News, Finance News, India News, BSE/NSE News, Stock Markets News, Sensex NIFTY, Union Budget 2023) <www.business-

designation of NBFCs as larger, systemically significant organizations, as opposed to others, is required to focus regulatory and supervisory attention on the former and establish a balance between financial and operational flexibility and the reduction of systemic risk. The 2018 crisis may result in a system reorganization, with specialist and competent NBFCs remaining and dominating the market while stronger, more distinct NBFCs exit.

Non-banking financial institutions (**"NBFIs"**), particularly NBFCs, have a significant role to play in developing countries like India, where obtaining bank funding is a challenge for a significant proportion of the population and enterprises.[37] The emergence of NBFCs in India and the 2018 crisis provide valuable lessons for other developing nations. To avoid a recurrence of the 2018 crisis, capital sources must exercise greater caution and discrimination when funding NBFCs. Furthermore, the long-term viability of the NBFC model necessitates a diverse funding source structure, including access to a broader range of domestic and international debt capital and techniques such as asset-backed securitization.[38]

VI. CONCLUSION

The Great Indian NBFC crisis of 2018 had a significant impact on the NBFC sector in India, leading to liquidity tightening, difficulty in fresh lending, and impacting company profits. The crisis has taught several lessons to the Indian government and regulators, including the importance of governance, capital adequacy, liquidity, and continuous clean-up of the NBFC sector. Although the NBFC crisis has not yet been fully resolved, the RBI and

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standard.com/article/companies/il-fs-default-did-rating-agencies-failure-to-connect-dots-lead-to-crisis-118092800364_1.html> accessed 25 March 2023.

[37] Claudia Buch and B Gerard Dages, 'Structural changes in banking after the crisis', Committee on the Global Financial System (Bank for International Settlements).

[38] 'NBFC Regulation' (2018) LXXIV(11) RBI Bulletin, 1.

the government have taken major steps to contain it, which has led to a recovery in the market. The RBI's initial actions included pooling funds through OMO in the banking and NBFC sectors to lessen the effect, carefully monitoring significant NBFCs based on size and business volume, and creating a committee to review liquidity management frameworks. Additionally, the government offered assistance by declaring a six-month partial guarantee against high-quality pool buyouts to ensure the industry had enough liquidity. The RBI also loosened some regulations and limited the amount of loans that banks could extend to NBFCs, leading to an injection of almost $10 billion of liquidity into cash-strapped NBFCs. The government and RBI made several other direct and indirect actions to increase NBFCs' liquidity, such as reducing banks' risk weights for financing to NBFCs and expanding NBFCs' single-borrower exposure restrictions. These actions, along with several other measures, helped in containing the NBFC crisis and restoring confidence in the sector. However, continuous monitoring and clean-up of the sector are necessary to avoid similar crises in the future. The lessons learned from the NBFC crisis will help the Indian government and regulators to create a more robust financial sector, with better governance, capital adequacy, and liquidity management, thereby increasing the trust of investors in the sector.

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- DEEPANSHU