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INDIA BANKING AND FINANCE REPORT 2024

Edited by
PARTHA RAY
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NATIONAL INSTITUTE OF
BANK MANAGEMENT
(NIBM), PUNE

ACADEMIC FOUNDATION

India Banking and Finance Report 2024

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Partha Ray

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List of Abbreviations

AA	Account Aggregator
AB PMJAY	Ayushman Bharat Pradhan Mantri Jan Arogya Yojana
ACCC	Australian Competition and Consumer Commission
ACSI	American Customer Satisfaction Index
ADB	Asian Development Bank
ADF	Augmented Dickey-Fuller
AFS	Available for Sale
AI	Artificial Intelligence
AIC	Akaike Information Criterion
AI-ML	Artificial Intelligence - Machine Learning
ALM	Asset Liability Management
AMA	Advanced Management Approach
AMFI	Association of Mutual Funds in India
AMRUT	Atal Mission for Rejuvenation and Urban Transformation
ANOVA	Analysis of Variance
API	Application Programming Interface
ARDL	Autoregressive Distributed Lag
AT-I	Additional Tier I
ATM	Automated Teller Machine
ATR	Average True Range
AUM	Assets Under Management
AWB	Airway Bill
B2B	Business to Business
B2C	Business to Consumer
BaaS	Banking as a Service
BCBS	Basel Committee on Banking Supervision
BCs	Business Correspondents
BI	Business Indicator
BIS	Bank for International Settlements
BNPL	Buy Now Pay Later
BOB	Bank of Baroda
BOE	Bank of England
BOI	Bank of India
BOM	Bank of Maharashtra
BRL	Brazilian Real
BRSR	Business Responsibility and Sustainability Reporting
BSE	Bombay Stock Exchange
BVSP	Bovespa Index, Brazil
CAGR	Compound Annual Growth Rate
CAR	Capital Adequacy Ratio
CASA	Current Account and Savings Account
CB	Canara Bank
CBI	Central Bank of India
CCIL	Clearing Corporation of India Limited
CD	Certificate of Deposit
CDR	Consumer Data Rights
CDS	Credit Default Swap
CDSB	Climate Disclosure Standards Board
CFCs	Central Financial Corporations
CFP	Contingency Funding Plan
CFS	Continuous Feedback System

CGCI	Credit Guarantee Corporation of India
CGS	Credit Guarantee Scheme
CGTMSE	Credit Guarantee Trust Fund for Micro and Small Enterprises
CNY	Chinese Yuan Renminbi
CP	Commercial Paper
CPC	Central Processing Centers
CPI	Consumer Price Index
CRAR	Capital to Risk Weighted Assets Ratio
CRISIL	Credit Rating Information Services of India Limited
CRR	Cash Reserve Ratio
CSC	Common Service Centres
CSIS	Central Sector Interest Subsidy
CSR	Corporate Social Responsibility
CV	Coefficient of Variation
CWS	Centre for Water and Sanitation
DCCBs	District Central Cooperative Banks
DCSA	Digital Container Shipping Association
DFIs	Development Finance Institutions
DGFT	Directorate General of Foreign Trade
DI	Deposit Insurance
DIC	Deposit Insurance Corporation
DICGC	Deposit Insurance and Credit Guarantee Corporation
DIGITA	Digital India Trust Agency
DJI	Dow Jones Index, US
DLA	Digital Lending Apps
DLG	Default Loss Guarantee
DLT	Digital Ledger Technology
DPD	Days Past Due
DPDPA	Digital Personal Data Protection Act
DPDPB	Digital Personal Data Protection Bill
EAD	Exposure at Default
EBC	Economically Backward Class
e-BG	Electronic Bank Guarantees
EBLR	External Benchmark Based Lending Rate
ECL	Expected Credit Loss
ECM	Error Correction Model
EDPMS	Export Data Processing and Monitoring System
EIR	Effective Interest Rate
ESG	Environment, Social and Governance
ET	Economic Times
ETDA	Electronic Trade Documents Act 2023
EVE	Economic Value of Equity
F&O	Futures and Options
FAR	Fully Accessible Route
FBIL	Financial Benchmarks India Private Limited
FDIC	Federal Deposit Insurance Corporation
FI	Financial Institution
FIMMDA	Fixed Income Money Market and Derivatives Association of India
FINMA	Financial Market Supervisory Authority, Switzerland
FIP	Financial Information Provider
FIU	Financial Information User
FLDG	First Loss Default Guarantee
FOREXC	Foreign Exchange Committee
FPI	Foreign Portfolio Investments
FRA	Financial Resolution Authority
FRB	Federal Reserve Board
FRBM	Fiscal Responsibility and Budget Management
FRDI Bill	Financial Resolution and Deposit Insurance Bill
FRTB	Fundamental Review of the Trading Book
FSB	Financial Stability Board
FSP	Financial Service Provider
FSR	Financial Stability Report
FTP	Funds Transfer Pricing
FY	Financial Year
GBI-EM	Government Bond Index-Emerging Markets
GCA	Cross Carrying Amount
GDAXI	Deutscher Aktien Index, Germany
GDP	Gross Direct Premium
GDP	Gross Domestic Product
GFC	Global Financial Crisis

GFCE	Government Final Consumption Expenditure
GFCF	Gross Fixed Capital Formation
GFD	Gross Fiscal Deficit
GNPA	Gross Non-Performing Asset
GoI	Government of India
G-SIB	Global Systemically Important Bank
GVA	Gross Value Added
HFC	Housing Finance Company
HFT	Held for Trading
HQC	Hannan-Qiunn Criterion
HQLA	High Quality Liquid Assets
HSBC	Hongkong and Shanghai Banking Corporation Limited
HTM	Held to Maturity
IADI	International Association of Deposit Insurers
IB	Indian Bank
IBDIC	Indian Banks Digital Infrastructure Company
ICAAP	Internal Capital Adequacy Assessment Process
ICC	International Chamber of Commerce
IDPMS	Import Data Processing and Monitoring System
IDR	Indonesian Rupiah
IFRS	International Financial Reporting Standards
IFRS	International Financial Reporting Standards Foundation
IL&FS	Infrastructure Leasing & Financial Services
ILAAP	Internal Liquidity Adequacy Assessment Process
ILFS	Infrastructure Leasing and Financial Services Limited
ILO	International Labour Organisation
IMF	International Monetary Fund
IMOEX	MOEX Russia Index
Ind AS	Indian Accounting Standards
INR	Indian Rupee
IOB	Indian Overseas Bank
IoT	Internet of Things
IRACP	Income Recognition, Asset Classification and Provisioning
IRDAI	Insurance Regulatory and Development Authority of India
IRRBB	Interest Rate Risk in the Banking Book
ISMPC	Internal Shadow Monetary Policy Committee
ISSB	International Sustainability Standards Board
JAM	Jan Dhan Aadhaar Mobile
KRAs	Key Result Areas
kurt	Kurtosis
KYC	Know Your Customer
LAF	Liquidity Adjustment Facility
LCR	Liquidity Coverage Ratio
LGD	Loss Given Default
LIC	Life Insurance Corporation of India
LMS	Loan Management System
LOS	Loan Origination System
LSP	Loan Service Provider
MeitY	Ministry of Electronics and Information Technology
MF	Mutual Funds
MLETR	Model Law on Electronic Transferable Records
MLIs	Member Lending Institutions
MMFTP	Matched Maturity FTP
MPC	Monetary Policy Committee
MSF	Marginal Standing Facility
MSMEs	Micro, Small and Medium Enterprises
MTM	Mark to Market
MUDRA	Micro Units Development & Refinance Agency Ltd
NAV	Net Asset Value
NBER	National Bureau of Economic Research
NBFC	Non-Banking Financial Company
NBFC-ICCs	Non-Banking Finance Company (Investment and Credit Company)
NCD	Non-Convertible Debentures
NCGTC	National Credit Guarantee Trustee Company
NeSL	National E-Governance Portal

NFC	Non-Food Credit
NFRD	Non-Financial Reporting Directive
NGFS	Network for Greening the Financial System
NIM	Net Interest Margin
NPA	Non-Performing Asset
NPCI	National Payment Corporation of India
NSA	New Standardized Approach
NSEI	Nifty 50 Index, India
NSIC	National Small Industries Corporation
OBC	Other Backward Section
OCEN	Open Credit Enablement Network
OECD	Organisation for Economic Co-operation and Development
OIS	Overnight Index Swap
ONDC	Open Network for Digital Commerce
ORBIOs	Office of Reserve Bank of India Ombudsman
P2P	Peer to Peer
PACS	Primary Agricultural Credit Societies
PCA	Prompt Corrective Action
PCA	Prompt Corrective Action
PD	Primary Dealer
PD	Probability of Default
PFCE	Private Final Consumption Expenditure
PFM	Personal Finance Management
PII	Personally Identifiable Information
PM SVANidhi	PM Street Vendor's AtmaNirbhar Nidhi
PMFBY	Pradhan Mantri Fasal Bima Yojana
PMJDY	Pradhan Mantri Jan Dhan Yojana
PMS	Performance Management System
PNB	Punjab National Bank
PRB	Principles for Responsible Banking
PSB	Punjab and Sind Bank
PSBs	Public Sector Banks
PSD1	Payments Service Directive 1
PSD2	Payment Services Directive 2
PVB	Private Sector Banks
RBI	Reserve Bank of India
RBI-IOS	RBI-Integrated Ombudsman Scheme
RE	Regulated Entity
Res	Regulatory Entities
RR	Recovery Rate
RRBs	Regional Rural Banks
SBC	Schwarz Bayesian Criterion
SBI	State Bank of India
SCBs	Scheduled Commercial Banks
SDF	Standing Deposit Facility
SDL	State Development Loans
SEBI	Securities and Exchange Board of India
SFBs	Small Finance Banks
SFEMC	Singapore Foreign Exchange Market Committee
SGrB	Sovereign Green Bond
SICR	Significant Increase in Credit Risk
SIDBI	Small Industries Development Bank of India
skew	Skewness
SLR	Statutory Liquidity Ratio
SMA	Special Mention Account
SS	SSE Composite Index, China
SVB	Silicon Valley Bank
SVBFG	Silicon Valley Bank Financial Group
SWIFT	Society for Worldwide Interbank Financial Telecommunication
TAT	Turnaround Time
TCFD	Taskforce on Climate related Financial Disclosures
TFEMC	The Tokyo Foreign Exchange Market Committee
TReDS	Trade Receivables Electronic Discounting System
TREPS	Treasury Bill Repurchase
TSA	The Standardized Approach
UBI	Union Bank of India
UBS	Union Bank of Switzerland
UCOB	UCO Bank
UDAY	Ujwal DISCOM Assurance Yojana
ULB	Urban Local Bodies
UNCTAD	UN Trade and Development
UNEP	United Nations Environment Programme

UNTF	UN Global Survey on Digital and Sustainable Trade Facilitation
UPI	Unified Payments Interface
USD	US Dollar
VRF	Value Reporting Foundation
VRR	Voluntary Retention Route
WACR	Weighted Average Call Rate
WEO	World Economic Outlook
WPI	Wholesale Price Index
WTO	World Trade Organisation
ZAR	South African Rand
ZED	Zero Defect Zero Effect

Preface

After the storm came the calm. The global economy exhibited remarkable resilience in the financial year 2023-24, in the wake of global headwinds from Silicon Valley Bank collapse, to register better than expected growth and inflation numbers. However, geopolitical tensions, commodity price volatility and high levels of public debt continue to threaten growth prospects. The danger of sudden natural disasters, due to climate change, also remains a recurrent concern worldwide. Against this backdrop, the Indian economy maintained its stellar performance. GDP growth was high, bank profitability and solvency parameters were excellent, physical investment was spurred by government capital expenditure and the INR remained stable vis-à-vis hard currencies. In short, the tight money regime could not dampen global and domestic macroeconomic performance.

The third edition of the India Banking and Finance Report (IBFR) delves into these and many other issues pertinent to the Banking, Financial Services and Insurance (BFSI) sector in India and abroad. It is a compendium of articles on financial markets, risk management, information technology, HR and strategy, written by faculty members of NIBM, at times in collaboration with external experts. The report covers an exhaustive list of topics – from macro-financial perspectives during a tight money regime to HR issues in banks; from bond markets and insurance markets to FX Swap markets; from deposit insurance to regulatory penalties, ESG and operational risk; from retail lending and digital lending to MSME credit guarantees; from the impact of digitalization on trade to effect of digitalization on customer centricity and bank performance; from Expected Credit Loss implementation in NBFCs to trends in regulatory reforms in the financial sector, after the Silicon Valley Bank collapse. As before, the analysis is incisive, while the style is discursive and simple. IBFR 2024 continues to be a comprehensive and definitive source of information and discussion on the financial sector for practitioners, regulators, policymakers, and academicians.

Macroeconomy and Markets

In the first chapter, *Macro-Financial Perspectives on Indian Economy*, the authors Sanjay Basu, Tasneem Chherawala, Jiji Mathew, Kedar nath Mukherjee, and Smita Roy Trivedi observe that India is in a sweet spot, in a global economy which itself has exceeded market expectations. With rapid GDP growth, low retail inflation and spike in fixed capital formation, the fundamentals are strong. Banks have made record profits and lowered their GNPAs. Retail and MSME credit growth have been fast, despite elevated policy rates. The stock market has been buoyant and INR steady against major currencies. However, the concern is that credit growth has surged far ahead of deposit growth. This might lead to excessive credit risk on the asset side and liquidity and interest rate risk on the liability side. Furthermore, equity market exuberance could induce retail disintermediation as well.

The second chapter titled *Impact of Recent Developments on Debt Markets in India* discusses significant events in Indian bond markets. The author, Kedar nath Mukherjee, begins with growth in the money market and primary and secondary markets for SLR and non-SLR securities. He proceeds to throw light on green and municipal bond markets. This is followed by a detailed analysis of the Basel III Additional Tier-I bond market. The implications of the inclusion of government bonds in the JP Morgan Sovereign Index are explained. Changes in SEBI Valuation norms for AT-I bonds and the new RBI norms for classification and valuation of bonds are highlighted. This chapter links a host of recent regulatory initiatives with the growth of Indian debt markets.

In the third chapter *Retail Lending: Linkages, Interconnectedness, and Challenges*, Elizabeth James traces the growth of retail and personal loans. She explores the linkages of NBFCs with fintechs, the interconnectedness between NBFCs and banks and the benefits and challenges of co-lending arrangements. The chapter highlights the contribution of retail loans to economic growth and outlines strategies to meet consumer demand for such loans.

Chapter four titled *Credit Guarantee for MSMEs: Trends and Prospects* analyses the concept of credit guarantees in detail. At the outset, M. Manickaraj and Anjani Srivastava describe the MSMEs in India and the dearth of bank credit to the sector. They proceed to explain the need for Credit Guarantees, Credit Guarantee Schemes in India, and reforms in Credit Guarantee Scheme for Micro and Small Enterprises (CGTMSE). Performance of CGTMSE and National Credit Guarantee Trustee Company (NCGTC) are also discussed. In conclusion, the challenges and prospects for credit guarantee schemes are presented.

In chapter five, *Cross-border Liquidity Exposure of the Indian Forex Swap Market: Is Decoupling Feasible?*, Gargi Sanati discusses how forex swap turnover influences market liquidity and banking sector stability. The chapter explores, in terms of an econometric model, the linkage among forex swap markets in India, USA, Singapore, and Japan. It finds that the markets exhibit strong positive correlation. It also shows lagged positive impact of the US swap market on the turnover in the Indian market. The implication is that a liquidity crunch in one market may hit other markets as well. Despite exchange rate stability, the forex swap market can be a conduit for global contagion of financial sector turbulence.

Chapter six titled *Augmentation of Insurance Business in India: Role of Commercial Banks* studies the Indian insurance industry in detail. The authors, Shruti Nagar, M. Manickaraj and Tarun Agarwal, discuss the evolution and recent developments in life and non-life insurance markets. They compare the Indian insurance sector to its peers in other countries. The chapter highlights the salient features of bancassurance in terms of the distribution of life and non-life insurance segments. It outlines the prospects and challenges for bancassurance as well.

Risk Management in Financial Sector

In chapter seven, *Operational Risk: The Impact of ESG*, Richa Verma Bajaj examines the impact of climate change on operational risk. This is the first chapter on risk management issues. It introduces ESG (Environment, Social and Governance) risk and operational risk management and discusses the regulatory guidelines on integration of ESG into risk management systems. It proceeds to present the climate change risk – transition risk and physical risk related – loss event taxonomies. It also analyzes bank-level ESG data to reflect on their operational risk.

Chapter eight, *Dynamics of Expected Credit Loss Provisioning by NBFCs*, is written by Tasneem Chherawala and Dipali Krishnakumar. It examines the drivers of ECL provisioning across a sample of NBFCs over the period 2021-2023. It highlights the relevant regulatory guidelines pertaining to ECL provisioning. It elaborates on the ECL framework of Ind AS 109 and defines the formulae for measurement of ECL. It presents stylized facts and trends on ECL provisioning by NBFCs. Through an econometric model, it identifies the two important determinants – Probability of Default and Loss Given Default – of ECL provisions.

In Chapter nine, Disha Patwa, Shyam Vansing Rathod and Sanjay Basu study the *Emerging Regulatory Contours after the Collapse of Silicon Valley Bank*. At the outset, the chapter describes the journey of SVB, from boom to bust, within a few years. Against this backdrop, it argues in favour of uniform regulation of banks and FIs, regardless of portfolio size and composition. The chapter explains why it is also important to bring Interest Rate Risk in the Banking Book under Pillar I. It discusses the need for adoption of Internal Liquidity Adequacy Assessment Process (ILAAP). It also highlights the significance of Funds Transfer Pricing (FTP) and Liquidity Transfer Pricing Methods.

Chapter ten titled *Role of Deposit Insurance in Indian Banking: Current Status and the Way Ahead*, is written by Partha Ray. It explains the theoretical rationale and global trends in deposit insurance. It discusses the genesis and evolution of deposit insurance in India and its recent trends. The chapter also speculates on the shape of things to come in the resolution of bank distress and deposit insurance.

In chapter eleven, Anjan Roy studies *Monetary Penalties on Banks: Perspectives Towards Evolving a Scale-Based Approach*. The author hypothesizes that the amount of monetary penalties imposed has a positive relationship with operational risk capital of banks. The chapter discusses the regulatory enforcement actions of banks, their objectives, performance, and challenges. It describes the recent milestones in the evolution of monetary penalties by RBI. It develops an empirical model to analyze the impact of monetary penalties on operational risk capital of banks.

Technology and Digitalization in Banking

Chapter twelve, *Digital Lending in India: Opportunities and Challenges*, is written by Alka Vaidya. The emphasis is on the application of technology to credit disbursement. It discusses the different varieties of digital lending practices in India. It studies the evolution of digital lending in the country. It introduces the important players in the market, with special focus on bank participation in digital lending activities. It addresses the risks and challenges in this domain, followed by recent regulatory developments to manage such issues.

Chapter thirteen, titled *Digitalization of Trade: Challenges for Banks in India* is written by Rajesh Ramakrishnan and Smita Roy Trivedi. It highlights the progress of the digitalization process, with focus on the Indian market. It presents the multifarious challenges to digitalization, and the probable solutions. In the context of the Indian banking industry, it discusses the specific challenges to the digitalization of trade finance services. The authors also showcase a few successful use cases in the Indian context when all stakeholders collaborate for a common objective.

Chapter fourteen, *Global Emergence of Open Banking and Embedded Finance: Explorations for India*, is written by Deepankar Roy and Himadri Sikhar Pramanik. It discusses regulations and value imperatives including customer-centric growth opportunities that drive open banking and embedded finance. It presents how embracing emergent technologies and focusing on APIs is prime to achieving innovative solutions. Global explorations along these relevant issues are contextualized for India on the trends, scaled instances, and deployments. The chapter highlights opportunities for the future of open banking and embedded finance, including evaluation of benefits, challenges, and implications.

Strategy and HR

Chapter fifteen, titled *Customer Centricity, Digitalization, and Bank Performance*, is on the interface between digitalization and bank strategy. It is written by Arindam Bandyopadhyay and Kaushik Mukerjee. The chapter traces the evolution of digital ecosystems and the need for customer centricity in the Indian banking system. It explains the Integrated RBI Ombudsman Scheme, introduces the customer satisfaction perspective and derives indicators for addressing customer risks. The chapter presents bank-level empirical analysis on the linkage between customer centricity, digitalization and bank performance. It emphasizes the role of customer engagement, for sustainable business growth, supported by stable and effective digital systems.

The final chapter is titled *Addressing the Performance Binary: Continuous Feedback and New Ways of Working*. It is written by Shomi Srivastava and B. Ashok. It compares the traditional Performance Management System (PFS) with the proposed Continuous Feedback System (CFS). It conducts two empirical studies to assess the impact of CFS on performance. It concludes that, in addition to CFS, organizational support also contributes to performance improvement. The chapter recommends that a hybrid approach, which complements PMS with CFS, may be the way forward.

Acknowledgement

We are grateful to the esteemed reviewers of all the chapters of IBFR 2024 for their kind comments and suggestions. They are: Sunil Bakshi, Paritosh Basu, G. Bharankumar, Indranil Bhattacharyya, B.V. Chaubal, Subir Kr. Das, Aditya Gaiha, Jayant Keskar, Rajesh Mahajan, Indrani Manna, Jeeban Jyoti Mohanty, Deepak Narang, Parthapratim Pal, K. Srinivasa Rao, R. Shashikala and Onkar Shivraj Swami. Their detailed observations have gone a long way towards a substantial improvement in the quality of the report.

We are also indebted to all the participants of the Round Table Discussion, on the draft chapters of IBFR 2024, held at NIBM campus on Wednesday, July 3, 2024. In particular, the external experts at the round table, viz., Subrata Sarkar, Bazil Shaikh, Deepak Narang, Sitikantha Pattanaik, Rupa Rege Nitsure and Prashant Mane offered valuable advice on the chapters they discussed. The entire event was interactive, insightful, and enjoyable.

We are also thankful to the Executive Officer (Publications) at NIBM, Suchetana Ghosh Dostidar, for her meticulous effort.

Needless to say, the responsibility for any errors, which remain in the chapters, lies solely with the authors. The views expressed in the Report also reflect the opinions of the authors and are not to be ascribed to National Institute of Bank Management or its Governing Board.

The first two editions of the Indian Banking and Finance Report were well received by practitioners and industry experts. We hope that IBFR 2024 will also be appreciated. *Bon Voyage*!

OCTOBER 2024

PARTHA RAY
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I
Macroeconomy and Markets

1

Macro-Financial Perspectives on Indian Economy[1,2]

Sanjay Basu | Tasneem Chherawala | Jiji Mathew
Kedar nath Mukherjee | Smita Roy Trivedi

1.1. Introduction

Global economic activity has been robust, between FY 2022-23 and FY 2023-24, in the face of persistent inflation, protracted conflict and financial instability (IMF, 2024a). Despite the sharpest rise in policy rates across major economies, for over three decades, economic growth has stabilized earlier than expected. The onus is on policymakers and regulators now to ensure that inflation rates converge to their stated targets, in a smooth manner which does not disrupt global recovery. While the European Central Bank, Bank of England and the Fed Reserve have already slashed policy rates, others are expected to follow suit in the foreseeable future. Fiscal policy should complement such initiatives, with calibrated accumulation of public debt, so that inflationary expectations remain anchored.

The chapter is structured as follows. Section 1.2 discusses global growth and inflation outlook. Section 1.3 presents the Indian growth story. Section 1.4 traces the trajectory of inflation in India. Section 1.5 studies the impact of monetary and fiscal policies, during the inflationary phase. Section 1.6 analyzes the credit and investment portfolios of Indian banks. Section 1.7 delves into forex and equity markets. Section 1.8 concludes.

1.2. Global Growth and Inflation

The war in Ukraine disrupted global supply chains and commodity prices in FY 2021-22 and elevated inflation rates and inflationary expectations. Central banks were forced to raise policy rates to unprecedented levels. As a result, global growth was projected to plummet from 6.1% in 2021 to 3.6% in FY 2022-23 and FY 2023-24. Inflation was projected at 5.7% in developed countries and 8.7% in emerging economies in FY 2022-23 (IMF, 2022). The spike in policy rates, by 500 basis points in the US, triggered the collapse of a number of US banks (Silicon Valley Bank, Silvergate Bank and First Republic Bank) in early-March 2023. Bank equity prices crashed, CDS premiums soared, bond markets tumbled and large-scale withdrawal of deposits occurred. Within a week, the Swiss G-SIB Credit Suisse had to be taken over by UBS, with massive liquidity support from the Swiss Central Bank (see Chapter 10 in this volume for more details).

At this point, regulators faced a clear dilemma between price stability and financial stability. As a result of the market turbulence, global growth rate was expected to fall from 3.4% in FY 2022-23 to 2.5% in FY 2023-24 (IMF, 2023). However, the macroeconomic environment did not deteriorate in 2023 and global growth is expected to remain around 3.2% in 2024 and 2025. Headline inflation is expected to fall fur-

1. NIBM has an Internal Shadow Monetary Policy Committee (ISMPC) that meets faculty colleagues after each monetary policy announcement to discuss macroeconomic developments and their repercussions on the financial sector. This chapter is written by the members of the ISMPC (arranged in alphabetical order of their last names). It is an attempt to synthesize our analysis and is expected to set the tone for the chapters to follow.
2. The authors are grateful to Parthapratim Pal and Sitikantha Pattanaik for their valuable comments and suggestions. The usual disclaimer applies.

FIGURE 1.1A

Annual Growth in GDP and GVA

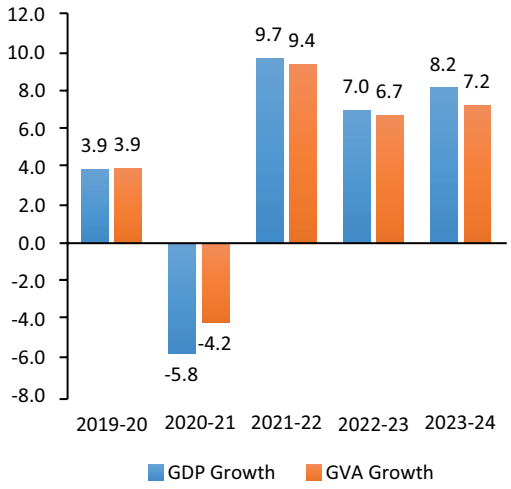
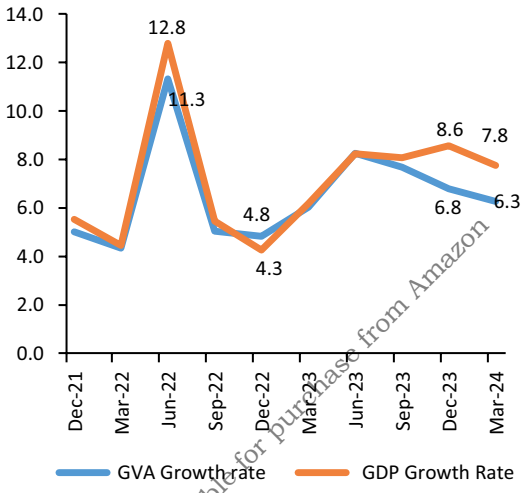


FIGURE 1.1B

Quarterly Growth in GDP and GVA



Source: CMIE Economic Outlook and National Statistical Office.

ther, from 6.8% in 2023 to 5.9% in 2024 and 4.5% in 2025 (IMF, 2024a).

Three reasons may be cited for the resilient macroeconomic performance across the world. First, the global implementation of Basel III reforms led to a sharp increase in bank capital and liquidity buffers between 2011 and 2021. Systemic risk indicators improved during both normal and stress periods, financial institutions became less interconnected and the likelihood of bank distress declined (BIS, 2022). As a result, banks and FIs may have been more immune to extreme shocks, after the Silicon Valley Bank collapse.

The second reason is expansionary fiscal policy. The stability in government expenditure (as a share of GDP) and the continuation of pandemic-era tax breaks, in most countries, softened the impact of tight money policies (IMF, 2024b, FSR, 2024). However, such policies have also worsened global accumulation of public debt – which reached 93.2% of GDP at the end of 2023 (FSR, 2024).

The third reason is the moderation in commodity prices. As supply chain constraints eased, commodity indices declined, across the entire spectrum, in 2023 and 2024. With a sharp fall in commodity price inflation, central banks did not need to raise policy rates further (GOI, 2024a).

At this stage, co-ordination between fiscal and monetary policies is crucial to ensure an acceleration of the growth rate without high inflation or irrational exuberance.

1.3. India's Growth Story

India's economic growth staged a strong and durable recovery from an unprecedented 5.8% decline during the pandemic year of 2020-21, to an impressive average growth of 8.1% in the following three years till end March 2024. This growth outperformance of India, against its global peers, was largely driven by a substantial increase in government capital expenditure which started to crowd in private investment. Meanwhile, the swift revival of the contact intensive sectors has supported the recovery of services and manufacturing sectors (GoI, 2024b).

Figures 1.1A and 1.1B capture the movements in output growth, both on the demand and supply side, especially in the midst of full economic reopening after Covid disruptions. On the aggregate demand side, India's GDP growth decelerated from 9.7% in FY 2021-22 to 7% in FY 2022-23, largely driven by a slowdown in Private Final consumption expenditure (PFCE), Government Final Consumption Expenditure (GFCE), and exports in goods and services.

FIGURE 1.2A

Trends in Headline and Core CPI Inflation

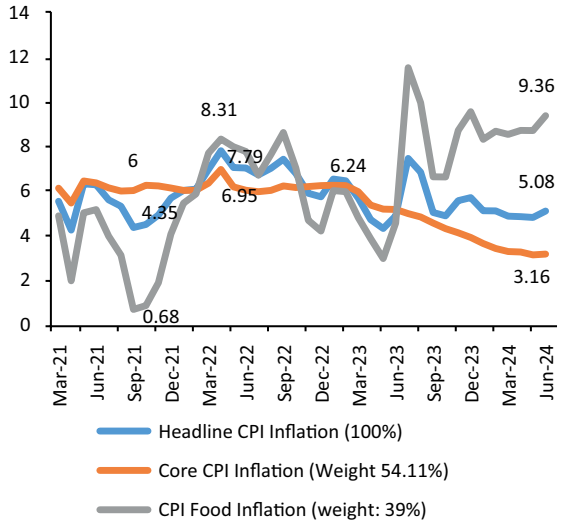
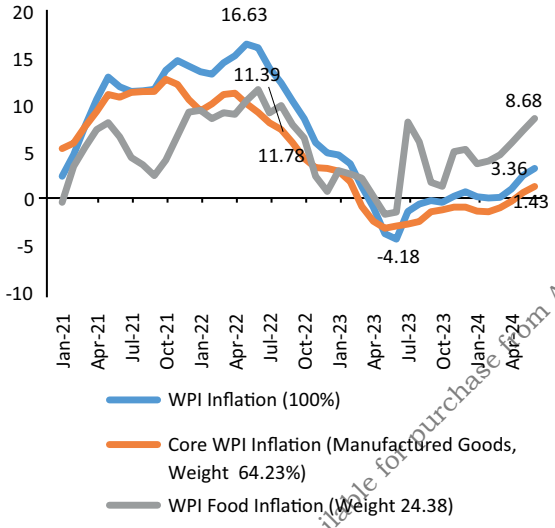


FIGURE 1.2B

Trends in Headline and Core WPI Inflation



Source: CMIE Economic Outlook.

However, GDP growth rebounded to 8.2% in FY 2023-24, aided by steady consumption demand and strong investment demand. Growth in GVA was around 7% (GOI, 2024a, 2024c).

The lagged effect of tight monetary policy, followed by an interest rate pause after a year, is reflected in quarterly national income data. The annualized quarterly GDP and GVA growth dipped from a high of 12.8% and 11.3% respectively in June quarter of FY 2022-23 to 4.3% and 4.8 % in December quarter of the same year. This was followed by an economic revival from June quarter of FY 2023-24 as both GDP and GVA growth bounced back to 8.4% and 6.5% respectively in December quarter of the same period.

Both Private Final Consumption Expenditure (PFCE) and Gross Fixed Capital Formation (GFCF) lost momentum in the high interest regime after peaking in June quarter of 2022. However, these indicators improved from the June quarter of 2023 after the policy rate pause in April. Real PFCE grew by 4% and GFCF by 19.8% in FY 2023-24 (GOI, 2024a). GDP growth is expected to slow down to 7.2% in FY 2024-25 due to a mix of factors such as lingering geopolitical tensions, recurrent food and commodity price shocks and uncertain global economic outlook (RBI, 2024b).

1.4. Inflation

Figures 1.2A and 1.2B show the recent movements in headline and core inflation for both CPI and WPI inflation. Both headline and core CPI inflation rose above the RBI's comfort zone and exhibited a rising trend since October, 2021, and peaked at 7.8% and 6.95% respectively in April 2022, before coming down to tolerable levels of 4.25% and 5.13% in May 2023. However, higher food inflation[3], dominated by rise in vegetables prices, took headline CPI inflation to a new peak of 7.4% in July 2023, before dipping to 4.83% in April 2024.

RBI's rate hike actions from May 2022 helped avoid a wage-price spiral. The second-round effects, or generalized pressures emanating from higher food inflation to core inflation, are not visible so far. This is reflected in fifteenth consecutive fall in core inflation since January 2023 to a low of 3.25% in March 2024, which is below the inflation target. Core inflation stands at 3.1% in May-June 2024 (RBI, 2024b).

WPI inflation, both headline and core components, exhibited a similar trend, but a steeper

3. In India CPI inflation stands elevated for food items such as Vegetables (27.8%), Pulses and Products (16.8%), Cereals (8.6%), Meat and Fish (8.2%), Spices (7.8%) and Egg (7.1%), which keep the headline CPI at above 4%.

disinflation, and even remained at negative levels since April 2023 till the recent past. The steep fall in inflation in India is due to the spike in policy rates as well as a sharp decline in global commodity indices. However, persistence of food inflation remains a concern. It pushed up headline inflation to 5.1% in June 2024 (RBI, 2024b).

1.5. Macroeconomic Policy Scenario

1.5.1 Monetary Policy

In response to the high and persistent CPI inflation and inflation forecasts above 6%, RBI's MPC in its April 2022 meeting began normalization of monetary policy by shifting its stance from ultra-accommodative to withdrawal of accommodation, while narrowing its Liquidity Adjustment Facility (LAF) corridor from 90bps to 50bps. In a clear shift in the monetary policy, price stability took precedence over economic growth. RBI started the process of withdrawal of liquidity in a gradual, calibrated and non-disruptive manner over a multi-year time frame beginning FY 2022-23 (RBI, 2022a and 2022b).

The change in the monetary policy stance and liquidity management was followed by a series of aggressive rate hikes by RBI for a cumulative amount of 250bps starting from May 2022, that moved up the policy repo rate from 4% to 6.5% in less than a year (RBI, 2022c, 2023a). MPC's policy tightening from April 2022 to February 2023, and the following pause in the stance and rates so far, was intended to keep inflation expectations anchored and break the core inflation persistence, while containing the second-round effects of current inflation (See RBI, 2023b, 2024a).

Transmission to Money Market and Government Securities Market

The impact of monetary policy on T-bill and Government securities (G-sec) market is depicted in Figures 1.3A and 1.3B. There is an upward shift in the T-bill curve by 300-250 bps across tenors in response to the monetary policy tightening from April 2022 till date. For instance, yields on 3-month, 6-month, and 1-year T-bills hardened by 303, 275 and 255bps respectively, since April 2022 till date. There is a slight flattening of the T-bill curve as interest rate spreads narrow for longer tenors. The monetary policy statement in April 2024 did impact the T-bill curve as the yields fell slightly due to downward revision in fourth quarter ahead inflation by MPC. In the last few months or so, these yields have been softening from the highs of October 2023 due to easing liquidity crunch, fiscal consolidation and future rate cut expectations.

FIGURE 1.3A
T-Bill Curve

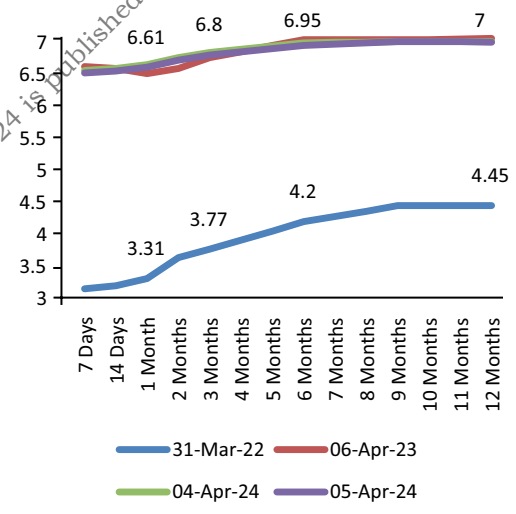
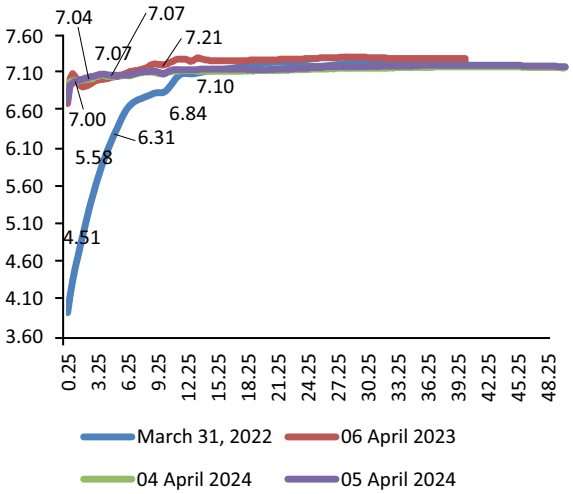


FIGURE 1.3B
Sovereign Yield Curve



Source: Financial Benchmarks India Pvt. Ltd. (FBIL).

Figure 1.3B shows that India's Sovereign Yield curve was subject to noticeably upward shift in response to monetary policy tightening since April 2022, supported by an ample withdrawal of liquidity. Sovereign yields rose by 249 bps, 196bps, 149bps, 77bps, and 24bps respectively for 1-year, 2-year, 3-year, 5-year and 10-year maturity bonds. After the policy rate pause in April 2023, which caught the market by surprise, there was a 15 to 5 bps fall in yields from 3 months to 10-year maturity. Various factors, including the rate pause adopted by MPC in February 2023, dip in liquidity deficit, lower net borrowing and fiscal deficit projected in the Union Budget and the inclusion of Indian G-secs in the JP Morgan's and Bloomberg's emerging market sovereign bond indices have contributed to the softening of bond yields.

Monetary Tightening: Asymmetric Rate Shocks

Significant flattening of the sovereign yield curve occurred over medium to long term maturities since the interest rates spreads narrowed as term to maturity rose. This phe-

TABLE 1.1

Coefficient of Correlation between Various Debt Market Rates in India

	O/N TREPS	*O/N Mkt. Repo*	*O/N Call*	*O/N MIBOR*	*Term TREPS*	*Term Mkt. Repo*	*Notice Money*	*Term Money*	*3M TB*	*3M GOI*	*3M CD*	*12M TB*	*12M CD*	*1Y GOI*	*5Y GOI*	*10Y GOI*	*1Y OIS*
O/N TREPS	1.00																
O/N Mkt. Repo	1.00	1.00															
O/N Call	0.96	0.97	1.00														
O/N MIBOR	0.96	0.97	1.00	1.00													
Term TREPS	0.95	0.98	0.98	0.98	1.00												
Term Mkt. Repo	0.90	0.92	0.91	0.91	0.93	1.00											
Notice Money	0.94	0.97	0.98	0.99	0.98	0.92	1.00										
Term Money	0.92	0.95	0.98	0.99	0.96	0.90	0.98	1.00									
3M TB	0.96	0.98	0.98	0.98	0.99	0.93	0.98	0.96	1.00								
3M GOI	0.95	0.98	0.98	0.97	0.98	0.92	0.97	0.96	1.00	1.00							
3M CD	0.94	0.96	0.98	0.98	0.98	0.92	0.98	0.97	0.99	0.99	1.00						
12M TB	0.94	0.96	0.95	0.95	0.97	0.91	0.95	0.93	0.99	0.99	0.98	1.00					
12M CD	0.92	0.94	0.96	0.96	0.96	0.91	0.95	0.95	0.98	0.99	0.98	0.99	1.00				
1Y GOI	0.94	0.96	0.95	0.95	0.97	0.91	0.95	0.93	0.99	0.99	0.98	1.00	0.99	1.00			
5Y GOI	0.85	0.87	0.85	0.85	0.88	0.83	0.85	0.83	0.91	0.93	0.90	0.96	0.95	0.95	1.00		
10Y GOI	0.80	0.81	0.79	0.79	0.83	0.77	0.79	0.77	0.85	0.88	0.85	0.91	0.91	0.91	0.98	1.00	
1Y OIS	0.83	0.83	0.79	0.79	0.81	0.77	0.78	0.75	0.86	0.87	0.84	0.91	0.87	0.89	0.91	0.88	1.00

Source: Data from RBI and FBIL; Table is Author's Creation.

nomenon can be explained by factors such as the lower long term inflationary expectations and better fiscal consolidation discounted by the market players over the longer horizon. The extent of flattening of the sovereign yield curve significantly insulates the Indian banking system from the market risk concerns and the related financial instability associated with its large investment portfolio.

The high correlation between short-term rates between 2022 and 2024, as given in Table 1.1, depicts the stronger impact of repo rate shocks on short-term instruments. On the other hand, poorer correlation (less than 90%) between the 1-year OIS rate and all other interest rates (short and long-term) also reflects market uncertainty, about the future path of debt market yields, through changes in OIS rates.

Transmission to Deposit and Credit Markets

The tight money regime has been characterized by a sharper rise in deposit than loan rates. Rates on fresh deposits rose by 250 basis points between March 2022 and March 2024, while rates on fresh loans increased by 174 basis points. The rates on outstanding loans and deposits follow a similar pattern. The details are provided in the tables below.

TABLE 1.2

Rates on Outstanding Loans and Deposits (in %)

	Mar-21	*Mar-22*	*Mar-23*	*Mar-24*
WALR	9.1	8.74	9.72	9.83
Change		-0.36	0.98	0.11
WADTDR	5.28	5.03	6.16	6.88
Change		-0.25	1.13	0.72

Source: RBI.

TABLE 1.3

Rates on Fresh Loans and Deposits (in %)

	Mar-21	*Mar-22*	*Mar-23*	*Mar-24*
WALR	7.92	7.63	9.32	9.37
Change		-0.29	1.69	0.05
WADTDR	3.85	4.12	6.48	6.62
Change		0.27	2.36	0.14

Source: RBI.

The spike in deposit rates eroded CASA ratios across the board and put pressure on NIMs. The evolution of deposit shares is given below.

TABLE 1.4

Evolution of Deposit Types

	2019	*2020*	*2021*	*2022*	*2023*
CA	9.58%	9.47%	10.14%	10.22%	10.08%
SA	31.93%	32.19%	33.56%	34.57%	33.05%
TD	58.50%	58.34%	56.30%	55.21%	56.88%

Source: RBI.

At the end of the third quarter of 2023-24, the share of SA (Savings A/c) had fallen to 31% for the Indian banking sector. The ratio of CA remained stable. During the rate hike phase, banks also borrowed from the market at higher rates. The liquidity crunch pushed up the costs of all outsider liabilities. Moreover, it is noteworthy that the Weighted Average Call Rate (WACR) has risen by 324 bps between March 2022 and March 2024, reflecting full transmission of repo rate changes. RBI intends to align or nudge the WACR to the policy rate so as to improve the effectiveness of monetary transmission (Prabu and Bhattacharyya, 2023).

TABLE 1.5

Average Call and CD Rates

	Mar 2022	*Mar 2023*	*Mar 2024*
WACR	3.34%	6.61%	6.58%
CD Rate	4.65%	7.43%	7.61%

Source: RBI.

However, the banking sector managed to navigate the spike in cost of funds and register a consistent and impressive performance during the tight money regime. A comparison of the top five public sector banks (SBI, BOB, PNB, IOB and Union Bank) and the top private sector banks (HDFC Bank, ICICI Bank, Axis Bank, Kotak Mahindra Bank and Indusind Bank), in terms of market capitalization, presents some interesting results[4].

4. These results apply to a larger sample which covers more than 90% of the banking sector assets in India.

TABLE 1.6

Performance of Top Five PSBs (Average, in %)

	2021	*2022*	*2023*	*2024*
CASA ratio	41.79	42.50	40.63	40.44
NIM	2.42	2.42	2.72	3.25
CAR	14.19	14.47	15.71	16.16
ROA	0.26	0.52	0.72	1.03

Source: IBA, RBI, Annual Reports.

TABLE 1.7

Performance of Top Five Private Banks (Average, in %)

	2021	*2022*	*2023*	*2024*
CASA ratio	48.04	49.07	46.07	40.68
NIM	3.70	3.70	4.04	4.31
CAR	19.33	19.54	18.98	17.90
ROA	1.37	1.70	1.86	2.24

Source: IBA, RBI, Annual Reports.

The CASA ratio has fallen more for private banks than PSBs. It is normal for customers to prefer term deposits to CASA, when rates rise. However, the steady decline in CASA may be due to a different reason altogether. On July 19, the RBI Governor said 'Households and consumers who traditionally leaned on banks for parking or investing their savings are increasingly turning to capital markets and other financial intermediaries. While bank deposits continue to remain dominant as a percentage of financial assets owned by households, their share has been declining with households increasingly allocating their savings to mutual funds, insurance funds and pension funds' (Das, 2024). Such disintermediation can not only result in sudden liquidity outflows from banks, but also a sharp rise in interest cost as they try to source fresh liabilities. In other words, they may be caught up in a vicious cycle of interest rate risk and liquidity risk due to shifts in customer preferences.

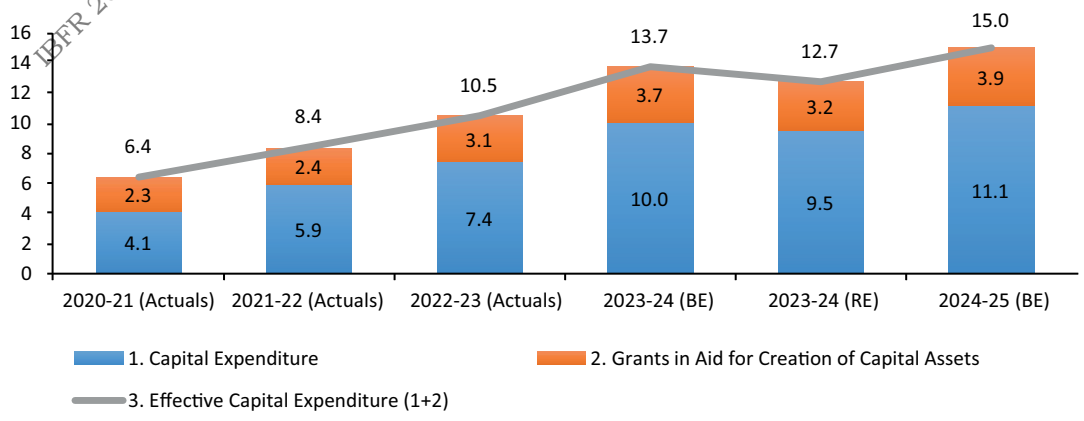
Nonetheless, both public and private sector banks have increased their NIMs and ROAs, during a liquidity crunch phase. The favourable response of NIM to a rate hike can be attributed to the dominance of the EBLR regime and consequent focus on retail credit introduced in September 2019. However, the optimistic outlook should be tempered with a dose of caution. If policy rates are slashed, in the foreseeable future, EBLR-linked loan rates will decline earlier. High-cost deposits, contracted at fixed rates, will be affected later. Hence, industry NIM may be hurt when policy rates are reduced.

1.5.2 *Fiscal Policy and Union Budget*

In the Union Budget for FY 2024-25, the total receipts other than borrowings and the total expenditure are estimated at ₹32.07 lakh crore and ₹48.21 lakh crore respectively. The net tax receipts are estimated at ₹25.83 lakh crore. The fiscal deficit is estimated at 4.9% of GDP. The government promises to reduce it below 4.5% in FY 2025-26, reiterating its commitment to the path of fiscal consolidation (GOI, 2024c). The estimated capital expenditure of the government this year has increased to ₹11.1 lakh crores, while the effective capital expenditure rose to ₹15 lakh crores (Figure 1.4).

FIGURE 1.4

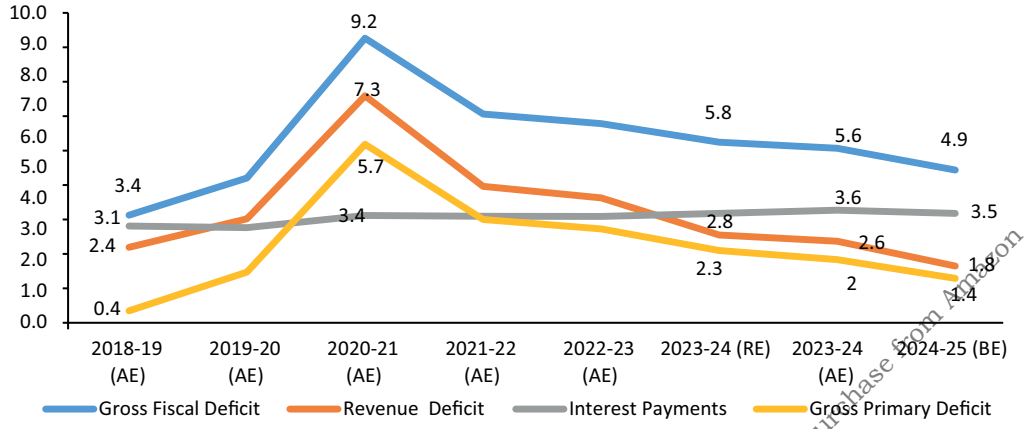
Trends in Capital Expenditure (in ₹ Lakh Cr.)



Source: Ministry of Finance.

FIGURE 1.5

Trends in Key Fiscal Ratios of Central Government (% of Nominal GDP)



Source: CMIE Economic Outlook and Ministry of Finance.

The gross and net market borrowings through dated securities during 2024-25 are estimated at ₹14.01 lakh crore and ₹11.63 lakh crore respectively. These figures are lower than last year. The government also intends to reduce short-term borrowing through Treasury Bills by ₹1 lakh crores. Such measures should lower borrowing costs across all tenors, crowd in private investment and credit offtake, and lower inflationary pressures.

The Fiscal Responsibility and Budget Management (FRBM) Act prescribed that the central government should restrict its fiscal deficit to 3% of the GDP by March 2021. It also mandated that the central government debt and general government debt should be limited to not more than 40% and 60% of the GDP respectively by end March 2025. Due to the large fiscal stimuli triggered by the pandemic, the government could not meet these targets.

Figure 1.5 looks at the evolution of key fiscal parameters before and after the pandemic. While the government stuck to the FRBM targets till 2018-19, when both fiscal deficit and primary deficit were as low as 3.4% and 0.4% respectively, the pandemic worsened these fiscal parameters. Fiscal deficit jumped to 9.2%, and primary deficit rose to 5.7% in FY 2020-21. Tax revenue also weakened due to the steep fall in GDP growth during this phase. Since then, the interest payment on elevated public debt has been a cause of concern, as it has moved up from 3% of GDP in FY 2019-20 to around 3.5% in FY 2024-25. Further, the tight money regime hardened sovereign yields and added to interest costs.

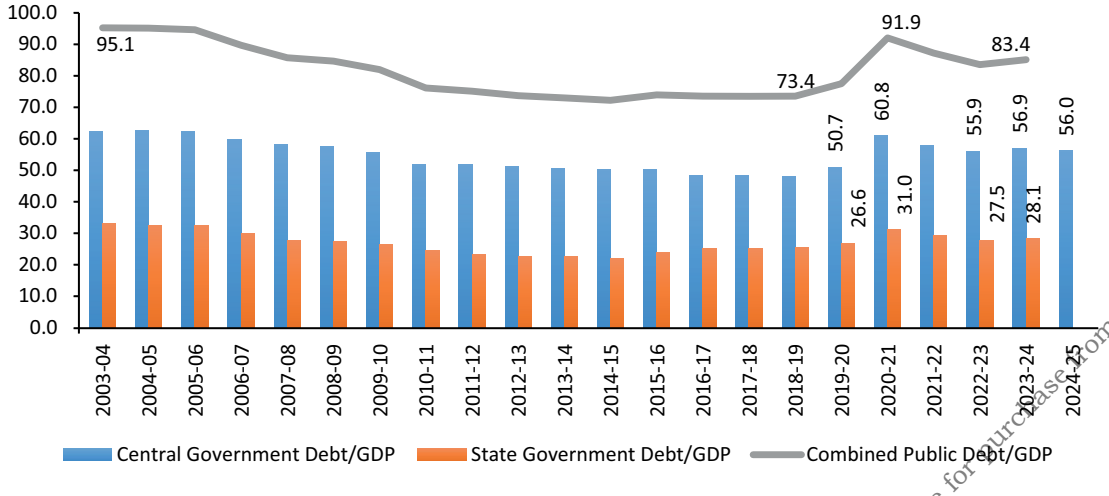
Public Debt Sustainability

Public Debt-to-GDP in India has exhibited a declining trend from a peak of 95% in FY 2003-04 to a low of 73.4% in FY 2018-19. It shot up again to 92% during FY 2020-21 due to higher fiscal deficit and negative nominal GDP growth. However, the dramatic economic recovery and restoration of fiscal discipline brought this ratio down to 83.4% in FY 2023-24. Both central and state governments have successfully managed to reduce their public debt ratio from a high of 61% and 31.1% in 2020-21 to 57% and 28 % respectively in 2023-24 (Figure 1.6).

The combined effects of (i) excess nominal GDP growth over interest rate on public debt and (ii) a declining primary deficit ratio from a high of 5.7% in 2020-21 to 1.4% (FY 2024-25 estimate), can make public debt in India sustainable. Public debt ratio of a country tends to fall over time if nominal GDP growth exceeds the sum of nominal interest rate and the primary deficit ratio.

FIGURE 1.6

Trends in India's Public Debt-GDP Ratio



Source: CMIE Economic Outlook and RBI.

1.6. Banking Sector Developments

1.6.1 Credit

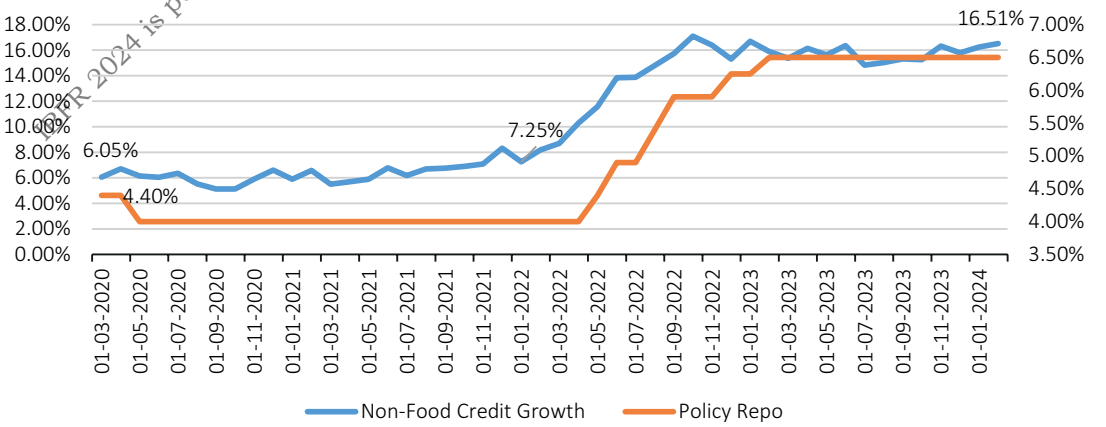
The Indian banking sector witnessed a sharp growth in Gross Advances (> 19%), from ₹135.2 lakh crores to ₹161.1 lakh crores, in FY 2023-24. The GNPA Ratio fell to a 12-year low of 2.8%, while NNPA ratio was 0.6%. The Provision Coverage Ratio increased to 76.4%, while the slippage ratio (fresh NPAs as a percentage of average standard advances) declined to 1.6% (FSR, 2024). The market for bank credit has come a long way since the pandemic. This section traces the journey and analyzes sectoral trends.

Year-on-year growth in non-food bank credit remained subdued in the range of 5-8% in the Covid and post-Covid period till March 2022. Subsequently, the pent-up demand led to rapid credit expansion from the start of FY 2022-23 and despite the disinflationary policy rate hikes the growth momentum was sustained during the entire period of monetary tightening.

The profile of non-food bank credit distribution across sectors has changed significantly in the recent past. Retail credit and service sector credit have expanded much faster as compared to industry and agri-sector, thereby gaining dominant share in overall bank credit by February 2024.

FIGURE 1.7

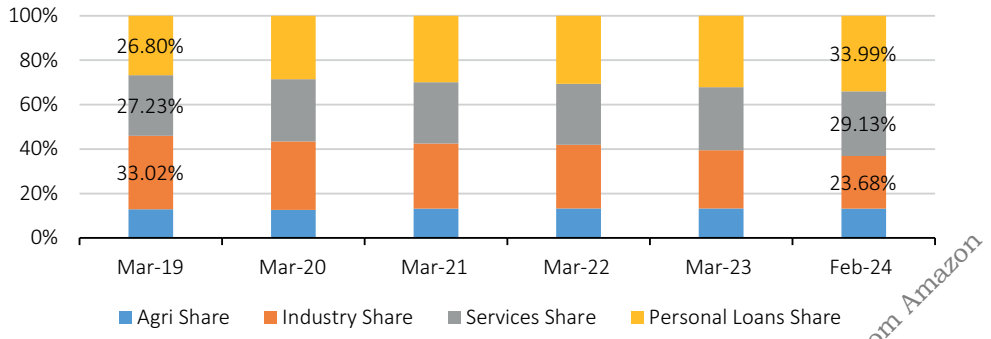
YOY Non-Food Credit Growth and Monetary Policy Rates



Source: Author's calculation, based on RBI data.

FIGURE 1.8

Sectoral Credit Growth Rates and Share in Non-Food Bank Credit



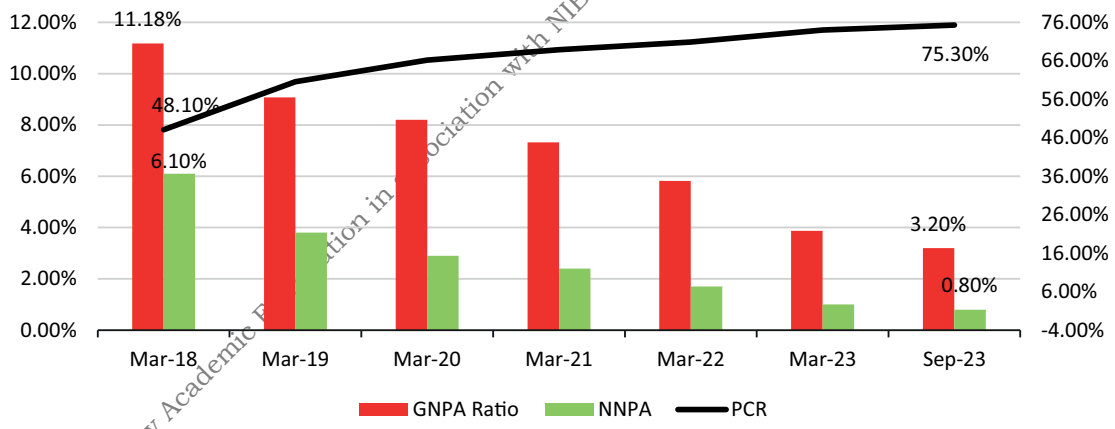
Source: Author's calculation, based on RBI data.

Asset Quality of Bank Credit

Deterioration in credit quality is a major concern that arises from a period of credit boom. In India however, the post-Covid credit spurt has occurred concurrently with improvement in overall asset quality across all banking groups. The GNPA ratio for the banking sector declined from 11.18% in 2018 to 3.87% in March 2023 and further to 3.2% in September 2023. Fall in the slippage ratio, faster reduction

FIGURE 1.9

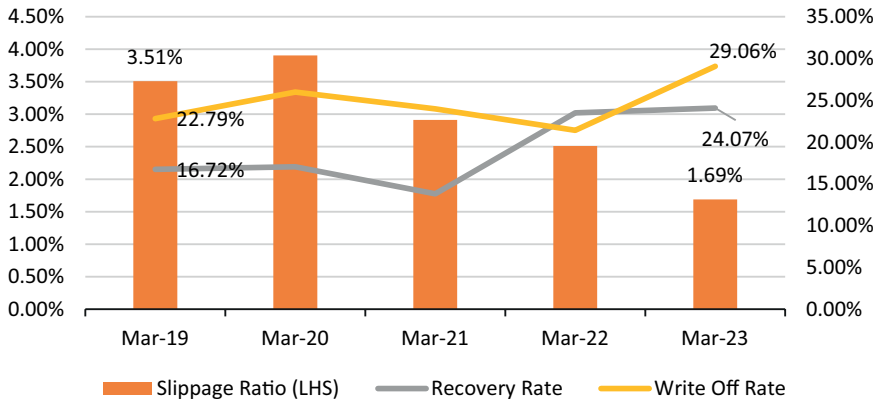
Asset Quality Trends of Indian Banking Sector



Source: FSR, RBI, December 2023.

FIGURE 1.10

Movement in NPA Components



Source: FSR, RBI, December 2023.

of NPAs (through recovery and upgradations) and pro-active balance sheet clean-up through write-offs have all contributed. There has however been a marginal uptick in the NPA accretions in the half-yearly period of March 2023 to September 2023 (FSR, 2023). Prudent and pro-active provisioning by SCBs has enhanced the provisions coverage ratio to 75.3% and brought the Net NPA ratio down to a record low of 0.8% in September 2023 (FSR, 2023). This will hold the banks in good stead when Expected Credit Loss based provisioning is mandated by RBI.

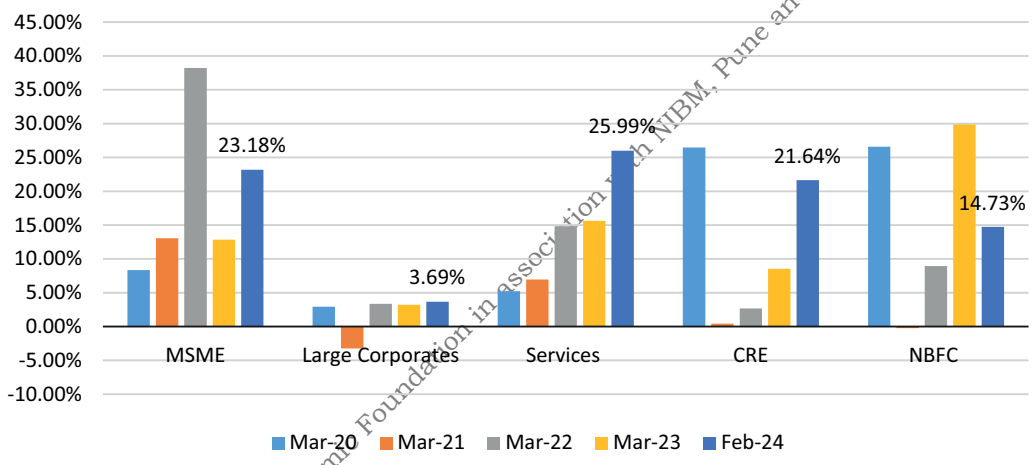
Credit to Industry and Service Sectors

There has been disparate performance of bank credit to MSMEs versus Large Corporates. Both bank and NBFC credit to the MSME sector has grown rapidly (both during and after the Covid pandemic and in the last one year), whereas bank lending to large corporates shrank during the Covid period and did not rebound later.

The better performance of MSME sector can be attributed to multiple factors. First of course is the boost provided by Government's ECLSGS guarantee scheme during the Covid-19 pandemic, resulting in YOY credit growth to this sector shooting up to 38.21% at end March 2022. Secondly, with the revamping of the Credit Guarantee Scheme with effect from April 2023, additional collateral free guaranteed credit at higher limits and lower credit costs has been provided, which has led to a high

FIGURE 1.11

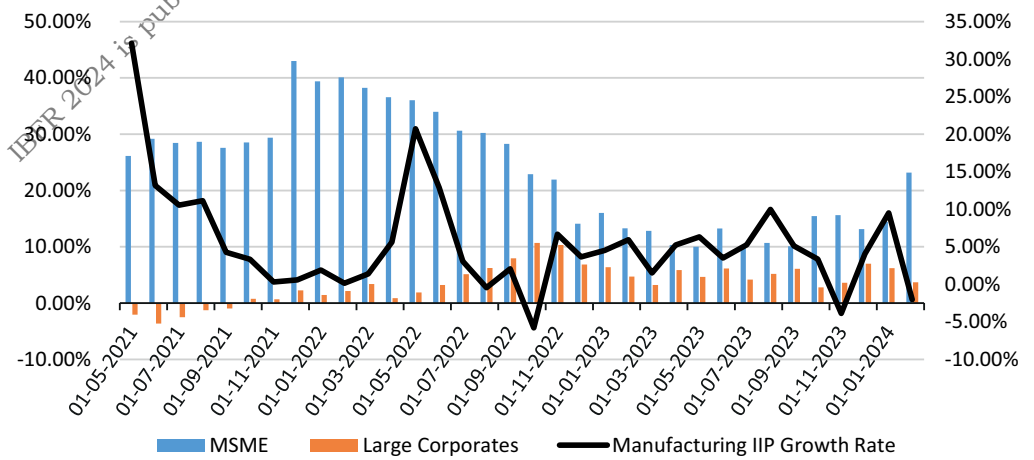
Bank Credit Growth Rates For Non-Retail Segments



Source: RBI.

FIGURE 1.12

Growth in Bank Credit to MSME and Large Corporates vis-a-vis IIP Growth Rate



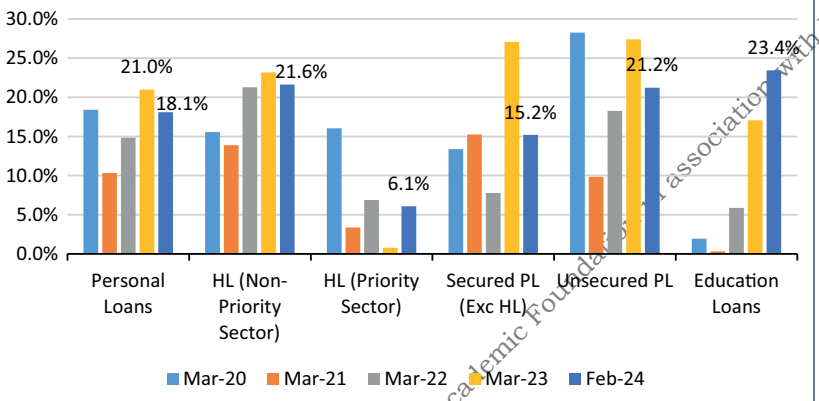
Source: RBI.

MSME credit growth (23.18% for banks at end February 2024 and 39% for NBFCs during Q2 of FY 2023-24). MSME NPAs have also reduced (GNPA ratio declined steadily to 4.7% in September 2023 from 7.7% a year ago). The government guaranteed portfolio however has been more stressed with GNPA ratio rising to 6.5% in September 2023 (FSR, 2023). Credit to the Services (with Trade, Transport Operators and Professional Services having more than 30% share and many of these falling within MSME definition) has also seen a sharp increase in the last one year.

The underperformance of large corporate credit (share of this segment in bank credit to Industry declined from 83.36% in 2019 to to 70% as of February 2024) can be attributed to both demand and supply side factors. As indicated in RBI's FSR (December 2023), firstly, companies have been deleveraging their balance sheets: the debt to equity ratio of listed, private non-financial companies has come down from around 55% as of H1 2021-22 to 48.5% in H1 2023-24. Secondly, nominal sales growth of manufacturing companies has slowed down sharply to 4.8% as of Q2 2023-24 as compared to more than 55% in Q2 2021-22 reducing potential funding needs. On the credit supply side, banks have been actively reducing credit concentration to large borrowers, following the implementation of RBI's Large Exposure Framework (2019). However, debt service of this segment is not a cause of concern due to robust financials. The share of GNPAs of large borrowers' (top 100) in SCBs' total GNPAs has also fallen sharply. The Corporate bond default data, published by CRISIL (2023), suggests improving asset quality of large corporates, with overall annual default rate of bond issuers reducing to 1.5% (76 defaults) in FY 2022-23 as compared to 4.5% (318 defaults) in FY 2019-20.

FIGURE 1.13

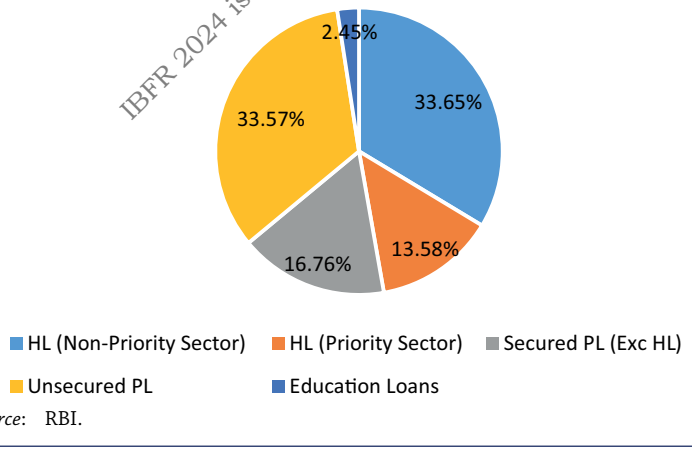
YOY Growth Rate of Retail Credit Categories



Source: RBI.

FIGURE 1.14

Share of Personal Loan Segments of Bank Credit as of February 2024



Source: RBI.

Bank Lending to NBFCs

Bank lending to NBFCs grew at a CAGR of 22% from March 2022 to February 2024, with a marginal slowdown in the last year. NBFCs, including HFCs have also been the largest issuers of bonds (53.5% share of bonds issued during April 2023 – November 2023; FSR, 2023). The combined resource raising has been primarily pumped into retail credit markets by NBFCs. Banks too have been on a retail lending spree on a standalone basis and also via co-lending models with NBFCs and Fintechs.

Retail Credit

Retail bank credit saw sustained expansion in the post-Covid period between FY 2021-22 to FY 2022-23. The major regulatory apprehension in this segment is with regard to precipitous growth in unsecured loans. The share of unsecured loans in retail bank credit increased substantially from 28% in 2020 to 33.6% in February 2024. NBFCs also saw an increase in the share of unsecured loans from 53% in March 2022 to 56% in September 2023. The Financial Stability Report of RBI (FSR, 2023) reports two important concerns pertaining to

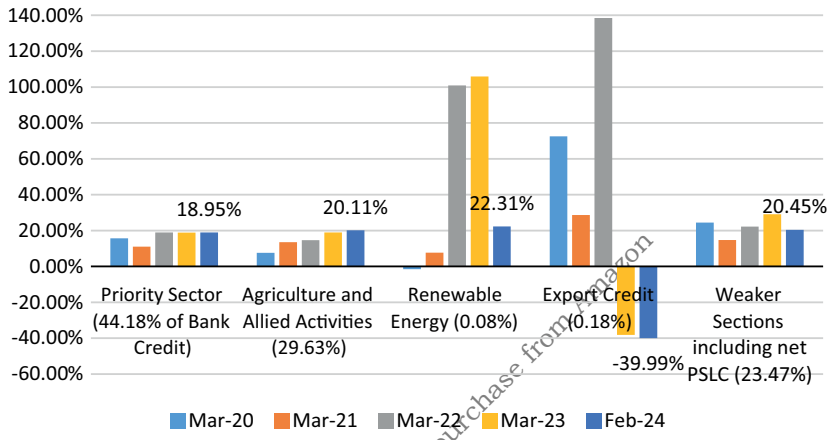
household finances: (i) fall in net savings from 11.5% of GDP in 2020-21 to 5.1% (below long run average of 7%) in 2022-23 and (ii) rise in financial liabilities from 3.8% of GDP in 2020-21 to 5.8% in 2022-23. Correspondingly, delinquencies in this segment have also been rising. RBI has tried to curb the unsecured loan appetite of banks and NBFCs to an extent with an increase in risk weights for regulatory capital requirement. Resultant, the 21% growth rate clocked by banks' retail credit portfolios in March 2023, has fallen to 18% in February 2024, primarily through slow-down in unsecured and non-housing retail credit.

Priority Sector Credit

Priority sector lending (representing 44.18% of overall bank credit) has grown at a stable rate in the last 4 years. The two positive trends relate to agriculture and allied activities and weaker sections, suggesting enhanced access to formal credit. Export credit is an area of concern, with a shrinking size in the two years following the Covid pandemic correlated with falling exports. The second underperforming segment is renewable energy (constituting loans upto ₹30 crores for small sized projects). India has set a target of achieving 50% cumulative power installed by 2030 from renewable energy sources. In FY 2023, 97% of 17 GW capacity addition came from renewables. Banks however have lagged in financing this sector which constitutes less than 0.1% of total priority sector credit as of February 2024.

FIGURE 1.15

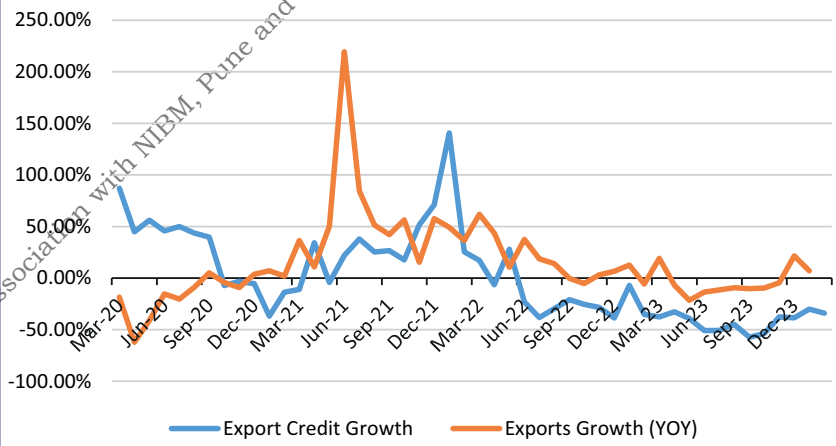
Segment-wise Priority Sector Credit Trends



Source: RBI.

FIGURE 1.16

YOY Growth in Export Credit and Exports



Source: RBI.

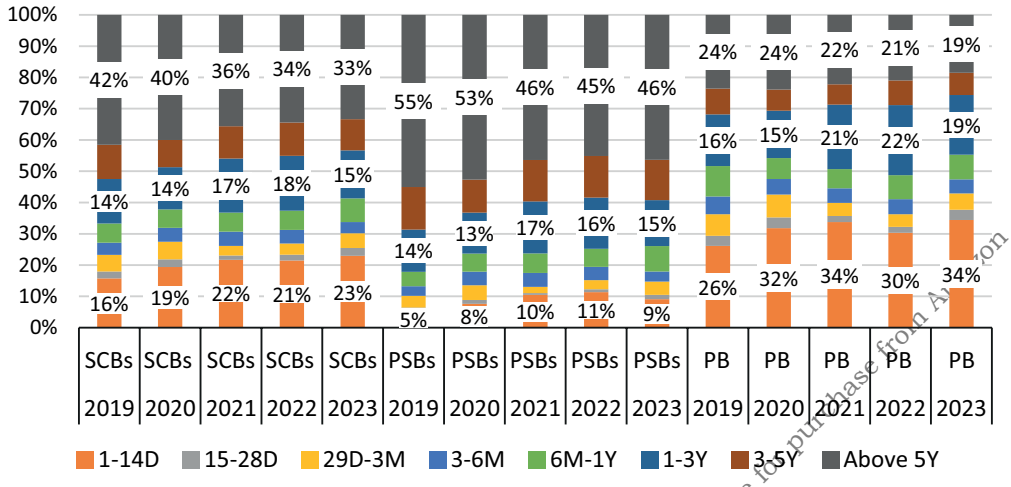
1.6.2 Investments

Figure 1.17 captures year-wise maturity pattern (starting from 1-14 Days till Above 5 Years) of investments (primarily in debt market) made by all SCBs, Public Sector Banks (PSBs), and Private Banks (PBs), between 2019 and 2023. It is evident that investments in the shortest tenor (1-14 Days) are significant, and follows an increasing trend, especially at the industry level (all SCBs), and also for the Private Banks. However, PSBs consistently possess maximum investment in the longest-term (Above 5 Years), but with a declining trend over the years (55% in 2019 vs. 46% in 2023). Long-term investments by private banks are not only lower than that of the PSBs, they also follow a declining trend over the years. Higher investment in short-term (long-term) buckets indicate a relatively larger Trading (HTM) book. On the other hand, the increasing (declining) trend of short-term (long-term) investments exhibits bank initiatives to manage interest rate risk, when rates rise.

Long-term investments (HTM) vs. trading activity (AFS & HFT) of SCBs under different macroeconomic scenarios can be assessed through Figure 1.18 depicting the trend in Interest Income (both from Advances and Investments) versus trading profit made by the SCBs over the years, under different macroeconomic/interest rate

FIGURE 1.17

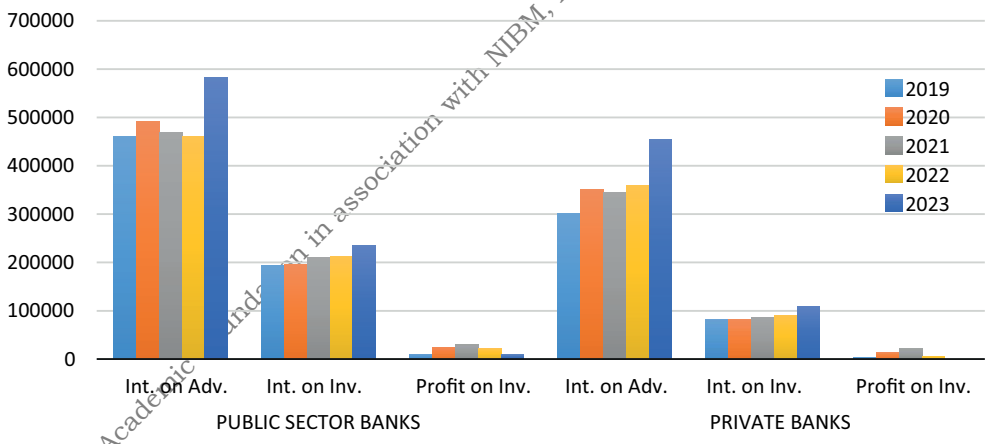
Maturity Pattern of Investments of SCBs under Various Int. Rate Scenarios



Source: RBI Database on Indian Economy; Figure is Author's Creation.

FIGURE 1.18

Interest Income (Advances & Investments) vs. Trading Profit of SCBs under Various Interest Rate Scenarios (₹ Cr.)



Source: RBI Database on Indian Economy; Figure is Author's Creation.

scenarios. It is evident that unlike interest on advances, the interest on investments follows a slow but consistent rising trend, across the banking sector. However, the profit on investments is a very small portion of bank earning, and also keeps changing based on the size of the trading book and the rate cycle.

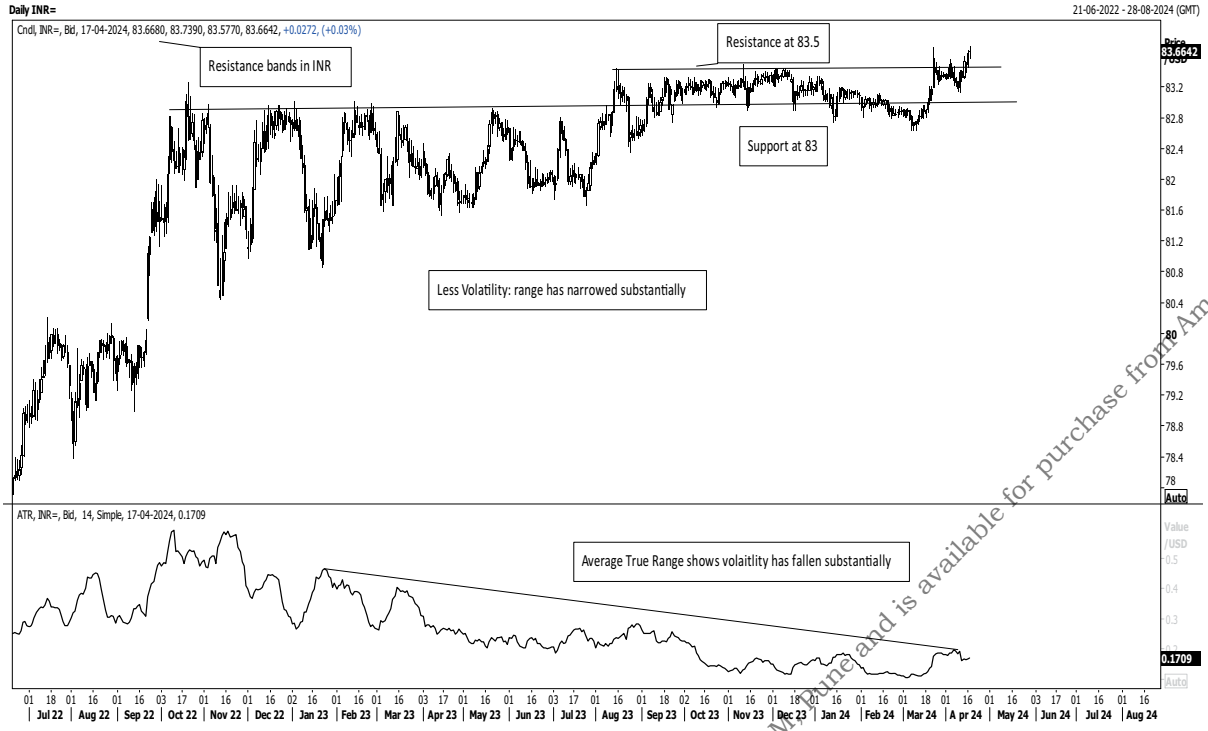
1.7. Forex and Equity Markets

1.7.1 Forex

This section covers the developments in the Indian forex markets, with a comparative analysis of the peer group currencies and an emphasis on the linkages to the monetary policy decision of the Federal Reserve that has impacted currencies globally. Figure 1.19 shows the movement in the Indian rupee in the recent past (August 2022 to March 2024). We can see that compared to the period September 2022 to September 2023, the period from October 2023 to March 2024 has seen a close-range rupee movement. While movement from September 2022 to September 2023 has also been range bound, it showed a greater range than the period from October 2023 to December 2024, which saw rupee move within a close range of 82.8 to 83.3. From January to April 2024, the

FIGURE 1.19

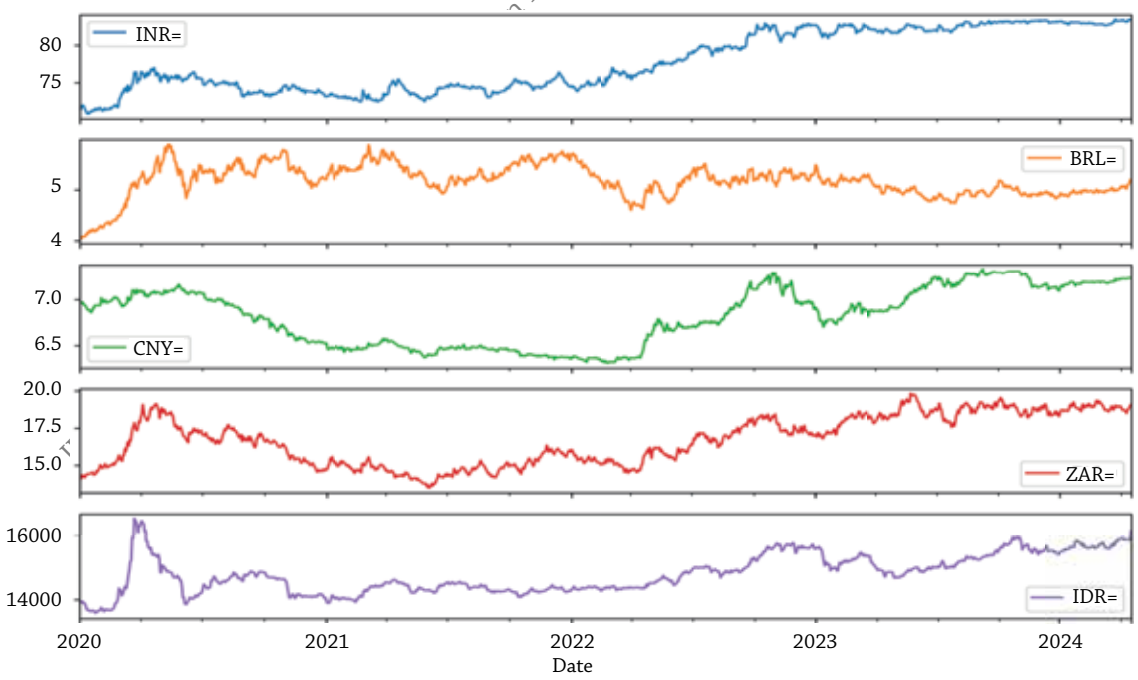
INR Movement (August 2022 to April 2024)



Source: Eikon, Refinitiv.

FIGURE 1.20

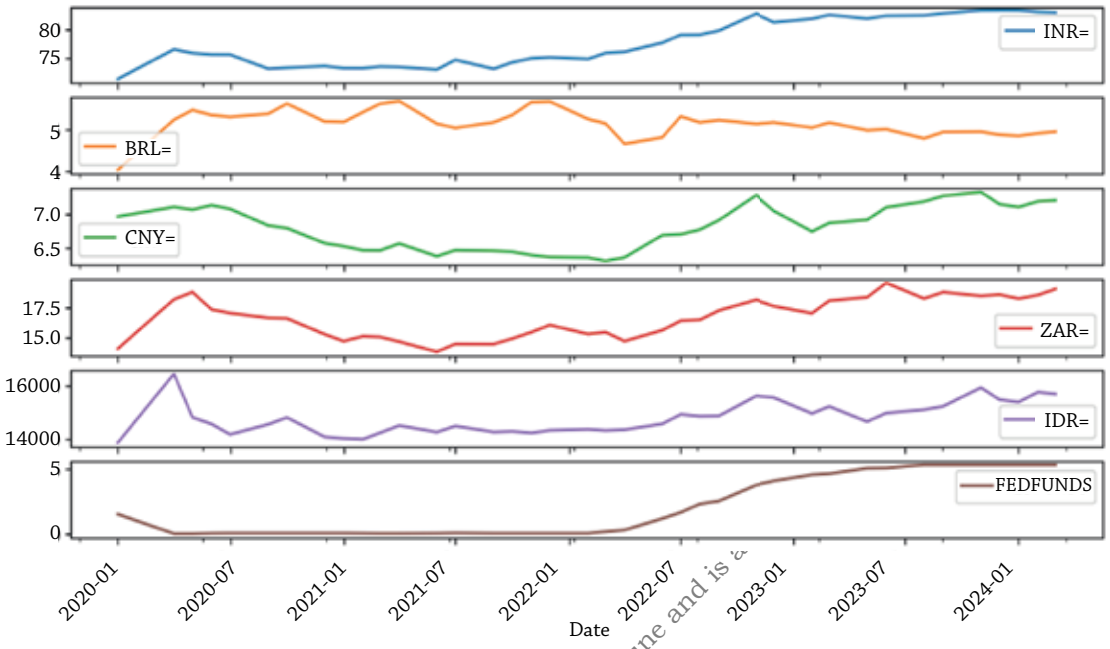
Daily Movement in INR with Peer Group Currencies



Data source: Eikon, Refinitiv.

FIGURE 1.21

Monthly Movement in Major Currencies with Federal Funds Effective Rate



Data source: Eikon, Refinitiv, and Federal Reserve Bank of St. Louis.

rupee has seen more movement, while maintaining the upper resistance of 83.50. The lower panel of Figure 1.19 shows the Average True Range (ATR)[5], which is an indicator of volatility. The volatility has substantially gone down from October 2023 to December 2023, with a slight increase from March 2024.

Figure 1.20 shows the INR movement in the context of the movement in other currencies: Brazilian Real (BRL), Renminbi (CNY), South African Rand (ZAR), Indonesian Rupiah (IDR). It can be seen that, other than BRL, the emerging market currencies IDR, ZAR, CNY and INR has seen a sharp depreciation from 2022. While there has been greater stability in these currencies from 2023 onwards, the movement in INR is most stable. In fact, from October 2023, the INR movement has shown a sharp fall in volatility matched closely by the Renminbi's movement. Further, there is resistance maintained by rupee at certain levels as seen in Figures 1.19 and 1.20. Thus while INR has closely been linked with the peer group currencies, the movement in recent times has been more stable than the other currencies.

Figure 1.21 plots the monthly data of the currencies against a Federal Funds Effective Rate[6], plotted in the bottom-most panel of the data. It is evident that the period of expansionary monetary policy post Covid saw more stable emerging market countries with less depreciation, while the rate hike post April 2022 led to a sustained depreciation in all the currencies. The pause in rate hike has seen a stall in the sharp depreciation.

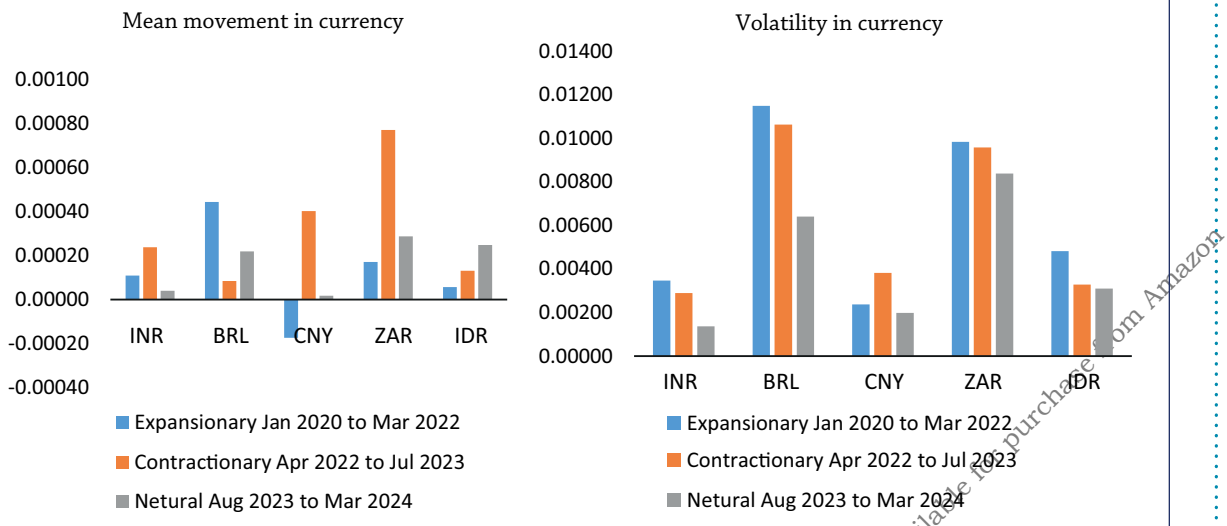
Figure 1.22 depicts that the mean movement and volatility (i.e., standard deviation) have been minimum in INR in all, especially in the neutral phase. The depreciation in all currencies is maximum during the rate hike phase and volatility has been highest in the expansionary phase. The neutral phase has seen least movement and volatility in all currencies but most of all in rupee.

5. Average True Range looks at the difference between the high and low values, or the range in prices during a trading session.

6. Percent, monthly, not seasonally adjusted.

FIGURE 1.22

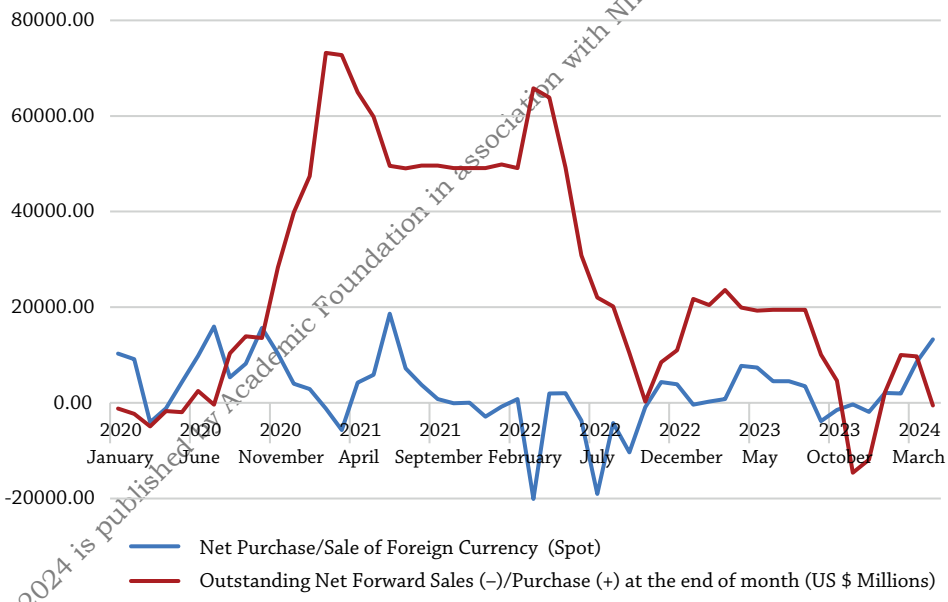
Mean Movement and Volatility in INR and Peer Group Currencies



Data source: Eikon, Refinitiv.

FIGURE 1.23

RBI Interventions in the Forex Market (Spot and Forward)

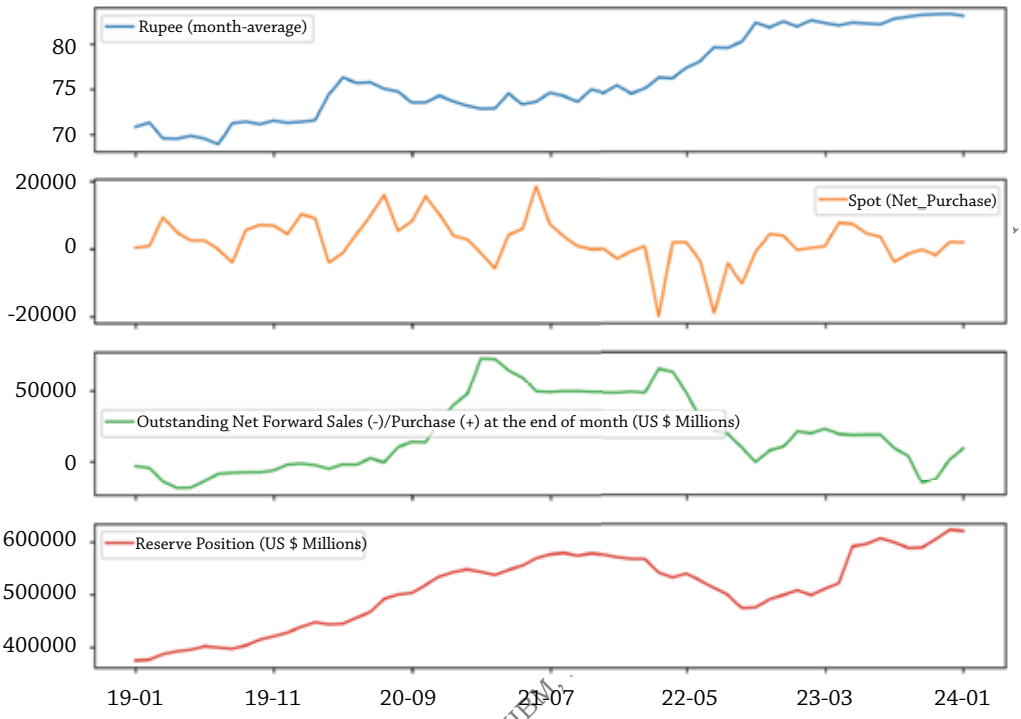


Source: RBI database.

The intervention data from RBI supports the categorization of rupee as a 'managed float'. The post-pandemic intervention data (published monthly by RBI) shows frequent spot and forward market interventions, both during depreciating and appreciating spells of the rupee. Figure 1.23 shows that foreign exchange (FX) intervention gained momentum in last two years in both spot and forward markets. Furthermore, intervention in the forward market have increased manifold post pandemic. Figure 1.23 shows both spot and forward intervention has been consistent, with the forward market intervention far greater than the spot intervention.

FIGURE 1.24

Rupee Movement, Intervention (Spot and Forward), and Forex Reserves



Source: RBI data.

Figure 1.24 puts the intervention data in the context of the rupee movement. The topmost panel shows the rupee movement since 2019 and the next two panels the spot intervention data (net purchase of dollars), and the forward intervention data respectively. The bottom-most panel gives the reserve position. The sharp depreciation of rupee during the pandemic (spike in rupee) matches the decline in net purchase in the second panel, as spot sale of dollars were carried out. The forward market shows increased forward dollar sales during this time. From 2021 onwards where rupee had an appreciating spell, net purchases both in spot and forward have gone up. RBI has consistently used the dollar swap to avoid the impact of spot intervention on domestic liquidity. The depreciating phase of rupee in 2022 sees a sharp fall in net purchase both in spot and forward markets, suggesting dollar sales. In 2023, intervention in spot and forward has kept rupee hovering at the 80-83 range. This can be seen in both the spot and forward intervention. The quantum of reserves moves in tandem with the forward purchase data.

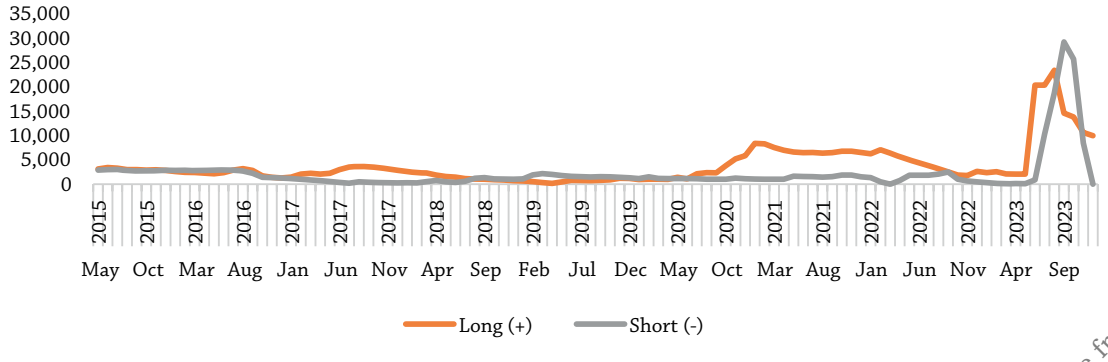
A few points are noteworthy:

1. The interventions during appreciation and depreciation have contained volatility.
2. The appreciating spells have been used to build up the reserves.
3. The mode of intervention has shifted extensively to the forward market, which impacts the premiums and gives a forward guidance on the rupee. In effect, the present liabilities created out of dollar intervention are transferred to future.

To understand the future liabilities created by intervention, Figure 1.24 shows the maturity wise breakup of the liabilities. We can see that long term maturity was increasing post pandemic and spiked in the recent past from 2023 onwards. This suggests that forward swaps to be settled during this time were carried forward, or matching new swaps undertaken. The evidence suggests repercussions on domestic liquidity are being carefully handled by the central bank by intervening majorly through the forward market, but the maturity breakdown suggests increase in future liabilities.

FIGURE 1.25

Maturity Breakdown (by Residual Maturity) of Outstanding Forwards of RBI (US $ Crores)



Data source: RBI database.

The reserve build-up to support intervention, it must be stressed, also has a cost in terms of investment in dollars.

1.7.2 Stock Markets

The stock markets around the world are showing a consistent rally as seen in Figure 1.26. Here we can see six global markets: Nifty 50 India (^NSEI); Dow Jones, US (^DJI); Deutscher Aktien Index, Germany (^GDAXI); Bovespa Index, Brazil (^BVSP); MOEX Russia Index (IMOEX.ME); and SSE Composite Index, China (000001.SS) from 2009 to 2024. As seen in Figure 1.26, the markets have established a strong upward trend post the Global Financial Crises 2008-09. The pandemic saw a sharp slump in all the markets. For each of these markets, except IMOEX and SSE composite, we can see a sharp rally post the pandemic, a correction differing in severity in 2022 and another rally in the period from late 2022 to 2024.

To relate the growth in the above-mentioned stock markets to the monetary policy decisions, we differentiate between three phases in the post-pandemic period. The phases in this case marked with the RBI rate decisions but closely follow the Federal Reserve rate decisions.

a. 01-01-2020 to 04-05-2022: Post-pandemic liquidity infusion

b. 05-05-2022 to 10-08-2023: Inflation targeting phase

c. 11-08-2023 to 15-04-2024: Rate pause phase.

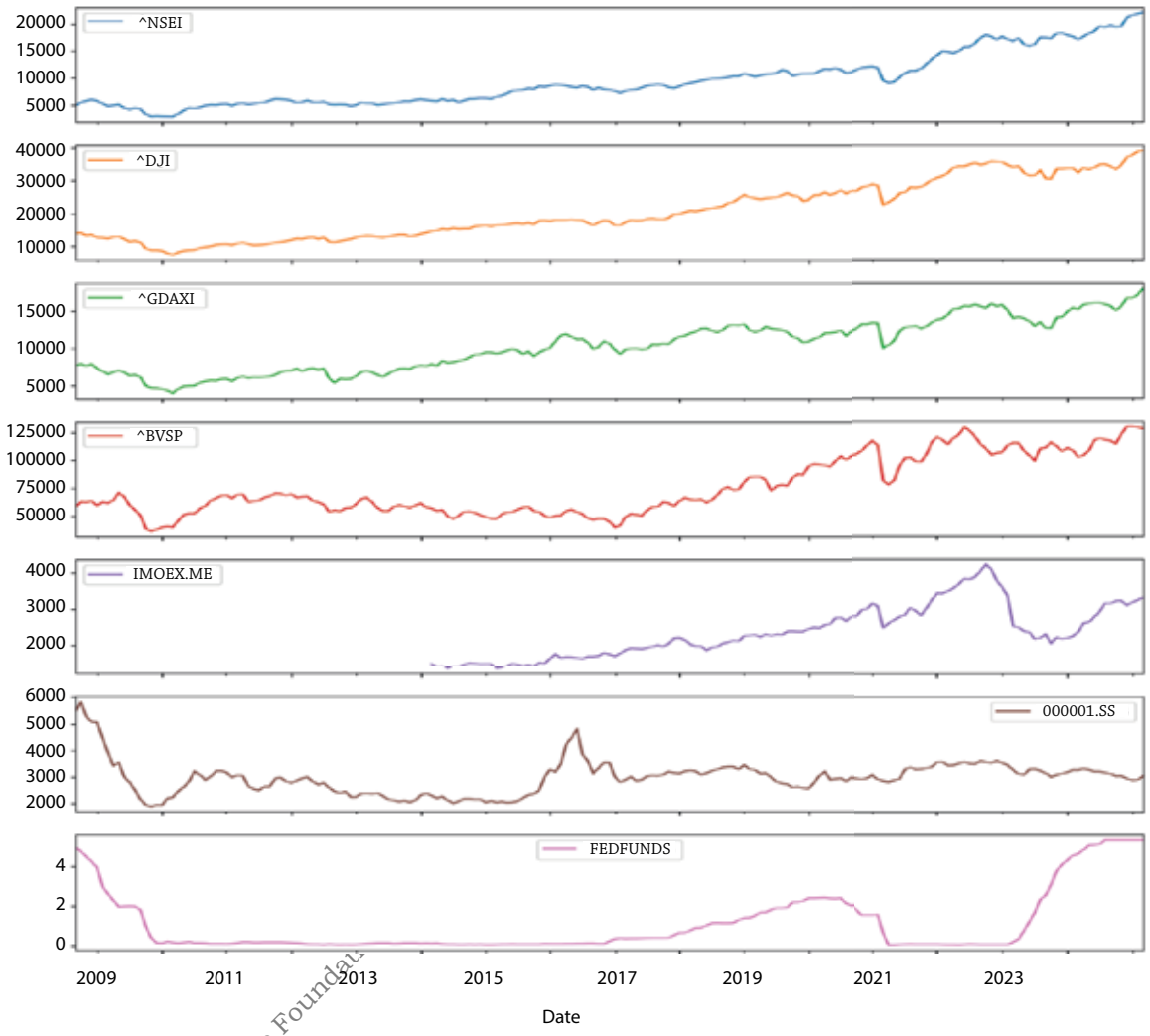
We can see that the post-pandemic expansionary phase, represented by the deep trough in the bottom-most panel post 2020, has seen major rallies in all markets. With the central banks curbing liquidity infusion from May 2022, responding to inflationary pressures worldwide, the markets showed some correction. However, with the rate hike paused from August 2023, the markets have rallied again.

The Indian equity market has seen a sharp rally all throughout the post-pandemic phase, with a slight correction in the rate hike phase. As Figure 1.27 shows, while each market (except IMOEX and SSE composite) had increase in returns for the last phase, i.e., the rate hike pause phase, the Indian market has recorded the highest return in this phase.

To understand better if the market movement is showing overvaluation, we look at two measures based on technical analysis indicator Relative Strength Index (RSI). Using the methodology of Roy Trivedi (2021) and Condorelli (2018), we see the overvaluation in terms of two indicators: first, ratio of the extent of 'overbought to oversold' or 'accumulated upward momentum' (Condorelli), and second, the ratio of number of days markets are overbought (OB) to number of days it is oversold (OS) (Roy Trivedi). We can see from Figures 1.28 and 1.29 that NSE is showing consistent overvaluation in terms of both indicators. This suggests that compared to other markets, the Indian markets should be cautious about an overvalued bull phase which can lead to sharp corrections.

FIGURE 1.26

Major Global Stock Markets and their Movement



Raw data source: Yahoo finance.

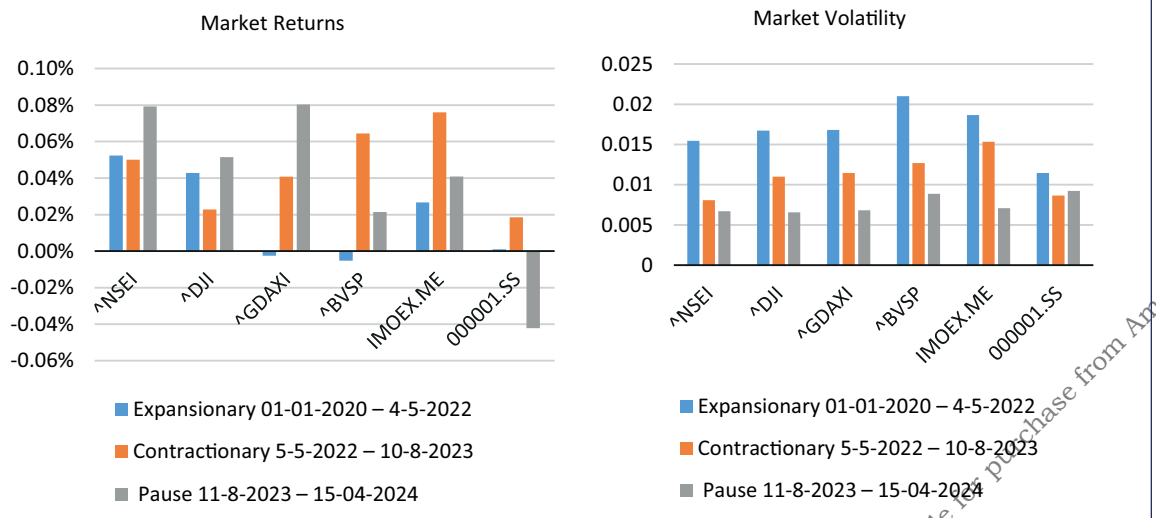
These findings gain support from the concern of the regulators in recent past regarding the valuation of the equity market. In March 2023, the Securities and Exchange Board of India chairperson, Madhabi Puri Buch, expressed her concerns about the 'stretched valuations' of small and mid-cap stocks, iterating there are 'pockets of froth' in the market (*Hindustan Times*, March 12, 2024). In July 2024, she again cautioned against the losses made by younger investors in the F & O segment, and the speculative trading in the segment, which was transitioning to a macro issue (*The Economic Times*, July 22, 2024).

1.8. Conclusion

The global economy has passed through a difficult phase over the last couple of years. Inflation was high, the financial sector was shaken and the prospect of stagflation loomed large. However, recovery has been quicker and less painful than it was thought. The Indian economy continued its stellar performance. GDP growth was high, fiscal deficit and government borrowing were on the decline, and physical investment was spurred by government capital expenditure. The banking sector has continued to improve its asset quality and profitability, despite a steep hike in repo rates. Business has also been buoyant, spurred on by consistent

FIGURE 1.27

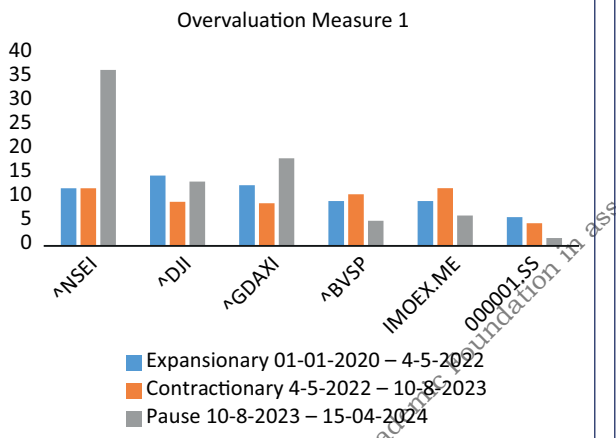
Returns for the Three Phases in Each Market



Raw data source: Yahoo finance.

FIGURE 1.28

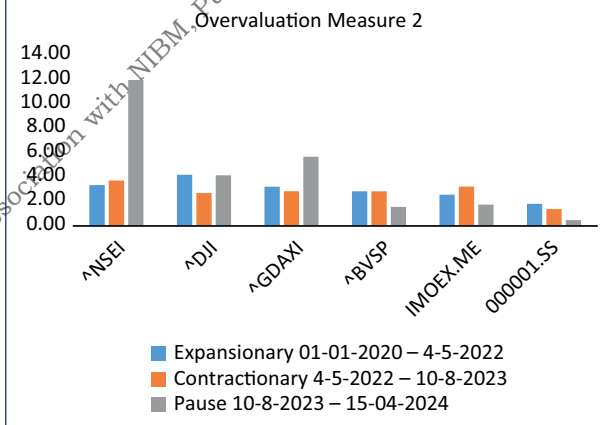
Overvaluation Measure 1



Raw data source: Yahoo finance.

FIGURE 1.29

Overvaluation Measure 2



Raw data source: Yahoo finance.

growth in retail and MSME credit. The INR has held its own against peer currencies, while the domestic stock market continues to flourish.

However, as the world looks forward to a softer rate regime, it must be wary of a few pitfalls. First, a sharper reduction in yields on floating-rate loans, vis-à-vis fixed rate deposits, may reduce banking sector NIM and net worth. Secondly, sudden crashes in overvalued stock markets may not only erode investor wealth but also result in large foreign capital outflows from emerging markets. Thirdly, the propensity for disintermediation towards capital markets may increase. Fourthly, when rates are low, banks tend to make riskier loans in search of higher yields. Finally, growth in public debt may accelerate during an easy money regime, which may endanger fiscal balances of central and state governments. These lessons are not new. But, since public memory is short and crises are repetitive, it may be useful to remember them as we await a new dawn.

Postscript: While Indian banks and NBFCs continue to be in fine health (with GNPAs and NNPAs at their lowest levels in more than a decade), incipient stress has been reported in some unsecured credit segments like consumption loans, microfinance loans and credit card out-

standing. The Governor's statement, after the Monetary Policy Committee meeting in October 2024, advised SCBs and NBFCs to assess their exposures in these areas and maintain robust underwriting and post-sanction monitoring standards. In particular, outlier NBFCs were asked to abstain from imprudent credit growth, usurious interest rates, frivolous penalties and target-driven compensation systems. (Reserve Bank of India, 2024c)

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2

Impact of Recent Developments on Debt Markets in India

Kedar nath Mukherjee[1]

2.1. Introduction

The Debt Market, comprised of Money (Short-term) and Securities (Medium to Long-term) markets, plays a crucial role in the overall growth and development of the Indian economy. This chapter highlights the depth and breadth of the debt market in India over the last half a decade, important policy and market developments related to the Indian debt market, and their possible impact.

A liquid and vibrant primary debt market allows institutional borrowers to effectively and timely finance their funding gap, and provide various investment and trading avenues to the savers to successfully deploy their surplus funds. Table 2.1 exhibits the historical (FY2019 to FY2023) trend in fiscal deficit and market borrowings of both Government of India and state governments. It is evidenced that with a historical average deficit of around 6.75% (3.50%) of the country's GDP, the Central (State) Government(s) met the deficit requirements up to an extent of around 60% (80%) through various market borrowing programmes, primarily consisting of auctions of debt securities throughout the financial year (RBI, 2024b). These figures indicate the importance of government securities market in India.

Similarly, even if not as deep as the government securities market, the market for non-government securities/debentures in India is becoming slowly popular amongst various non-government entities and institutions in financing their respective deficits, as depicted in Figure 2.1. It is clear that even though the non-government securities market is historically dominated by securities issued through private placements, there are signs of improvement over the years in terms of both size and number of public issues, with a scope of further deepening of the market.

The chapter proceeds as follows. Section 2.2 discusses the money market in detail. Section 2.3 focuses on the primary market for debt securities. Section 2.4 presents the green bond and municipal bond markets. Section 2.5 throws light on Basel III AT-I bond markets. Section 2.6 studies the secondary markets for SLR and non-SLR securities. Second 2.7 assesses the local and global interest rate scenarios. Section 2.8 summarizes other significant developments in domestic bond markets. Section 2.9 concludes.

2.2. Indian Money Market

The money market plays a very important role in managing short-term liquidity (shortage or surplus), and very importantly, in monetary policy transmission, especially during frequent revisions in the policy rates as experienced by the world economy post COVID crisis. Besides RBI Repo, MSF, Reverse Repo/SDF used by the central bank to manage liquidity under the facility called 'Liquidity Adjustment Facil-

1. The author is grateful to Indranil Bhattacharyya and Sitikantha Pattanaik for valuable comments and suggestions. The usual disclaimer applies.

TABLE 2.1

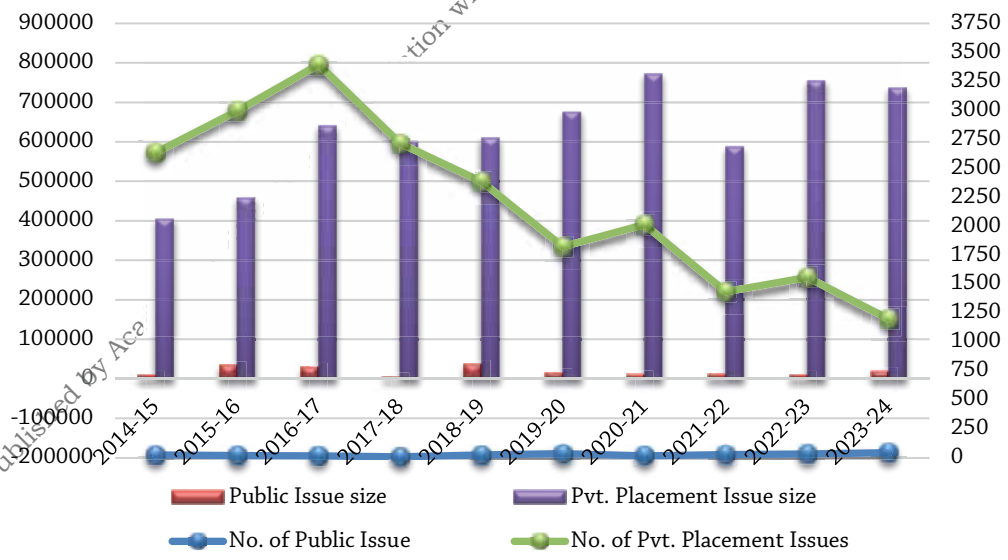
Deficit and Market Borrowings of Central and State Governments

Year	*GDP (At Current Prices) (₹ in Cr.)*	*Gross Fiscal Deficit of GoI (₹ in Cr.)*	*Financing of GFD - Market Borrowings (₹ in Cr.)*	*GFD to GDP (%)*	*GoI Market Borrowing to GFD (%)*
Market Borrowings of Government of India					
2023-24	NA	1786816	1180911	-	66.09
2022-23	27240712	1755319	1108183	6.44	63.13
2021-22	23471012	1584521	704097	6.75	44.44
2020-21	19829927	1818291	1032907	9.17	56.81
2019-20	20103593	933651	473968	4.64	50.76
Market Borrowings of State Government					
2023-24	NA	NA	NA	-	-
2022-23	27240712	882811	689788	3.24	78.14
2021-22	23471012	883335	601289	3.76	68.07
2020-21	19829927	804574	663105	4.06	82.42
2019-20	20103593	524710	497410	2.61	94.80

Source: Handbook of Statistics on Indian Economy, RBI.

FIGURE 2.1

Primary Issuance of NCDs in India (in ₹ Cr.)



Data Source: SEBI Handbook of Statistics. Figure by Author.

ity (LAF)', the Indian money market primarily consists of a few products, viz., Triparty Repo (TREPS); Market Repo; Call Money, Notice Money, and Term Money. Other money market products used for liquidity management and/or short-term investments include: Treasury Bills (T-bills), Certificate of Deposits (CDs), and Commercial Papers (CPs). Table 2.2 depicts the highest popularity of TREPS, with around 70% market share, followed by Market Repo, with around 28% market share, and Call, with the remaining 2% market share (CCIL, 2024a).

TABLE 2.2

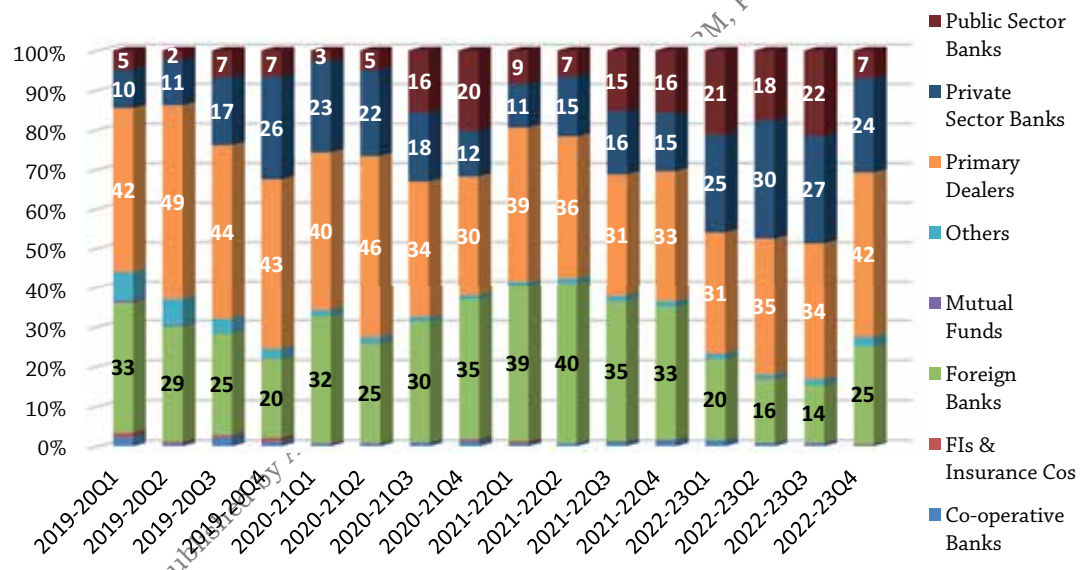
Average Trade Volumes in Money Market

Quarter	*TREPS (%)*	*Repo (%)*	*CALL (%)*	*LAF Window (₹ in Cr.)*	
				Repo + MSF	*REV Repo / SDF*
2021-22Q4	75.8	22.6	1.6	2984	160453
2022-23Q1	74.1	23.8	2.1	397	205135
2022-23Q2	72	25.6	2.4	7686	115628
2022-23Q3	72.5	25.5	2	6011	105974
2022-23Q4	68.6	28.9	2.5	3983	111681
2023-24Q1	61.1	36.7	2.2	10322	104790
2023-24Q2	67.1	30.8	2.1	33304	83262
2023-24Q3	69	28.8	2.2	94786	46289
2023-24Q4	66.9	30.9	2.2	29062	65366

Source: CCIL Reports on Debt Markets.

FIGURE 2.2

Category-wise Share in Market Repo Deals (CCIL Settlement Value)



Data Source: CCIL Fact Book; Figure by author.

Further, around 70 to 75% of the transactions in the money market are attributed to the most popular overnight products, and the remaining 25 to 30% of the trade volume is captured by the notice money segment (2 to 14 Days). The term money segment (15 Days and above till 1 year) of the Indian money market is historically illiquid, with an average trade volume of less than 1% share.

As far as the active players in the Indian money market are concerned, the repo market is primarily dominated by the PDs, only through LAF (Reverse repo/SDF market is primarily dominated by Mutual Funds), followed by the Foreign Banks, and thereafter Private and Public Sector Banks (CCIL, 2024d), as exhibited in Figure 2.2. The figure capturing category-wise share in Reverse Repo/SDF deals is not presented due to space constraints.

TABLE 2.3

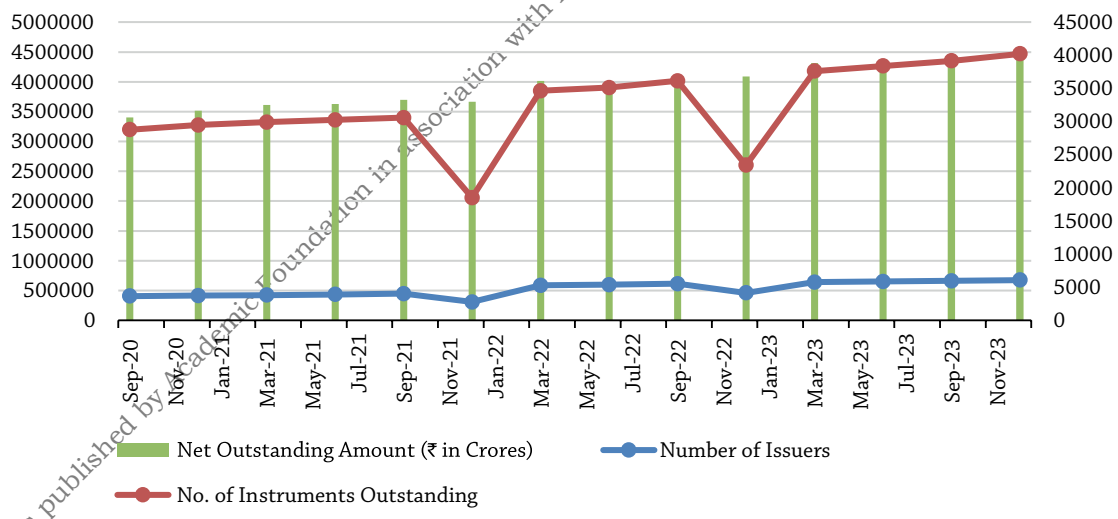
Primary Market for Government Securities in India

	Issuance Summary of Government Securities in India								
Period	*Issuance of Central Government Securities*						*Issuance of SDLs*		
	Uniform Price (Nos)	*Multiple Price (Nos)*	*Total (Nos)*	*Notified Amount (INR Cr.)*	*Gross Issuance (INR Cr.)*	*Average Weekly Issuance (INR Cr.)*	*SDLs Auctioned (Nos)*	*Gross Issuance (INR Cr.)*	*Average Weekly Issuance (INR Cr.)*
FY20	0	194	194	710000	710000	16512	636	634521	12000
FY21	0	175	175	1324000	1370324	27966	742	798816	15400
FY22	0	151	151	1179000	1127382	25622	585	701626	12928
FY23	127	44	171	1437000	1421000	29604	605	758392	14302
Q1-FY24	29	13	42	441000	441000	33923	141	167700	12900
Q2-FY24	30	13	43	447000	447000	34385	166	190322	14640
Q3-FY24	40	18	58	418000	418000	32154	200	245992	18922
Q4-FY24	14	9	23	237000	237000	33857	275	403044	28789

Source: CCIL Quarterly Market Analysis; CCIL SDL Quarterly.

FIGURE 2.3

Corporate Bonds Outstanding in India in Last Few Quarters



Source: SEBI Handbook of Statistics; Figure by author.

2.3. Primary Market for Government and Non-Government Securities

The depth and breadth of the Indian debt market can be well explained by highlighting the Primary and Secondary transactions in money market products and dated securities (government and non-government). The government securities (GOI & SDL) are issued in the primary market through auctions (Uniform and/or Multiple Price). Table 2.3 captures the necessary details regarding the auction of government securities in India over the last half a decade, highlighting the total issuance (CCIL, 2024a; 2024c), and the shifting of preference

from multiple price auctions to uniform price auctions after the financial year 2021-22 (CCIL, 2024a), especially to curb the volatility in the sovereign bond market amid the COVID crisis. The primary market for Treasury Bills (91D, 182D, and 364D) in India is also equally deep, with a total issuance size of ₹3.93 lakhs crores during Q4 FY-2024, around 8% higher than the same just in the previous quarter. As far as the primary market for non-government securities is concerned, even if the same is not as deep as the government securities market (SEBI, 2024a), there is a clear indication of slow but positive growth, in terms of size of issuance/net outstanding value, total number of issuers, and total number of instruments outstanding in the market, as depicted in Figure 2.3.

2.4. Municipal and Green Bond Market

Besides Government (Central and State) securities, and various non-Government securities/debentures issued by various entities (e.g. Banks/PSU/FI; NBFC; corporates as per FIMMDA classification), there is also a reasonable scope for Green Bonds and bonds issued by various Municipalities/Urban Local Bodies (ULB) across the states in India. As in the case of a developed economy, the Government of India also encourages ULBs to fund their various projects by raising finance in the bond market, as a substitute for bank finance and also heavy dependence on direct contributions from the Government (Central and/or State) under various schemes. Accordingly, the government has introduced various schemes (e.g. *Atal Mission for Rejuvenation and Urban Transformation: AMRUT*) to incentivize the ULBs to participate in the bond market in raising the required funds, that not only enable the ULBs to fund their important projects at a relatively cheaper cost (CWS, 2024), subject to the fulfilment of certain criteria, but also reduce their over-dependence on the government and the uncertainty of successful and timely completion of important projects.

Similarly, in the era of sustainable and green finance, the market for Green Bonds has gained tremendous importance worldwide. Various entities (public and private) can issue Green Bonds to finance green projects. Even if the market for Municipal and Green Bonds in India is now at a nascent stage, the economy

TABLE 2.4

Outstanding Market for Municipal and Green Bonds in India

Outstanding Market for Municipal and Green Bonds in India								
Year	*No. of Issue*		*Issuance Amount (₹ in Cr.)*		*Avg. Tenor (Years)*		*Avg. Coupon (%)*	
	Municipal Bond	*Green Bond*	*Municipal Bond*	*Green Bond*	*Municipal Bond*	*Green Bond*	*Municipal Bond*	*Green Bond*
2017	1	1	200	667	10.00	7.00	7.59	7.59
2018	5	1	790	180	10.00	5.00	9.42	8.74
2019	3	2	500	865	6.67	10.00	9.20	8.49
2020	1	0	200	0	7.00		8.50	
2021	1	7	150	1387	7.00	5.16	8.10	6.72
2022	1	5	100	1935	5.00	2.20	7.15	6.93
2023	2	2	444	794	5.80	5.40	8.20	8.14
2024 #	1	2	200	300	5.00	5.00	7.90	7.90
Total	15	20	2584	6128	7.06	5.68	8.26	7.79
	(11) *	(19) *						

* Total No. of Issuers (Municipalities and/or Corporates) raised money so far from the Bond Market.

\# Till March 6, 2024.

Data Source: SEBI Website; Table by author.

is expected to experience a slow but positive growth (SEBI, 2024a) in this segment which is in line with the government's long-term expectation of sustainable growth of the Indian economy. Table 2.4 summarises the outstanding market for Green (Corporate) and Municipal bonds in India, highlighting year-wise and the total number of municipalities and/or corporates who stepped forward to raise funds from the market; size and tenor/maturity of such issuance; and also the cost of financing (i.e., the Coupon Rate). It is exhibited that the bonds are issued with an average tenor of 6 to 7 years, and at an average interest cost of 7.75 to 8.25% per annum. Besides the market for green bonds issued by corporates, the Sovereign Green Bond (SGrB) market in India has also gained importance over the last few years (from around INR 17,000 crores during 2022-23 to a budgeted estimate of INR 22,000 crores in FY 2023-24).

2.5. Basel III Additional Tier 1 Bond Market

The majority of the bond issuance is eligible to be considered as the Tier II capital in the issuers' books of accounts. But as per the Basel and RBI capital adequacy norms, commercial banks, in order to fulfil their Basel III capital requirements, are eligible to issue a special type of securities, known as Basel III compliant or Additional Tier 1 (AT-1) bond. Funds raised through these instruments are eligible to be considered to fulfil the Basel III Tier I capital requirements. These bonds are generally perpetual in nature, attract a higher risk for the investors due to the clause of partial/full write-offs in the value of their investments, and therefore offer relatively higher returns. There is a very high scope for this segment of the Indian bond market to develop, allowing the commercial banks to raise necessary regulatory capital, at a reasonable cost on one hand, and creating a prospect for

TABLE 2.5

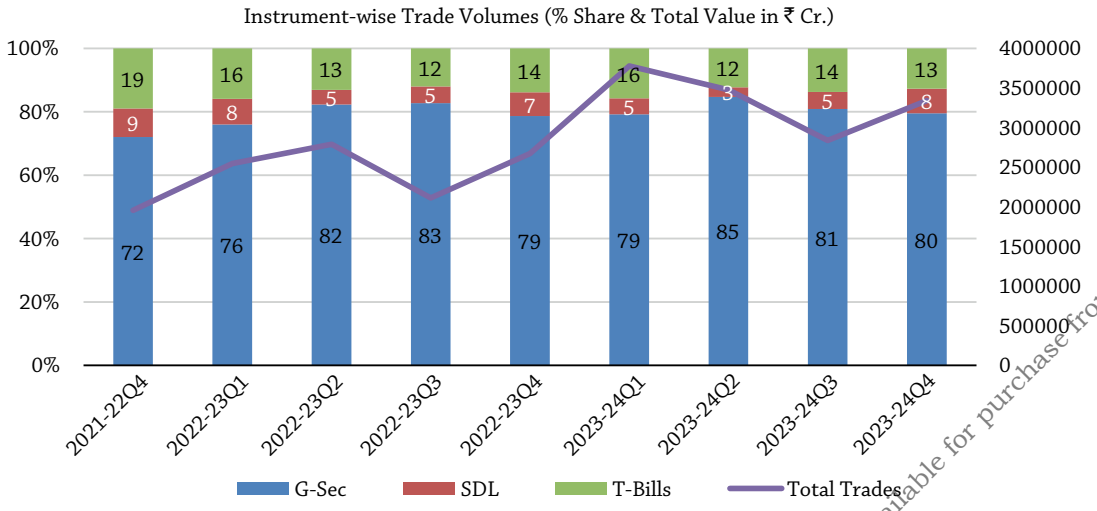
Outstanding Basel III Additional Tier 1 Bonds Issued by SCBs in India as of March 2024

Outstanding Basel III / AT-1 Bonds in India					
Scheduled Commercial Banks	*No. of Issuance*	*Total Size of Issuance (INR Cr.)*	*Avg. Coupon*	*Avg. Age of All Issuance*	*Credit Rating*
Bank of Baroda	10	12,355	8.31%	3.37	AA+
Bank of India	3	2,852	8.97%	2.68	AA
Bank of Maharashtra	3	1,880	8.74%	1.80	AA
Canara Bank	11	13,839	8.41%	3.05	AA+
Central Bank of India	1	0	NA	15.19	AA+
HDFC Bank Limited	1	3,000	7.84%	1.74	AA+
HDFC First Bank Ltd	4	240	9.62%	8.17	AA+
Indian Bank	3	2,000	8.44%	3.47	AA+
J&K Grameen Bank	1	12	NA	9.59	AA+
Punjab National Bank	11	16,192	8.59%	2.29	AA+
State Bank of India	12	50,626	8.03%	2.50	AA+
The J&K Bank Limited	1	1,000	10.50%	5.98	A
The South Indian Bank Ltd	1	500	13.75%	4.37	A
Union Bank of India	9	9,688	8.70%	3.17	AA+, AA
Yes Bank Limited	2	6,600	9.25%	7.05	NA, D
Total Outstanding AT-1 Bonds	73	1,20,784	8.61%	3.54	AA+ / AA / A

Source: Bloomberg; Table by author.

FIGURE 2.4

Instrument-wise Trade Volumes in Government Instruments (% Share)



Source: CCIL Quarterly Market Analytics; Figure by author.

the institutional investors (say Mutual Funds) to enjoy a good margin over similar investment options (i.e., investment in Tier II bank bonds), without a practically very high risk on the other. Table 2.5 summarises the outstanding issuance of Basel III AT-1 bonds issued by scheduled commercial banks in India. As exhibited in the table, the majority of the issuers belong to the Public Sector with a credit rating of AA+, and therefore are expected to remain highly creditworthy under normal market conditions, allowing bond issuers/banks to raise additional capital (of around INR 1.21 lakh crores, total volume of all outstanding issuance of AT-1 bonds) at a reasonable interest cost of around 8.61% per annum (average coupon of all outstanding issuance).

2.6. Secondary Market for Government and Non-Government Securities

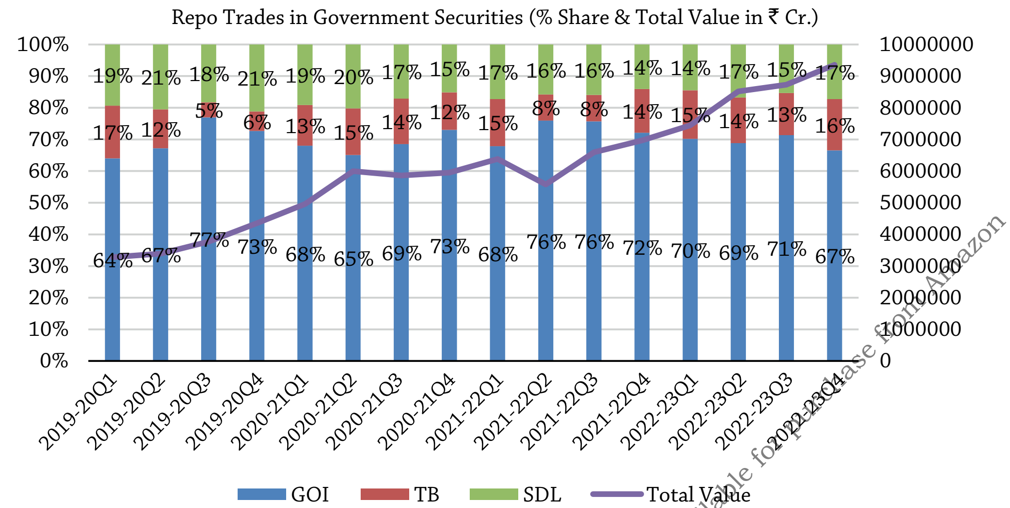
The secondary debt market in India, even for government securities, is not as deep/liquid as the primary market, both for outright as well as repo deals. Even if the total volume for outright trade keeps fluctuating over the quarters, as exhibited in Figure 2.4, there is a consistent growth in the total volume of repo (both RBI Repo under LAF and Market Repo) trades, as depicted in Figure 2.5.

Further, if the instrument-wise trade volume is taken into consideration, central government securities capture the major share (around 80% for outright trades, and 70% for repo trades), followed by T-bills for outright trades and SDL for repo deals (with respective share of 14-15% and 15-20%), as exhibited in Figure 2.4 and Figure 2.5. Out of all outstanding government securities of various tenors (5 to 50 years), securities within the maturity range of 7 to 10 years are the most liquid, capturing more than 50% of the secondary market trades in government securities.

Unlike the equity market, the secondary debt market in India is primarily dominated by institutional players. Among various institutional players, private sector banks capture the major share (around 28% in Q4 FY24) in combined participation in outright deals, followed by foreign banks (21%), PDs (17%), public sector banks (13%), Mutual Funds (9%), as exhibited in Figure 2.6. Similar to the combined percentage share (around 50%) of SCBs in secondary market trading, they continue to be the major owner of government securities (37%, 34%, and 54% respectively in GOI, SDL, and T-bills dur-

FIGURE 2.5

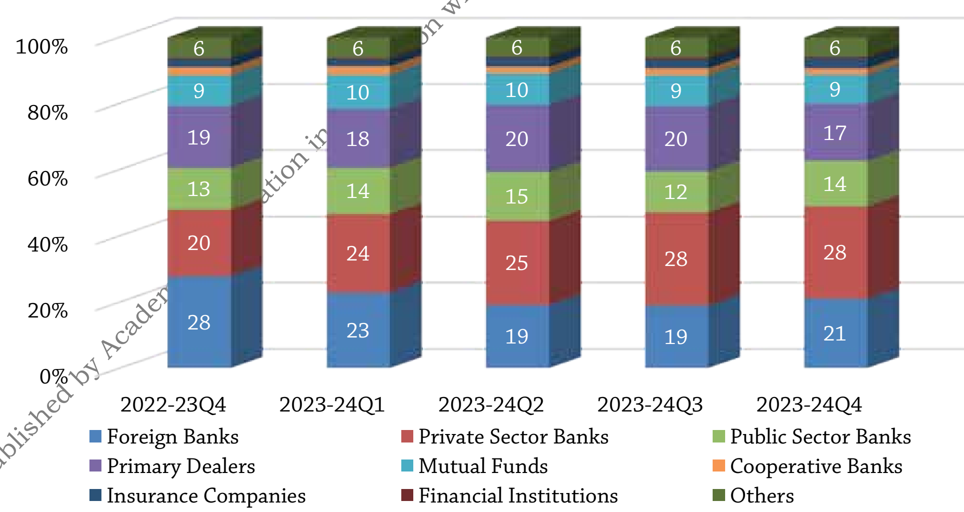
Repo Trades (Settled by CCIL) in Government Securities



Source: CCIL Fact Book; Figure by author.

FIGURE 2.6

Combined (Buy & Sale) Participation in Outright Trades in G-Sec. (%)



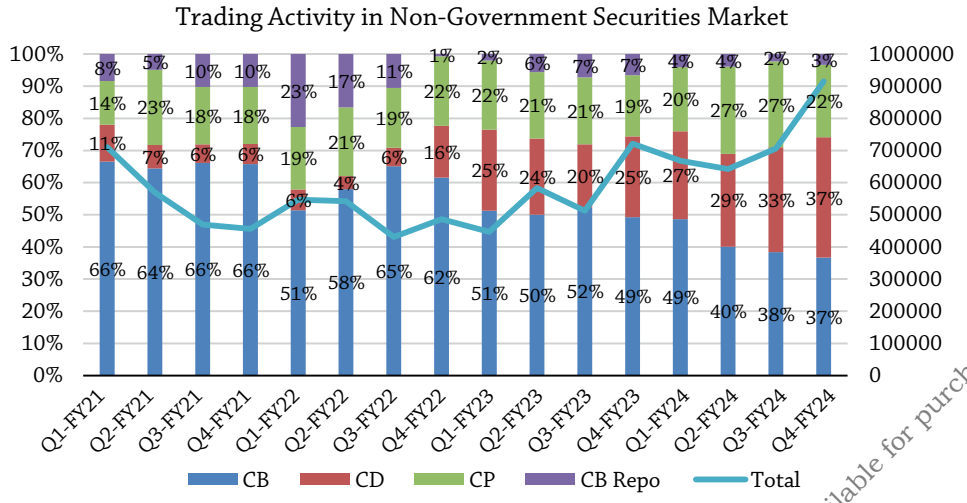
Source: CCIL Fact Book; Figure by author.

ing the year 2023), followed by insurance companies (primarily in GOI and SDL with around 25-30% each), provident funds (majorly in SDL with around 20%), and mutual funds (primarily in T-Bill with around 15%). These figures highlight the dominance of a few institutions in the Indian debt market.

Trading (Outright and Repo) in the secondary market for non-government instruments (viz. Corporate Bonds/Debentures, Certificate of Deposits, and Commercial Papers) is relatively very illiquid and volatile (CCIL, 2024b), with the majority but decreasing share (66% in Q1

FIGURE 2.7

Trading Activity in Corporate Debt Market (% Share & Total Value in ₹ Cr.)



Source: CCIL *Debt Market Quarterly*; Figure by author.

FY21 to 37% in Q4-FY24) of corporate bonds, and an increasing (11% in Q1-FY21 to 37% in Q4-FY24) share of CDs. Corporate Bond repo (only for Market Repo) is yet to be popular in India, with a small share of 3% in Q4-FY24, as depicted in Figure 2.7.

2.7. Prevailing Interest Rate Scenarios (India vs Global Market)

The interest rate/yield, being the most important factor in the debt/bond market, plays a very crucial role in the overall functioning/development of the debt market (Money vs. Securities; G-Sec vs. Non-G-sec, Primary vs. Secondary). To control increasing inflationary pressure after the pandemic, major central banks (including RBI) began to raise policy rates from the first quarter of FY 2022-23 (RBI, 2022). There was a partial/full pause in rate hikes, for many countries, in FY 2023-24 (RBI, 2023a). However, the central bank policy stance of 'withdrawal of accommmodation' has been retained, so far.

Even if the direction of interest rate movements consistently remains positive across the globe, the magnitude of such changes in interest rates and bond yields are found to be different among countries, over the period (sample period studied: January 2020 to April 2024), depending upon their prevailing economic/social/political conditions and largely the way the respective central government and central banks managed the liquidity crisis during the pandemic. Accordingly, the upward movements of interest rates over the period, especially the short-term rates, in developed economies (e.g., USA and UK) are found to be exorbitantly significant, in comparison with a similar situation in emerging economies like India that have succeeded in managing the liquidity crisis well, avoiding too much injection of additional liquidity to manage the prevailing adverse economic condition during the pandemic. The prevailing interest rate scenarios during pre- and post-pandemic periods in the developed vs. emerging economies are exhibited in Table 2.6, clearly stating the sharp movement of short (long) term yield (maximum yield during the year) from 0.09 (2.36) percent and 0.33 (1.21) percent in 2021 to 5.63 (4.98) percent and 5.12 (4.67) percent in 2023, respectively in the US and UK. These estimates clearly state the sharp (around 60 times in the US, and 15 times in the UK) hikes in the short-term (3-months) treasury yield within a period of two years. The medium-term (10-year) treasury yields were

found to double (from 2.36 to 4.98%) in the US and increase by around four times (from 1.21 to 4.67%) in the UK. The picture in India has been significantly different during the same period. The short-term (3-months) maximum GOI T-bill yield has increased from 3.83% in 2021 to 7.06% in 2023 (around 1.8 times higher), whereas the medium-term (10-year) risk-free rate has changed from 6.52% to 7.45% (just a hike of 93 basis points) during the same period. Further, the interlinkages within and across the economies, under various interest rate scenarios, can be captured through the historical co-movement of interest rates/bond yields (short and medium-term) among developed and emerging economies, as depicted in Figure 2.8. As expected, the degree of such co-movement is found to be positive and very strong, even though the RBI monetary policies were found to be independent, not following the policies moves of the Federal Reserve completely, especially in the short-term segment (within and across the national border), as supported by both correlation estimates and graphical presentations, during the period of rising interest rates (2022-23).

These indicate the overall impact of such a shift in the interest rate scenarios on the debt (money and securities) market and therefore on the cost (interest cost) of funding and value of assets/investments respectively for the borrowers and investors in advanced economies. Such interest rate movements are expected to cause an erosion in the value of the assets/wealth (say investment in debt products) by around 5% in short-term (1 year), whereas to an extent of 30% in the medium-term (10 years), and by as large as 60% in long-term (30 years) assets/investments. These facts are duly supported by the huge erosion in the value of public wealth caused by such an unusual level of interest rate and ALM risk, as experienced by the fund managers with long-term liabilities (e.g., provident fund, pension fund), or commercial banks (like Silicon Valley Bank) with huge asset liability mismatches.

2.8. Other Major Developments in the Indian Bond Market

One of the major developments impacting the debt market worldwide over the last few years is the consistent revision in central bank policy

TABLE 2.6

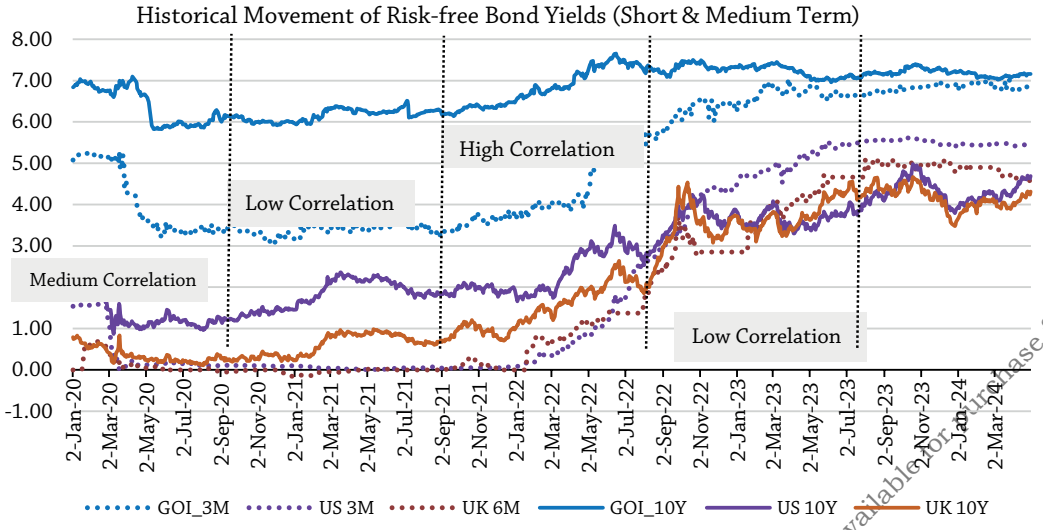
Summary Statistics of Short and Medium-Term Treasury Yields

Summary Statistics	*GOI 3M*	*US 3M*	*UK 6M*	*GOI 10Y*	*US 10Y*	*UK 10Y*	*GOI 3M*	*US 3M*	*UK 6M*	*GOI 10Y*	*US 10Y*	*UK 10Y*
	Period: 2020 – 24; Total Obs. = 991						Year: 2022; Total Obs. = 225					
Mean	4.97	2.21	1.81	6.76	2.68	2.04	5.23	2.10	1.71	7.18	2.95	2.42
Maximum	7.06	5.63	5.12	7.66	4.98	4.67	6.57	4.46	3.72	7.66	4.24	4.54
Std. Deviation	1.49	2.34	2.02	0.53	1.14	1.59	0.98	1.53	0.99	0.28	0.71	0.91
Range	4.03	5.63	5.27	1.83	4.11	4.55	2.93	4.38	3.72	1.09	2.58	3.45
	Year: 2020; Total Obs. = 234						Year: 2023; Total Obs. = 230					
Mean	3.83	0.36	0.08	6.27	1.35	0.33	6.74	5.28	4.46	7.21	3.97	4.00
Maximum	5.31	1.59	0.69	7.10	2.21	0.83	**7.06**	**5.63**	**5.12**	**7.45**	**4.98**	**4.67**
Std. Deviation	0.78	0.53	0.20	0.41	0.31	0.16	0.13	0.33	0.61	0.12	0.42	0.41
Range	2.27	1.59	0.84	1.27	1.34	0.72	0.80	1.11	2.27	0.49	1.68	1.56
	Year: 2021; Total Obs. = 227						Year: 2024; Total Obs. = 75					
Mean	3.48	0.05	0.01	6.26	1.98	0.79	6.88	5.45	4.79	7.12	4.25	4.02
Maximum	**3.83**	**0.09**	**0.33**	**6.52**	**2.36**	**1.21**	7.02	5.49	4.99	7.24	4.70	4.32
Std. Deviation	0.13	0.02	0.08	0.12	0.19	0.20	0.07	0.02	0.13	0.05	0.21	0.14
Range	0.73	0.08	0.49	0.58	0.90	0.98	0.28	0.08	0.44	0.22	0.83	0.64

Source: Central bank websites of respective economies; Table is author's own creation.

FIGURE 2.8

Historical Movements of Risk-free Bond Yields (India vs. Developed Economies)



Source: FBIL, US Federal Reserve, Bank of England; Figure by author.

rates and therefore on the bond yields (short, medium, and long term) after the onset of the pandemic, and thereafter to manage the post-pandemic rising inflationary situation across the globe. Therefore, since 2022, debt market interest rates have not only reflected the rise in policy rates across the globe but also the rising inflation premium as most developed countries saw inflation surging to historical peaks much beyond their target rates, thereby unhinging inflation expectations. Indian debt market under such interest rate scenarios is broadly discussed in the previous sections. Besides significant movements in bond yields, the Indian debt market has also experienced a few other developments in the last couple of years that are expected to bring significant changes in its landscape and also to its important stakeholders in the debt market. A few such developments and their possible impact on the Indian bond market are summarised in the following section.

2.8.1. *Inclusion of Indian Bonds in Global Bond Indices*

The announcement to include Indian government bonds in two prominent global indices, viz., JPMorgan Government Bond Index-Emerging Markets (GBI-EM), and the Bloomberg Emerging Market Local Currency Government Index, seems to be a significant development in the landscape of the Indian bond market.

According to JP Morgan, the share of Indian bonds is expected to reach the maximum of 10%. The eligible bonds will be included over ten months through March 31, 2025, with a gradual inclusion of 1% weight per month. This initiative will lead to a huge inflow of dollars into India's rupee-denominated government enhancement of the demand for government securities in India, reducing the risk-free yield, and also supporting the Indian rupee, i.e., appreciating the value of India's local currency against foreign currencies. India's bond market is expected to see inflows 'upwards of USD 40 billion from the time of announcement to the end of the scale-in period' (*Goldman Sachs Report*). The inclusion of Indian bonds in the global index would possibly help the country to achieve the goal of becoming a USD 5 trillion economy by 2030 and help Asia's third-largest economy to integrate with the global markets.

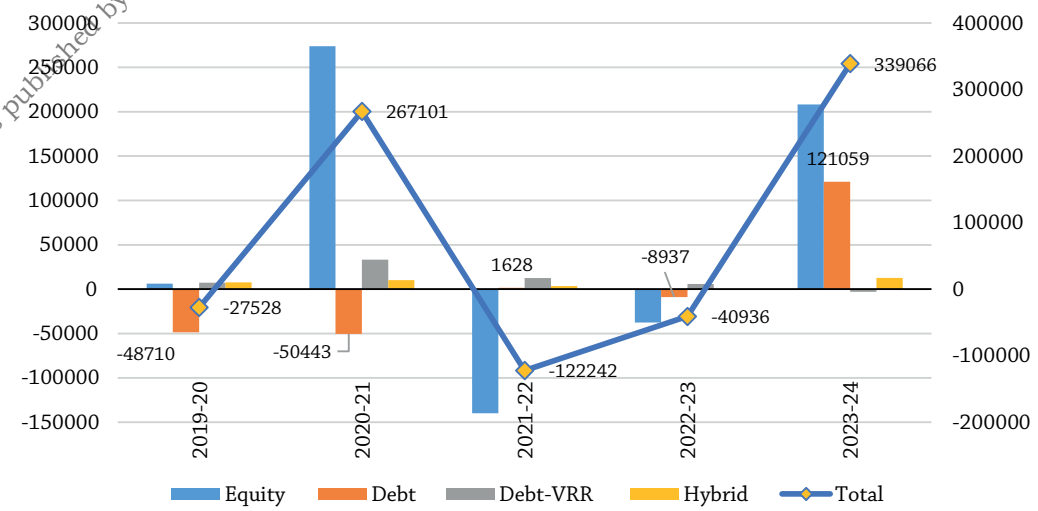
Assuming a fiscal consolidation by the Government of India and therefore no or fewer chances for a significant increase in the government's market borrowing, the additional demand for government securities coming from foreign investors, leading to stable long-term global investments, would possibly boost credit growth in the country. Banks being the largest investors in the government securities market in India would expect to reduce their exposure in this market, and increase the size of their lending book, which will further ensure infrastructure developments, employment growth, and thereby an overall growth of the Indian economy.

Two important initiatives taken by the Reserve Bank of India, in consultation with the GoI and other regulators, are *The Voluntary Retention Route* (VRR) (RBI, 2019), and the *Fully Accessible Route* (FAR) (RBI, 2020). The VRR enables Foreign Portfolio Investors (FPI) to invest in the Indian debt market, free from the macro-prudential and other regulatory norms applicable to FPI investments in debt markets, provided FPIs voluntarily commit to retain a required minimum percentage of their investments in India for a certain period. Similarly, FAR is a channel that enables eligible non-residents to invest in specified Government of India-dated securities, without being subject to any investment ceilings. The introduction of these innovative channels, paving the way for foreign investors to access Indian bond markets, is instrumental for Indian bonds getting included in the global bond indices.

The impact of all these developments on the volume of foreign investments in the Indian financial market is exhibited in Figure 2.9, capturing net investments of FPIs in Equity, Debt (both Open and VRR channel), and Hybrid instruments (SEBI, 2024b). The figure supports the claim of a significant increase in foreign investments in the Indian debt market, if not through the VRR channel, possibly due to the investment restriction. As per the data on Debt Utilization Status as of June 6, 2024, as depicted in Table 2.7, the General Limits utilized by the FPIs are 24.61, 4.33, and 3.19% respectively for Central Government securities (General category), Central Government securities (Long-term category), and State Government securities (General category). However, as of the same date, FPI's total investments in various government securities under the VRR channel stood at around INR 1.81 lakh crores (72% of the Limit utilized under the VRR route). As far as the security holdings under the FAR route are concerned, the total holdings of FPIs as of June 6, 2024, stood at around INR 1.74 lac crores (4.38% of the total outstanding posi-

FIGURE 2.9

Net Investments (INR Cr.) of FPI in Indian Financial Market



Source: SEBI, NSDL; Figure by author.

TABLE 2.7

Debt Utilization Status by FPIs in India under Various Routes

Debt Utilization Status by FPIs in India under various Routes as on June 06, 2024:				
General Limit:				
Instrument Type	*Eligible Foreign Investors*	*Upper Limit (INR Cr)*	*Total Investment (INR Cr)*	*% of Limits Utilised*
Central Government Securities	General	2,68,437	66,070	24.61%
Central Government Securities	Long Term	1,37,437	5,948	4.33%
State Government Securities	General	1,05,290	3,360	3.19%
State Government Securities	Long Term	7,100	0	0.00%
Corporate Bonds		7,15,687	1,13,150	15.81%
Limit for Debt Investment in Voluntary Retention Route (VRR):				
Total Investment under VRR	NA	2,50,000	1,80,916	72.37%
Limit for Debt Investment in Fully Accessible Route (FAR):				
		Total Outstanding		% Holding
Total Investment under FAR	NA	39,80,168	1,74,159	4.38%

Source: NSDL Website; Table is author's own creation.

tion of eligible central government securities). Total investments of FPIs in corporate bonds, as of June 6, 2024, stood at around INR 1.13 lakh crores, 15.81% of the given limits. These estimates highlight the increasing presence of foreign investors in the Indian debt market, both under standard and special routes.

2.8.2. *Implementation of Revised SEBI Valuation Norms for AT-1 Bonds*

Even if the commercial banks found it quite useful to raise the regulatory capital from the market by way of issuing AT-1 bonds, as seen from the increasing total size of AT-1 issuance over the years (from INR 3,062 crores in FY-15 to INR 31,894 crores in FY-23), the market got largely impacted after the YES Bank crisis in early 2020, followed by stricter SEBI norms for the valuation of AT-1 bonds, primarily applicable to Mutual Funds. Since AT-1 bonds are perpetual in nature, mutual fund houses, the largest investor in AT-1 bond market in India, as per the revised SEBI norms, are required to consider 100 years as the *Deemed Residual Maturity* of such bonds (against the earlier norms of considering the time/period till the first call date as the deemed residual maturity, generally 10 years at the time of issuance), to be fully implemented from March 31 onwards (AMFI, 2021). These revised valuation norms seem to have a significant impact on the marked-to-market (MTM) of a large chunk of their investments, resulting in a substantial fall in the net asset value (NAV) of the concerned funds.

In light of these developments, asset managers are prompted to stay away from these hybrid products, resulting in a decline of more than 90% (falling from around INR 25000 crores in January 2020 to around INR 2100 crores in December 2023, as per CRISIL estimates) of mutual funds' investments in AT-1 bonds. This has resulted in Indian commercial banks facing pressure to augment regulatory capital amid persistently strong credit growth in the economy over the past few years. Besides the Yes Bank crisis, the AT-1 bond market worldwide was jolted after the announcement of the complete write-off of Credit Suisse's AT-1 capital of CHF 16 billion. Further, the matter worsened after the Swiss Financial Market Supervisory Authority's (FINMA) action of disregarding the traditionally respected capital hierarchy, where the shareholders received a small residual value

rather than AT1 holders. Even if the regulatory bodies in other developed markets clarified to maintain the traditional capital hierarchy (i.e., writing off equity before the debt even AT-1), such a measure has affected the investors' confidence and perception of the AT-1 bonds worldwide. Commercial banks in India have raised around INR 17,500 crores through the AT-1 bonds in FY24, almost half the amount raised in FY23 (*data from: Bloomberg Database, Business Standard*), as depicted earlier in Table 2.5.

2.8.3. Government Initiatives to Develop Green and Municipal Bond Markets

In the Union Budget 2022-23, as a part of the overall market borrowings during FY 2022-23, the Government announced the issuance of sovereign green bonds (SGrB) to mobilize resources to develop green infrastructures, which will help in reducing the carbon intensity of the economy. Accordingly, in January 2023, the central government had raised INR 8,000 crores by issuing its maiden Sovereign Green Bond, NEW GOI SGrB 2033, and NEW GOI SGrB 2028, offering a cut-off yield of 7.29% and 7.10% respectively. The central government issued sovereign green bonds for an amount aggregating to INR 20,000 crore during 2023-24 (RBI, 2024a). The government has further included this green bonds in the list of eligible securities for the FPIs to invest under the FAR route.

The central government is likely to raise about INR 32,000 crore (*Expenditure Profile, Union Budget, 2024-25*) by issuing green bonds as a part of their borrowing calendar for the financial year 2024-25. Out of the Gross Market borrowing of INR 14.13 lakh crore projected for FY 2024-25 in the Union Budget, INR 7.50 lakh crore (53.08%) is planned to be borrowed in the first half through dated securities, including INR 12,000 crore through the issuance of Sovereign Green Bonds (SGrBs) (PIB, 2024). As a part of the original borrowing plan through issuing 10-year SGrB in two tranches during the first half of the current FY, even if the RBI intended to raise INR 6000 crore in May 2024, receiving bids between 7% and 7.06% in the auction (with a 10-year benchmark yield of 6.99%), the central bank cancelled the auction, as traders refused to pay the green bond premium (Greenium). It is expected to be prudent to raise money via the green bonds route, only if it provides a cost advantage to the issuer over similar issues of conventional bonds. Accordingly, if a conventional 10-year GOI bond offers a yield of 7%, a similar green bond issued by the GOI should ideally offer a yield of not more than 6.7-6.8% (as per market reports).

To deepen the municipal bond market in India, the central government in its budget for the FY 2023-24 has stated to incentivize the ULBs to improve their creditworthiness to successfully go for market borrowing at a reasonable and competitive interest cost. As a part of this initiative, in February 2024, the Vadodara Municipal Corporation initiated India and Asia's first Certified Green Muni Bond for Sustainable Water Infrastructure. Despite a series of initiatives taken to develop the municipal bond market in India, the breadth and depth of this market is relatively tiny compared to the G-Sec (GOI & SDL) segment. There may be several challenges faced by the ULBs to successfully raise money from the bond market, such as: India's federal structure that imposes many restrictions to ULBs in terms of borrowing amount, purpose, term, required approvals, etc.; high cost (if not Interest Cost but Transaction Cost); lack of transparency in the municipal system with an opaque governance structure; etc. (Ghose et al., 2024).

2.8.4. Reversion to Multiple Price Auctions for Government Securities

Even if the system of multiple price auctions got shifted to uniform price auctions after the financial year 2021-22, especially to curb the volatility in the sovereign bond market amid the COVID crisis, RBI has decided to revert to the earlier practice of following the multiple-price method for all its G-Sec auctions from the financial year 2024-25.

Under the system of multiple price auctions, the bidders need to take a balanced view to get the benefit of the right price, otherwise they may carry the risk of costly allotment, known as the 'Winner's Curse', i.e., getting confirmed allotment but at a higher price (when they bid at a lower rate). This shift is expected to improve the liquidity conditions in the securities market, discouraging lazy trading practices, and rewarding the intelligence of market makers.

2.8.5. Revised Norms for Classification and Valuation of Investments for Commercial Banks

Being the largest investor in the Indian bond market (G-Sec and Corporate Bonds), the nature of debt market investments, and activity in the debt market of scheduled commercial banks in India are largely driven by the RBI's norms on Classification and Valuation of Investments, revised from time to time. RBI's recent (September 2023) circular on this matter, implemented from April 1, 2024, probably has a significant impact on the nature and composition of banks' investment and trading portfolios. Withdrawal of restrictions to book MTM profit on the trading book (HFT) through the P&L (RBI, 2023b), would motivate traders for larger trading activities that will help to deepen the secondary bond market. Similarly, the withdrawal of upper limit for Held Till Maturity (HTM) investments, and also the restriction to classify non-SLR investments in the HTM category is expected to incentivize commercial banks to increase their participation in the primary and secondary market for non-government securities, resulting in the deepening of the corporate bond market in India.

2.9. Conclusions

Indian debt market, which offers a wide range of vanilla and innovative/structured products, with a reasonably deep volume, especially in the primary market, is very important for a developed and robust financial system in India. With consistent initiatives and regular reforms by the central government and other regulatory bodies (RBI & SEBI), and with a strong presence of various important and active stakeholders, the Indian debt market has experienced slow but consistent growth over the years and is ahead of the debt market in many economies worldwide. Even if the Indian debt market is primarily dominated by the government securities, the market for corporate bonds/debentures is no longer a segment to overlook. As in the case of other economies, the Indian debt market has also witnessed a series of market and regulatory developments over the years, and also managed to get integrated with the world market, making it a destination for international players, thereby fostering faster growth of the Indian economy.

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3

Retail Lending

Linkages, Interconnectedness, and Challenges

Elizabeth James[1]

3.1. Introduction

"Slow and steady and on a winning streak" – this phrase appropriately describes the growth trajectory for personal loans since 2008. From being 22.5% of Non-Food Credit (NFC) in 2008 to an average of 18.3% between 2009 to 2017, personal loans from 2018 had a smooth glide upwards leading to a share of 32.5% by March 2024. Within the personal loans, unsecured loans and secured loans grew at a CAGR of 17.1% and 15.1% respectively from 2008 to 2024. And this growth culminated into a 32.8% share of unsecured loan in total personal loans in 2023 and 31.2% in 2024. The reason for the growth in personal loans can be attributed to many factors; among the most important are the ease with which the loans can be availed by the borrowers, disposable surplus lying with the borrower, game changing role played by the fintech, and the synergistic impact of bank's association with NBFCs. NBFCs standalone and with its co-lending arrangements with banks have been catering to personal loan segment in competition with banks leading to disbursement of small ticket size loans as low as ₹10,000[2]. The catalyst for the reach of the NBFCs and Fintech companies resulting in increased lending can be remotely connected to the success of JAM (Jan Dhan, Aadhaar, Mobile) scheme as well. The magnitude of increased lending is to the extent that it has surpassed the CAGR of NFC which was 12.6% (2008-2024) to 18.4%. But the icing on the cake is that delinquency levels in this segment is still stable. Though the current scenario can be equated with the famous lines from Robert Browning's poem 'Pippa Passes': 'God's in his Heaven/All's right with the world', the regulator RBI wants to thwart any systemic risk due to this unbridled growth, and hence has increased risk weights by 25% on unsecured loans and banks' exposure to NBFCs.

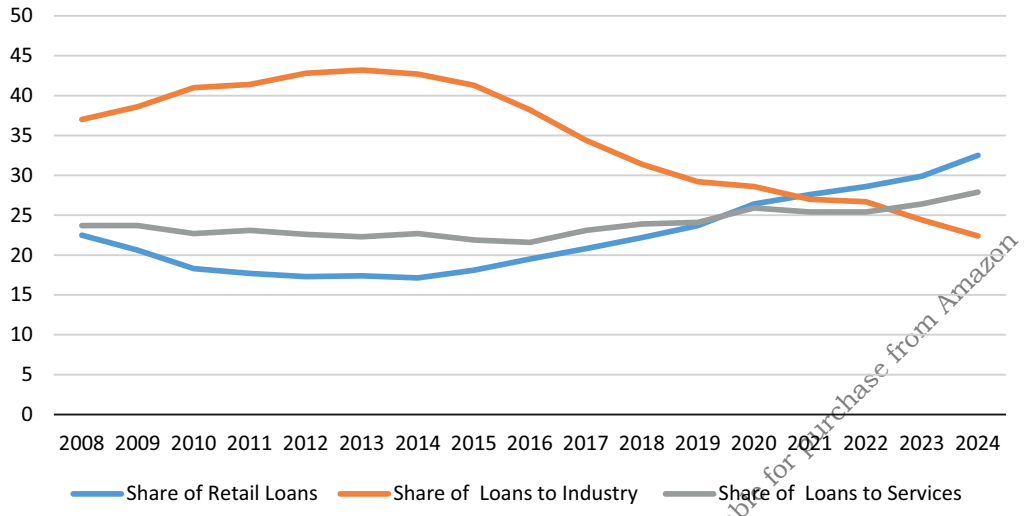
This chapter is organised as follows: Section 3.2 does a deep dive into the growth statistics of personal loans from March 2008 to March 2024. Further, the classification is done under four time zones, viz., the year following the Global Financial Crisis (GFC), the post-crisis period, NPA in corporate loans, the pandemic period and the post-pandemic period. Section 3.3 reviews the literature on growth in personal loans, the success of NBFCs and its linkages with fintech partners, and the impact of consumer loans on growth of the economy. Section 3.4 throws light on the performance of NBFCs, its linkages with Fintechs and the co-lending arrangements with banks. Section 3.5 discusses the contribution of retail lending to economic growth and finally Section 3.6 discusses the colossal challenges in meeting the needs of

1. The author is grateful to Jayant Keskar and Deepak Narang for their valuable comments and suggestions. The usual disclaimer applies.

2. Business Standard, "Fintechs lead small-ticket loans' volume with 77% market share: Study" available at https://www.business-standard.com/industry/news/fintechs-lead-small-ticket-loans-volume-with-77-market-share-study-124031700502_1.htmls (accessed on 7 October 2024).

FIGURE 3.1

Share of Loans to Retail, Industry and Services Sector in Total Non-Food Credit (2008-24)



Source: RBI, Sectoral Deployment of Bank Credit.

the customers followed by key takeaways for retail lending.

3.2. The Growth of Retail Loans

What the RBI brackets as personal loans is what the lay man understands as retail loans. Personal loans shot into limelight in 2007, as the stimulant for the Global Financial Crisis was the falling housing prices in US. The housing bubble served as the cornerstone for the global financial crisis. Since then, how the personal banking portfolio has grown from March 2008 to March 2024 in India has been studied. Further the classification is done under four time zones: the year following the Global Financial Crisis (March 2008 to March 2009), the post-crisis period (March 2009 to March 2013), NPA in corporate loans (March 2013 to March 2019), pandemic period (March 2019 to March 2022) and the post-pandemic period (March 2022 to 2024).[3] As it is evident from the Figure 3.1, banks NFC (Non Food Credit) exposure was always focussed to meet majorly the funding requirement of industry followed by the services sector. Till the year 2013-14, lending to corporates was dominant but later funds to corporates saw a massive decline due to NPA in large borrowers' accounts due to which there was an increased risk aversion by banks in lending to industry. This led to a shift in the lending mindset of banks who changed their strategy of relying on caution than profitability and also the impressive trend of low levels of delinquency in the personal loan portfolio. It will be interesting to find out which sub-sectors of personal loans gathered growth momentum under which year and the reasons. In 2008-09 the maximum growth happened in education loans to the tune of 39.19%. because of GOI (Government of India) laying high priority to secondary technical and higher education (Tilak, 2008). Loans for consumer durables also grew by 16.43%. But advances to individuals against shares and bonds decreased by 43.8%, as the proxy for Indian stock market Sensex, had fallen by 63% in 2008 to under 7,700 due to the global financial crisis.[4] During the years 2009-13 growth momentum was maintained by housing, vehicle, education and other personal loans which averaged to 15%. The period between 2013 to 2019 saw the growth in personal loans mainly due to the rising NPA lev-

3. The first case of Covid-19 was reported in India on January 27, 2020 (Andrews et al., 2020).

4. "India at 75: 16 events that impacted Indian markets between 2003 and 2014", *Business Standard*, August 12, 2022, available at https://www.business-standard.com/article/specials/india-at-75-16-events-that-impacted-indian-markets-between-2003-and-2014-122081100006_1.html (accessed 7 October 2024).

TABLE 3.1

Growth in Personal Loans (2008-24)

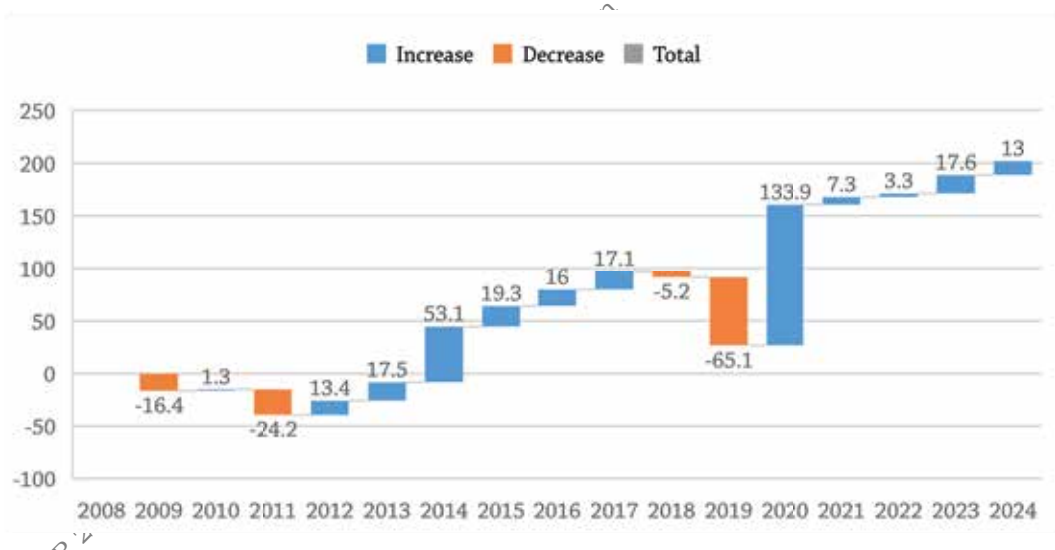
Period	*Full: 2008-24*	*2008-09*	*2009-13*	*2013-19*	*2019-22*	*2022-24*
Consumer Durables	5.7	16.43%	0.6%	-3.2	35.4	17.3
Housing (Including Priority Sector Housing)	15.8%	7.32%	13.1%	17.1	12.7	15
Advances against Fixed Deposits (Including FCNR (B), NRNR Deposits, etc.)	6.6%	8.07%	5.8%	6	-1.3	46.2
Advances to Individuals against Share, Bonds, etc.	4.7%	-43.88%	8.0%	12.9	-1	8.3
Credit Card Outstanding	15.2%	4.76%	-2.9%	23.3	19.2	30.9
Education	11.6%	39.19%	17.8%	5.6	2.7	17.1
Vehicle Loans	15.5%	5.75%	15.7%	17	12	24.8
Other Personal Loans	18.1%	8.99%	13.9%	20.9	17.2	19.6
Gold Loans	33%				44.2	25.9

Source: RBI, Sectoral Deployment of Non-Food Gross Bank Credit.

Note: Data regarding loans against gold jewellery was published by RBI only from 2019 under the revised format in sectoral deployment of non-food gross bank credit.

FIGURE 3.2

Growth in Subcategories of Personal Loans YOY (2008-24)



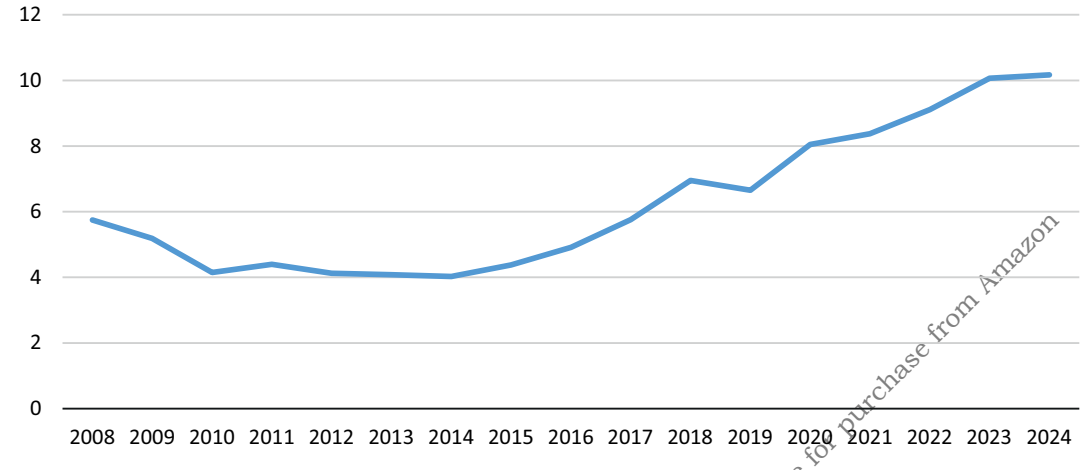
Source: RBI, Sectoral Deployment of Non-Food Gross Bank Credit.

els in the corporate loans (GNPA ratio of PSBs increased from 5% in March 2015 to 14.6% in March 2018). The cumulative effect was positive from 2013 to 2017 as per Figure 3.2. Indian economy had slowed down in 2018-19 due to reduction in private consumption, snail paced increase in fixed investments, and low exports[5]. In 2019 -20 there was a huge increase in con-

5. Business Today, "Slowdown Blues: Indian economy slowed down in FY19 due to decline in private consumption, says govt", May 8, 2019, available at https://www.businesstoday.in/latest/slowdown-blues/story/india-economy-slowed-down-in-fy19-due-to-decline-in-private-consumption-194390-2019-05-03 (accessed on 7 October 2024).

FIGURE 3.3

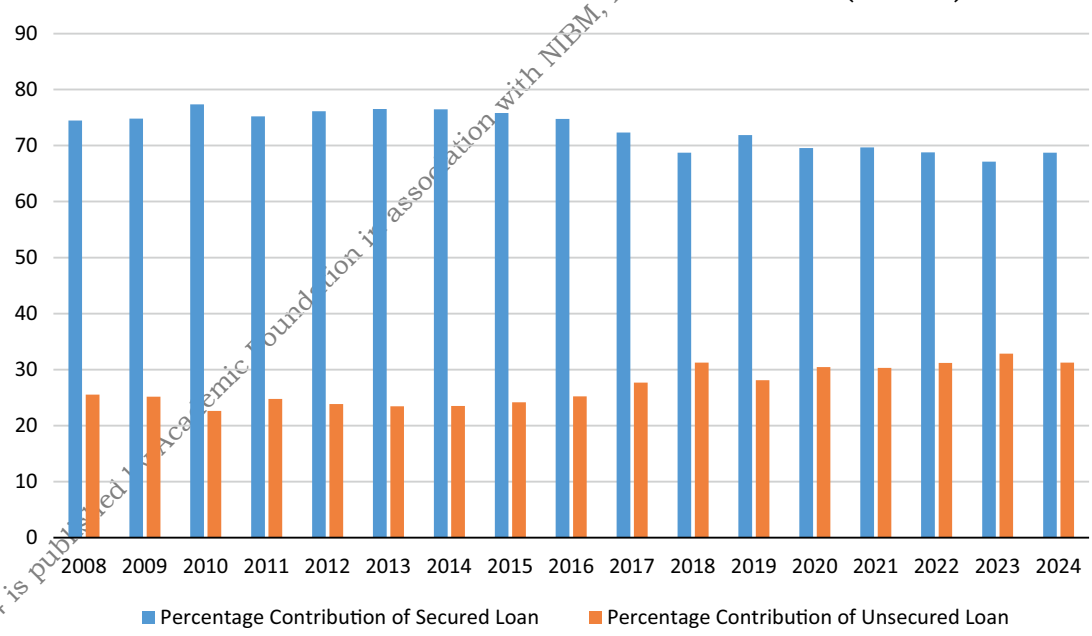
Percentage of Unsecured Personal Loan in Total Non-Food Credit



Source: RBI, Sectoral Deployment of Non-Food Gross Bank Credit.

FIGURE 3.4

Contribution of Secured and Unsecured Loan in Total Personal Loans (2008-24) in Percent



Source: RBI, Sectoral Deployment of Non-Food Gross Bank Credit.

sumer durable loans. There was an increase of 125.7% in gold loans in 2020-21 during COVID period which helped MSME customers manage their operating cycle hence meeting working capital requirements. In 2021 the percentage contribution of industry and personal loans to total lending converged at 27.6%.

Drawing attention back to the major concern of the growth of unsecured loans, it is gaining significance because its share in NFC has risen to 10% (Figure 3.3). To understand the magnitude of the problem, growth of both the secured and unsecured loans should be seen together as in Figure 3.4. There has been precedence when

TABLE 3.2

Percentage Share of Each Type of Personal Loan in Total Personal Loan (2008-24)

Personal Loans	*2008-24*	*2008-09*	*2009-13*	*2013-19*	*2019-22*	*2022-24*
Consumer Durables	0.70	1.7	1.09	0.99	0.50	0.48
Housing (Including Priority Sector Housing)	50.59	49.8	50.7	52.6	50.1	49.6
Advances against Fixed Deposits (Including FCNR (B), NRNR Deposits, etc.)	3.78	8.6	7.5	4.65	2.8	2.6
Advances to Individuals Against Share, Bonds, etc.	0.27	0.6	0.4	0.35	0.22	0.2
Credit Card Outstanding	4.07	5	3.2	3.17	4.3	4.8
Education	3.41	4.5	6.1	4.5	2.74	2.3
Vehicle Loans	11.47	11.12	11.3	11.1	12.1	11.5
Other Personal Loans	24.40	18.6	19.7	22.8	25.4	2.1
Gold Loan Against Jewellery	1.24			0.24	1.8	26.5

Source: RBI, Sectoral Deployment of Non-Food Gross Bank Credit. Data on loans against gold jewellery is available with RBI from 2019 onwards.

the unsecured loan had risen to 30% in the year 2018. Some of the reasons were increase in spending by consumers, increased availability of data, faster disbursements due to use of technology, and Fintech investments in financial institutions[6].

It is evident from Table 3.2 that maximum share of personal loans was always directed towards meeting housing finance requirements. During (2008-24) the chunk of the personal loans has been directed towards financing home loans. Every period it was nearing 50%. After home loans, maximum lending was to other personal loans category which was on an average 22.18% till 2022 but has drastically reduced to 2.1% between 2022 to 2024 thus calming down the apprehensions of the regulator regarding exuberant lending in unsecured loans. Credit card outstanding segment saw a slight increase from 4.3 to 4.8 between 2019 to 2024 again having the unsecured lending under control.

3.3 Literature Review

Retail lending has been the focus of banks since the last decade and it is continuing. Several distinguished, in-depth work has analysed the growth of retail credit. The demand for retail credit (personal loans) has increased due to the demographic shift of fewer households and an ever-expanding middle class, as well as rising income levels (Bag, 2012). The customer is exposed to many players who are ready to accommodate the customer requirements comprehensively. It is clear from the rise of the NBFCs sector in India that the other parts of the financial system—banks, for example—were forced to innovate, enhance quality and efficiency, and provide services at competitive rates with flexible timing (Karunagaran, 2012). The other setoff competitors for banks and NBFCs are the Fintech companies. Innovation has a beneficial effect on financial stability, sug-

6. Bhakta Pratik, Bhalla Tarush, "Fintech lenders may face the brunt of RBI's tightening of capital norms for unsecured lending", Nov 17, 2023, available at https://economictimes.indiatimes.com/tech/technology/fintech-lenders-could-face-the-brunt-of-rbi-move-to-increase-risk-weights-on-unsecured-lending/articleshow/105290289.cms?from=mdr (accessed on 7 October 2024).

gesting that competition is helping banks. The authors discover a negative correlation between financial stability and systemically significant NBFCs. The authors note a negative correlation between cybercrimes and financial stability, which they attribute to banks being exposed to additional risks due to competition from the FinTech sector (Verma and Chakarwarty, 2024). Financial inclusion initiatives have also helped consumers avail loan facilities from banks. The Indian government introduced the Jan-Dhan Yojana, a financial inclusion initiative. The major goal was to get as many individuals as possible connected to banks and make them financially literate so they could make the most of their meager funds. This programme was seen as the new cornerstone of financial inclusion. The goal of PMJDY's launch was to integrate those who are financially excluded into the mainstream development. The rural areas had great success with this approach. Due to their strong presence in rural areas, public sector banks were mostly relied upon (Gupta 2023).

Personal loans also contribute to growth of an economy. One of the factors that make up GDP is population consumption, and one of the things that drive it is retail credit activity. At the macroeconomic level, scholars generally agree that changes in GDP, the unemployment rate, and the amount of debt held by the populace are what drive credit activity and portfolio quality. Conversely, the retail sector's operations have an impact on GDP indirectly through consumption. Thus, these two connections strengthen one another and may cause a downward spiral. A negative GDP change has an impact on portfolio quality and raises the NPL ratio. Furthermore, a larger NPL ratio has a detrimental effect on GDP and causes a further decline in credit activity (Itlija, 2016). Personal loans now account for a gradually rising portion of all non-food lending in the recent past. The personal loans had a (CAGR) of 17% in the borrower accounts and 15% in the outstanding amount between 2015 and 2023. In contrast, non-food credit showed a CAGR of 12% in borrower accounts and 10% in outstanding amounts (Shekhawat et al., 2024).

3.4. Retail Loan Growth: The NBFC Connection and Interconnectedness

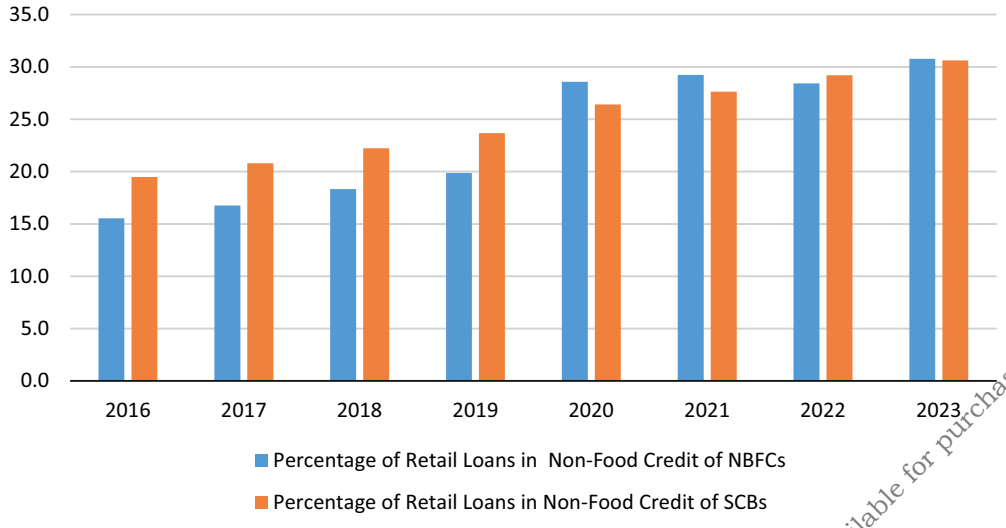
The two comprehensive classification of NBFCs are NBFC – Investment and Credit Companies (NBFC-ICCs) and NBFC - Infrastructure Finance Companies (NBFC-IFCs)), which command 95% of the NBFC sector advances and are adequately funded by banks constituting 41% of their total borrowings which includes subscription to debentures and commercial papers as well (Financial Stability Report, December 2023). Hence NBFCs are net borrowers in the banking and financial system. They have tie-ups with more than one bank to meet the requirement of funds. Small and midsize NBFCs have always banked on banks as the prominent source of funding whereas the large NBFCs, capital requirements were satisfied from the capital markets[7]. But the banks prefer lending more to large NBFCs as they have a strong lineage and enhanced regulation. It is evident from Table 3.3 and Figure 3.6 that the banks' exposure to NBFCs has been growing since 2008. There was a huge increase in lending by banks from 2010 to 2011 to the tune of 67.7% in 2011 (YOY), and in 2018-19 to the tune of 51.3 % (YOY). In 2018 the IL&FS crisis devasted the NBFC sector resulting in liquidity crunch and the reputation of NBFC as a significant intermediary changed to being a riskier borrower as the focus now shifted to their riskier style of operation which is, borrowing short term to lend long term[8]. Hence it can be observed that in 2019-20 the advances from banks reduced to 26.6%. Year 2020-21 showed a huge decline to the tune of -0.2. In 2019-20 a prolonged 8-quarter slowdown had preceded which had brought down the GDP growth to 4.2%. By April 2020 economic activity had almost stopped due to COVID 19. Again lending to NBFCs had grad-

7. Business Standard, "Bank lending to NBFCs jumps 23.6% in July to ₹13.8 trillion: Report", June 7, 2024. Available at https://www.business-standard.com/finance/news/bank-lending-to-nbfcs-jumps-23-6-in-july-to-rs-13-8-trillion-report-123091801078_1.html (accessed on 7 October 2024).

8. The Hindu, "Capital buffers: RBI draft norms timely for NBFCs", May 31, 2019. Available at https://www.thehindu.com/opinion/editorial/capital-buffers-rbi-draft-norms-timely-for-nbfcs/article27355677.ece

FIGURE 3.5

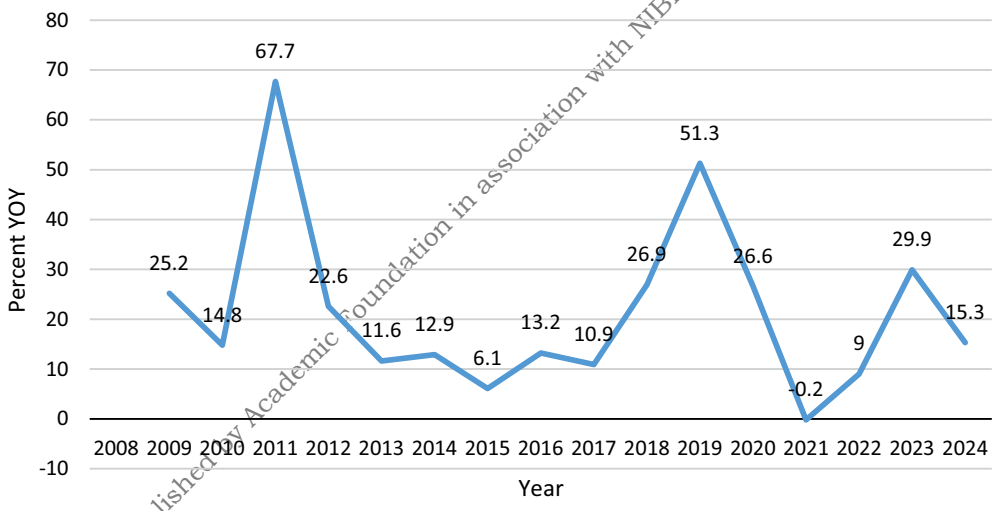
Percentage Share of Retail Loans in Total Non-Food Credit for SCBs and NBFCs (2016-23)



Source: RBI, Report on Trends and Progress of Banking in India, several issues.

FIGURE 3.6

SCBs Lending to NBFC (2008-24) YOY Growth



Source: RBI.

ually picked up and by March 2024 it was at 15.3%. Hence if we take the growth in totality from 2008 to 2024 then it was a good 20.4%. This is quite significant and explains the synergistic effect of a bank (with broad capital base) and an NBFC (with wider reach). Since banks are lending to NBFCs, it is important to know to which segment NBFCs are on-lending. And the segment that holds the attention of the readers in this chapter is the personal or the retail loan segment. Hence the focus here is on NBFC-ICCs (Investment and Credit Company) because they predominantly focus on lending to retail customers which is 52.4% of their total credit portfolio as on December 2023[9]. Hence NBFCs are competing with the SCBs in satisfying the credit requirements of the retail customers.

For both SCBs and NBFCs by the year 2023 the percentage share of retail loans in total non-food credit was around 30% (Figure 3.5). The

9. Financial Stability Report (RBI, 2024a).

percentage share of unsecured loans in retails loans for NBFCs has also been increasing and has reached 7.16% by 2023.

And this remarkable feat of more than 50% exposure of NBFC-ICCs to retail customers can be also credited to banks whose lending to NBFCs have been constant and huge increase was seen during 2010-11 and 2018-19 to the tune of 67.7 and 51.3 respectively (Figure 3.6). The reason is that the lending business of SCBs recorded higher growth in 2010-11 at 22.9% and deposits grew at 18.3% in 2010-11 compared to the previous year.[10] Though 2018 was a difficult year for banks as well, due to the Nirav Modi scam, even then they helped out NBFCs by lending more to recover from IL&FS scam[11]. NBFCs standalone earnings/achievements have an excellent market reach not just in urban areas but also in semi- rural and rural areas. This makes NBFCs an excellent medium for on-lending. This synergistic effect gave birth to the concept of co-lending. Co-lending is an arrangement wherein a bank associates with an NBFC to provide loans to new customers.

TABLE 3.3

Growth in Credit from SCBs to NBFCs (2008-24)

Full Period (2008-24)	20.4
2008-09	25.2
2009-13	27.4
2013-19	19.3
2019-22	11.2
2022-24	22.4

The co-lending AUM (Assets under Management) of NBFCs has approached ₹1 lakh crores by April 2024[12]. It is seen as a rewarding union for both banks and NBFCs wherein risks and rewards are been shared. As per data given by CRISIL Ratings on composition of co-lending, 34% is for personal loans, 20% for home loans, 13% for both unsecured MSME and Gold loans, 8% for LAP (Loan Against Property) and 12% is others.

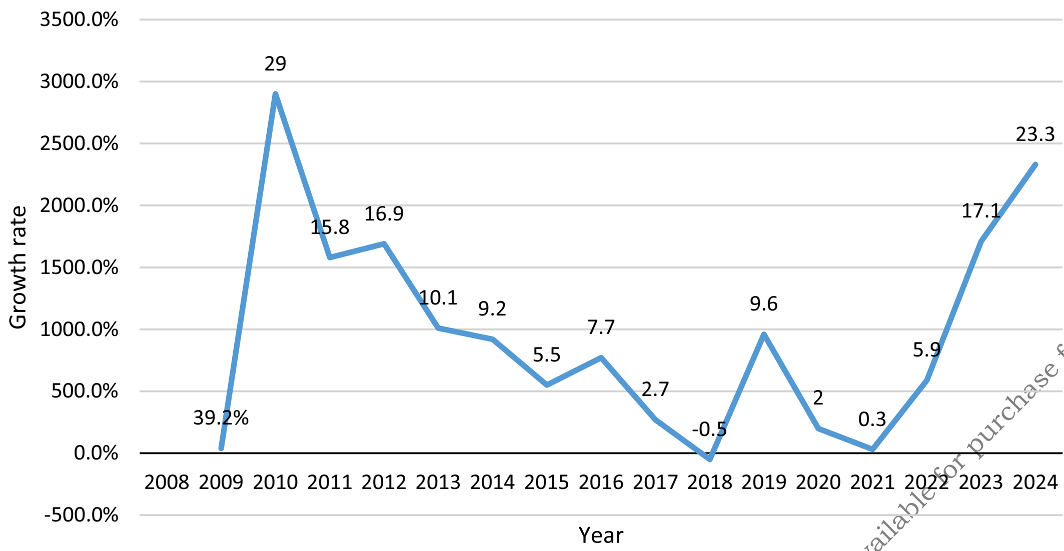
Here it is deciphered from the data that the maximum beneficiaries of co-lending arrangements are borrowers of unsecured personal loans. So unbridled growth of unsecured personal loans by all lenders can lead to systemic risk. This situation has prompted the regulator to increase risk weights on bank lending to NBFCs to 125% in November 2023 which was assumed to control or decrease the source of funds which will result in reduced exposure of NBFCs to unsecured loans. NBFCs have been capitalising on their advantage of wider reach by heavily relying on algorithms and historical data. Given the ever-changing and evolving environment and customer preferences, the NBFCs have realised that their association with fintech companies is where faster growth lies for them. Not just NBFCs even SCBs association with fintech is on the rise. Fintechs are also clinging on to this association as they always have shortage of funds. Over the past six years, fintech companies have experienced tremendous growth in their company. In 2018, they made up half of all loans disbursed with ticket sizes under ₹1,00,000. By September 2023, their market share had soared to 77%.[13] Equipped with advanced data and analytics expertise, fintechs have been growing their business rapidly through co-lending with banks and direct lending.

The ease with which a borrower can avail credit specially unsecured personal loans has led to an increase in personal spending, thus increas-

10. RBI Publications: Operations and Performance of Commercial Banks, available at https://www.rbi.org.in/scripts/PublicationsView.aspx?id=13938 (accessed on 7 October 2024).
11. Kothari, Abhishek, "2018 was a nebulous year for NBFCs and Banks. What happens next?", December 20, 2018, CNBC TV18. Available at https://www.cnbctv18.com/finance/2018-was-a-nebulous-year-for-nbfcs-what-happens-next-1718591.htm (accessed on 7 October 2024).
12. Kayastha, Anshika, "NBFC co-lending AUM nearing ₹1-lakh crore, to grow 35-40% in medium term", April 9, 2024, The Hindu Business Line. Available at https://www.thehindubusinessline.com/money-and-banking/nbfc-co-lending-aum-nearing-1-lakh-crore-to-grow-35-40-in-medium-term/article68042971.ece#:~:text=Co%2Dlending%20AUM%20of%20NBFCs,or%20latest%20by%20Q1%20FY2 (accessed on 7 October 2024).
13. Kawale, Ajinkya, "Fintechs lead small-ticket loans' volume with 77% market share: Study", March 17, 2024, Business Standard. Available at https://www.business-standard.com/industry/news/fintechs-lead-small-ticket-loans-volume-with-77-market-share-study-124031700502_1.html (accessed on 7 October 2024).

FIGURE 3.7

Growth of Education Loan in Percent (2008-24)



Source: RBI, Sectoral Deployment of Bank Credit.

ing income levels in the economy. This in turn leads to higher Gross Domestic Product (GDP) and thereby faster productivity growth (Telang, 2019).

3.5 Contribution of Retail Lending to Economic Growth

The adage "you name it, we have it" can be improvised to "you name it and we can make it happen through a loan" to appropriately describe how people can realise their dreams by availing (living dangerously on) instalment/EMI system. The push by the banks to pursue growth when their exposure to corporates and MSME was reeling under NPAs, coupled with more relaxed and open attitude of people towards loans led to a rise in personal loans retail and within that the personal loans (unsecured loans). Customers are aware of the advantages that the loan exposure gives. For instance, due to the knowledge of financial planning, market is aware that an education loan is better than liquidating funds invested in fixed deposits/stock market/mutual funds, etc. as the education loan gives the advantage or choice of completely using the moratorium period which results in repayment starting 12 months after completion of course or 6 months after getting employment, whichever is earlier. And also tax benefits can be claimed under Section 80E of the Income Tax Act. But does the economy benefit from education loans? Education leads to increasing the quality of human capital which leads to better and adequate utilisation of minimum resource available leading to growth in the economy. As per the World Bank estimates, a one-year increase in the average number of years spent in education can boost a nation's GDP growth by 0.37%. Correspondingly, a 1% improvement in literacy can result in a 0.3% boost in GDP growth. Furthermore, a study carried out by the National Bureau of Economic Research (NBER) discovered that the region might experience a substantial economic benefit of $97.8 billion, or an 81% rise in GDP, if the presently enrolled students in South Asia, including India, achieve basic educational abilities[14].

Going by the benefit cited by World Bank regarding the connect between literacy rate and GDP, other than setting up educational institutions the one parameter taken up in this paper is the availability of education loan. Edu-

14. Bansal, Nilangani, "Impact of Education Policy on India's GDP Growth: Strengthening the Foundation for a Thriving Nation", October 26, 2023. Available at https://www.investindia.gov.in/team-india-blogs/impact-education-policy-indias-gdp-growth-strengthening-foundation-thriving-nation (accessed on 7 October 2024).

TABLE 3.4

Number of Beneficiaries According to Amount

Scheme	*0 to 50,000*	*50,001 to 1,00,000*	*1,00,001 to 5,00,000*	*Above 5,00,000*
Dr. Ambedkar Central Sector Scheme	2	4	64	4124
Padho Pardesh	1		11	726
Central Sector Interest Subsidy	248	954	30591	9191

Source: Government of India, Ministry of Finance, Department of Financial Services, Rajya Sabha Unstarred Question no. 397, answered on Tuesday,6th February, 2024/ Magha 17, 1945 (Saka).

cation loans peaked to 39.2% and 29% (Y-O-Y) in 2008-09 and 2009-10 respectively (Figure 3.7) because of GOI laying high priority on secondary technical and higher education (Tilak, 2008). In 2017-18 the fall was due to nearly 9% of loans extended by PSBs turning bad in that year. Nursing courses accounted for the largest percentage of non-performing assets (NPAs) at PSBs under the education category (21.28%), followed by engineering (9.76%), other professions (9.49%), the medical profession (6.06%), and MBA (5.59%).[15] The next rise we see is to the tune of 23.3% in 2023-24. The factors fostering this growth were the online courses which were the compulsion forced by COVID-19 had turned to offline courses thereby releasing the heldup demand. And also the risk weights assigned by RBI due to unbridled growth in personal loans specifically unsecured were not applicable to education loans[16]. And the ease with which the loans can be applied for and are disbursed adds to the charm of the loan. It's not just the educated or the privileged class availing loan and equipping themselves with higher education. Continued efforts of GOI to ensure that interested and deserving students should not be left behind for want of funds with least hassle has created the 'jansamarth portal' to extend loan for education to economically weaker segments in June 2022. There are three schemes for education loan under this, viz., Central Sector Interest Subsidy (CSIS) which focusses on economically weaker section students to pursue professional and technical education in India; Padho Pardesh which is interest subsidy for minorities to pursue higher education abroad; and Dr Ambedkar Central Sector Scheme, which is interest subsidy scheme for OBS (Other Backward Section) and EBC (Economically Backward Classes) to pursue higher education overseas. The success of this scheme can be gauged by the benefits availed so far: as on February 2023, 45916 beneficiaries have been disbursed ₹2868.41 crores. From Table 3.4 it can be understood that maximum loan availed is under CSIS scheme for amounts between 1,00,001 to 5,00,000. There are economic advantages of vocational education, namely generation of jobs, augmentation of trained labour, enhanced productivity, mitigation of poverty, and GDP contribution (Ravichandran et. al, 2023).

The Reserve Bank of India has scaled real GDP growth projection for 2024-25 to 7.2% from 7.0% projected earlier. Growth in an economy is fostered by consumerism. India is poised to become the world's third largest consumer market by 2027. Over 100 million will have annual income above $10k by 2027 (Euromonitor, Goldman Sachs Investment Research)[17]. Personal loan growth is driving banks profitability. Does increase in consumer credit lead

15. PTI, "Nearly 9 per cent of education loans by PSBs turned bad in FY'18", January 4, 2019, available at https://economictimes.indiatimes.com/industry/banking/finance/banking/nearly-9-per-cent-of-education-loans-by-psbs-turned-bad-in-fy18/articleshow/67381988.cms?from=mdr (accessed on 7 October 2024).

16. Shridhar G Naga, "Education loans see record 20.6% surge in April-Oct", December 25, 2023, available at https://www.thehindubusinessline.com/money-and-banking/education-loans-see-record-206-surge-in-april-oct/article67673949.ece (accessed on 7 October 2024).

17. TOI News Desk, "'Affluent India': The emergence of a wealthier consumer base", January 13, 2024. Available at https://timesofindia.indiatimes.com/business/india-business/affluent-india-the-emergence-ofa-wealthier-consumer-base/articleshow/106819112.cms (accessed on 7 October 2024).

to increase in private consumption demand? For this the credit to GDP ratio of households needs to be studied. India is ranked 10th out of the major G20 nations in terms of the ratio of household credit to GDP. The obvious conclusion is that economies with bigger GDP sizes should obviously have higher ratios. India's household credit to GDP ratio of 40.3% is lower than that of the US (73.7%), the UK (80.7%), Germany (53.5%), and Japan (67.5%)—all of which are significant advanced countries. Research has proved that there is strong merit in growing household credit as it has positive effects on consumption and hence GDP growth (Mazumdar, 2024).

3.6. Challenges in Retail Lending

It is said that when a customer repays her education loan, her relationship actually starts with the bank. She is the one who will be living her life on EMIs. The banks need to devise proper strategy to secure wallet share of this customer. The most important and crucial challenge faced by banks today is being discussed below.

Regulatory Compliance

It was generally acknowledged that a country's financial industry would be more vulnerable to speculative activity that, if left unchecked, could spiral out of control if its systems and practices were opaque. It was also acknowledged that countries must follow certain internationally established norms and codes in a number of sectors in order for their global trading partners to feel secure in the knowledge that their sensitivity to shocks from the inside and outside has been minimized. Following the Reserve Bank of India's (RBI) decision to increase the risk weight on banks' exposure to consumer credit, credit card receivables, and non-banking financing companies, the banking sector will probably need ₹84,000 crore of excess capital, or a 5% increase, over the ₹15.2 lakh crore capital requirement[18]. Take the example of Kotak Mahindra Bank on a particular day when a number of Kotak Mahindra Bank clients were unable to utilize the bank's mobile application. They expressed their displeasure on social media. A small number of consumers even voiced complaints about their debit card, UPI, and net banking transactions not processing properly. The bank informed that they regret to notify that there is now sporadic slowness on their technical systems and that they are finding a solution and that they regret the inconvenience . If customer service is not taken seriously and their time is not valued the bank can end up in problem. That is exactly what RBI replied: in the interest of clients it is preventing Kotak Mahindra Bank from using specific banking services.

Technology Disruption

Fintech payment companies in India have pioneered the swift expansion of digital payments in the nation, and their dominance may convert into competitive advantages to extend into other financial services. Major banks in India have also strengthened their digital product lines considerably, making them more resilient to fintech competition. The advantage that the banks have is the open architecture of the UPI, a big user base. Disruptions can be turned into opportunities for upgradation.

Monitoring of Retail Loans

Utmost precaution should be taken while assessing the credit worthiness of the borrower. As unsecured personal loans are mostly used for unproductive purpose, regular flow of income of the borrower from a permanent source is important as the eligibility criteria. Regarding on-lending, they ought to have a set of regulations that include disclosure requirements for data sources and model parameters. Furthermore, conducting routine audits and evaluations of their lending models will guarantee continued adherence to set guidelines. Likewise, a strong framework that places equal emphasis on consumer protection, ethical lending practices, and methodical risk management can contribute to bolstering trust in online lending. Criminal proceedings under IPC should be initiated against the borrower in case

18. Mathew George, "RBI tightening of unsecured loans: Banks may need $84,000 crore excess capital," November 18, 2023, Indian Express. Available at https://indianexpress.com/article/business/rbi-tightening-of-unsecured-loans-banks-may-need-rs-84000-crore-excess-capital-9031367/ (accessed on 7 October 2024).

of default. Under no circumstances the depositors' money should be compromised.

Alignment of 4Ps in Retail Lending: A Boon Leading to Unbridled Lending

Personal loan products are designed to meet the lifestyle needs of the customer. Unsecured personal loans can be utilised to meet any unmet need of the customer and monitoring of end use of funds is not undertaken by the financing institute. As any financial requirement can be met by the unsecured personal loan this very feature makes it the most promising feature of the loan. This very feature dwarfs the impact of higher interest rates (ranging from 8.75% to 35%) which the unsecured personal loan commands. Lenders have also been capitalising on this very feature in promoting this loan. This feature came to the aid of the customer during the pain unleashed by COVID-19 and unsecured personal loans became the saviour of not only retail customers but also saved the businesses of MSME customers. The fintech revolution has given customers easy access to personal loans and has made deeper the reach to attract small ticket size loans in unsecured lending. So the 4Ps for personal loans is perfectly aligned which can cause systemic risk if prudent lending norms are not adhered to. Hence the proactive move of RBI, requiring banks and NBFCs to stockpile 25% higher risk weight for unsecured personal loans will act as a deterrent to lend for banks and for borrowers by way of higher interest rate.

3.7. Conclusion

Personal loans allow granular diversification and because of their small size, systemic risks may be lower. But if prudent lending norms are not practiced then funding the bottom of the pyramid can lead to disaster. Personal loans of SCBs (GNPA ratios was around 2.1 in March 2015 and in June 2023 it is 1.5) have historically had lower GNPAs compared to industry (GNPA ratio of large industries reduced from 22.9% at end-March 2018 to 4.6% at end-June 2023). Hence a balanced portfolio of household and corporate loans may reduce the total risks associated with the banking system. Appraisal process need to be stringent and properly adhered to while advancing loans. History has proved that unscrupulous lending to unqualified borrowers were the major reasons for NPAs and financial crisis. The very design of a loan can label it as a risky instrument but prudent lending will help in creating a win-win situation for a bank. Personal loans (unsecured) are the favourite loans of banks and also of individuals because of the higher rate of interest it earns for banks and the ease with which it can be availed and can be used to meet any requirement of the borrower. Co-lending is an excellent mechanism wherein 2+2 will equal to 5 because the enormous funds that banks have will be able to reach the unbanked population through the excellent network, reach and rapport the NBFCs have. On the other hand excellent reach of NBFCs could be an advantage only when the customers can be served which can be accomplished with the huge capital base of banks. According to statistics from rating agency CareEdge, the amount of money raised by non-banking financial institutions (NBFCs) through mutual funds (MFs) increased by about 30% year over year (Y-o-Y) to ₹2.08 trillion in April 2024[19].

While retail credit growth continues to be robust for Indian banks and NBFCs, as at the end of June 2024, signs of stress were reported in a few unsecured segments like consumption loans, microfinance loans and credit card outstanding. The Governor's statement, after the Monetary Policy Committee meeting on October 9, advised SCBs and NBFCs to ensure robust underwriting and monitoring standards. It also asked outlier NBFCs to desist from imprudent credit growth, usurious interest rates, frivolous penalties and target-driven remuneration systems (RBI, 2024b). The financial sector will have to balance its risks and rewards, to maintain high economic growth, during a tight money regime.

19. Abhijit Lele, "MF funding to NBFCs grow at 30% to $2.08 trn in April 2024", June 6, 2024, CareEdge, available at https://www.business-standard.com/markets/news/mf-funding-to-nbfcs-grow-at-30-to-rs-2-08-trn-in-april-2024-careedge-124060501091_1.html (accessed on 3 October 2024).

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4

Credit Guarantee for MSMEs

Trends and Prospects

M. Manickaraj | Anjani Kumar Srivastava[1]

4.1. Introduction

Historically, lack of collateral has been a major reason for not being able to provide funding support to Micro, Small and Medium Enterprises (MSMEs) by commercial banks. An effective substitute for collateral is credit guarantee. In India, Credit Guarantee Trust Fund for Micro and Small Enterprises (CGTMSE) has been setup jointly by the Ministry of MSME, Govt. of India and Small Industries Development Bank of India (SIDBI) with a vision to facilitate flow of formal credit from banks and financial institutions to the Micro and Small Enterprises (MSEs). The CGTMSE started offering one guarantee scheme for loans given to the MSEs. Over time the scheme has been modified and many other schemes have been introduced. Besides, National Credit Guarantee Trustee Company (NCGTC) has been established by the Department of Financial Services, Ministry of Finance, Government of India and it also has introduced several credit guarantee schemes including schemes for loans given to Micro Enterprises, startups, etc. The trend in the performance of CGTMSE and NCGTC and the prospects of credit guarantee schemes in enabling the flow of formal credit to MSMEs are presented in this chapter.

The remainder of the chapter is organized into eight sections. The next section describes the MSMEs in India and flow of bank credit to the sector. Sections 4.3, 4.4, and 4.5 discuss the need for credit guarantees, credit guarantee schemes in India and reforms in CGTMSE. Performance of CGTMSE and NCGTC are discussed in Sections 4.6 and 4.7. Challenges and prospects for credit guarantee are presented in Section 4.8. Section 4.9 concludes.

4.2. MSMEs in India

As per the National Sample Survey, India has around 64 million MSMEs. Over 99% of the total MSMEs are micro enterprises which are largely informal in nature. Small enterprises are 3.31 lakh and medium enterprises are 0.05 lakh accounting for 0.52% and 0.01% of total estimated MSMEs, respectively (Government of India, 2015; Government of India, 2023). Activity-wise classification of MSMEs in India is presented in Table 4.1.

TABLE 4.1

Activity-wise Number of MSMEs (in Lakhs)

Category	*Rural*	*Urban*	*Total*	*Share (%)*
Manufacturing	114.14	82.50	196.65	31
Electricity*	0.03	0.01	0.03	0
Trade	108.71	121.64	230.35	36
Other services	102.00	104.85	206.85	33
Total	324.88	309.00	633.88	100

Note: *Non-captive electricity generation and transmission

Source: Government of India, Ministry of MSMEs, Annual Report 2022-23.

1. The authors are grateful to Jeeban Jyoti Mohanty and Rupa Rege Nitsure for valuable comments and suggestions. The usual disclaimer applies.

TABLE 4.2

Commercial Bank Loans Outstanding as at the End of March of Last Five Years Ending 2023

(₹ Trillion)

Year	*Non-food Credit*	*Agriculture*	*MSEs*	*Medium Industry*	*Large Industry*	*Services*	*Personal Loans*
2018-19	97.30	11.13	3.71	1.01	23.65	23.41	23.03
2019-20	103.19	12.03	4.03	1.09	24.35	26.72	27.27
2020-21	108.88	13.30	4.33	1.45	23.56	27.71	30.09
2021-22	118.36	14.62	5.32	2.26	23.98	30.12	33.87
2022-23	136.55	16.87	5.98	2.53	24.85	36.09	40.85
CAGR	8.8%	11.0%	12.7%	25.9%	1.2%	11.4%	15.4%

Source: *Reserve Bank of India – Handbook of Statistics on Indian Economy, 2022-23.*

TABLE 4.3

Share of Credit from Commercial Banks to Various Sectors during Last Five Years Ending 2023

Year	*Non-food Credit*	*Agriculture*	*Industry*			*Services*	*Personal Loans*
			MSEs	*Medium Industry*	*Large Industry*		
2018-19	100.0%	11.4%	3.8%	1.0%	24.3%	24.1%	23.7%
2019-20	100.0%	11.7%	3.9%	1.1%	23.6%	25.9%	26.4%
2020-21	100.0%	12.2%	4.0%	1.3%	21.6%	25.4%	27.6%
2021-22	100.0%	12.3%	4.5%	1.9%	20.3%	25.4%	28.6%
2022-23	100.0%	12.4%	4.4%	1.9%	18.2%	26.4%	29.9%

Source: *RBI – Handbook of Statistics on Indian Economy, 2022-23.*

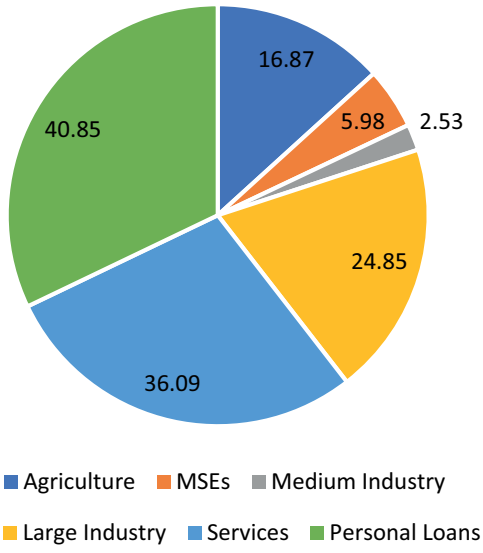
India has taken many steps to channel finance from banks and financial institutions to the MSME sector ever since 1969 when banks in the country were nationalised. The steps taken include Priority Sector Lending Scheme, prescription of methods for financing the MSMEs, establishment of dedicated institutions for promotion, development and financing small businesses including National Small Industries Corporation (NSIC), National Institute of Micro Small and Medium Enterprises (NIMSME), Small Industries Development Bank of India (SIDBI), Micro Units Development and Refinance Agency Ltd. (MUDRA), CGTMSE, NCGTC, etc.

Flow of Bank Credit to MSMEs

The flow of credit from scheduled commercial banks to various sectors is presented in Table 4.2 and the share of credit to various sectors is presented in Table 4.3. The flow of credit to large industry has remained more or less stagnant despite overall credit growth during the last five years being 8.8%. Consequently, the share of bank credit to large industry declined from 24.3% in 2019-20 to 18.2% in 2022-23. On the contrary, credit to agriculture, MSEs, medium industry and personal loans has grown at a significantly higher rate than overall credit growth in the country. Credit to the MSE sector has grown at a CAGR of 12.7%. Nevertheless, the share of credit to MSEs in total non-food credit was just 4.4% at the end of March 2023 compared to the share of credit to large industry (18.2%). The share of credit to the medium industries is the lowest at 1.9% (Government of India, 2023).

FIGURE 4.1

Distribution of Bank Credit Outstanding as at the End of March 2023 (₹ Trillion)



Source: Authors calculation, from the Handbook of Statistics on Indian Economy 2022-23, RBI.

The amount of loan outstanding as of March 2023 that has been received by the MSEs from the SCBs in the country was ₹5.98 trillion and by the medium enterprises was ₹2.53 trillion (Figure 4.1). The total credit provided by SCBs to the MSMEs and outstanding as of March 2023 was ₹8.51 trillion (RBI, 2023). A study by the International Finance Corporation (IFC) has found that the total funding requirement of MSMEs in India is ₹87.87 trillion of which debt is ₹69.3 trillion and equity is ₹18.4 trillion. Around ₹58.4 trillion of debt (81%) is raised from informal sources. The report further goes on to state that the addressable credit gap is ₹25.8 trillion (IFC, 2018). Another study by Microsave Consulting has estimated that the demand for credit by MSMEs in 2020 was ₹105.5 trillion (USD 1,431 billion) (Microsave Consulting, 2020).

Why Are Banks Reluctant to Extend Credit to MSMEs?

The single largest source of fund for commercial banks is savings deposited by the public with them (International Finance Corporation, 2018). Every bank has millions of depositors and the main reason why the public deposit their savings with the banks is safety. Given this fact, banks have to necessarily ensure the safety of depositors' money at all costs. While the capital mobilized by way of deposits provides the opportunity for lending at large scale in terms of loan size and number of borrowers, the responsibility of ensuring safety of deposits restricts their risk-taking capacity. On the other hand, in order to boost flow of bank credit to this sector, RBI has waived off collateral requirements on loans to MSEs upto ₹1.0 million (RBI, 2019). This is because MSMEs are perceived to be risky owing to several factors like information asymmetry.

Banks mitigate the risk of default largely by accepting collateral from the borrowers. MSMEs by nature are asset-light and lack collateral. Further, they would like to plough back their surplus into business or create income generating assets rather than creating collateral in the form of land or building (OECD, 2013). This is a major reason why banks are reluctant to lend money to MSMEs.

4.3. Credit Guarantees

Credit guarantee has been found to be a substitute for collateral, particularly for the loans given to MSMEs (Asian Development Bank, 2016; Kim et al., 2021). The essential function of credit guarantee is transfer of default risk by the banks to the credit guarantee company (Navajas, 2001). In developed nations, credit guarantee for MSME loans has been introduced long back and the guarantee facilitated the banks to extend credit to MSMEs. In some nations, as much as 80% of MSMEs access bank credit (Douette et al., 2014). Credit guarantee, thus, has facilitated overall economic development and more importantly financial inclusion and inclusive development (Alliance for Financial Inclusion, 2022).

Credit guarantee organisations can be established in different forms. Some schemes are established as private companies or mutual financial institutions, while others as public corporations, or as subsidiaries/branches of government-owned development banks, or as government structures directly linked to a ministry (European Investment Bank, 2014).

The major advantages of Credit Guarantee Schemes (CGSs) are:

- *The leverage effect:* Debt capital provides the benefit of leverage for business firms. MSMEs do not have access to other sources of fund excepting own capital and borrowings. In developing and least developed nations they resort to loan from informal moneylenders who charge exorbitant rates of interest. Another big limitation of loan from informal sources is that they do not offer credit for a longer period of time. Loan from formal sources of credit can facilitate MSMEs to multiply the size of their business and to become corporates over time. The benefit of leverage will also spill over to other stakeholders and employment generation.
- *Regulatory capital relief:* Central banks impose higher capital charge on loans without collateral. In many nations, loans guaranteed by CGSs are assigned nil or minimal risk weight and hence the capital charge for such loans is zero or very small.
- *Countercyclical relief during crises:* When crises hit, default risk rises substantially and banks will restrict lending money significantly. At such times, CGSs play a crucial countercyclical role by supporting MSMEs. One classic case is the response of the Indian government during the Covid-19 pandemic. India launched the Emergency Credit Line Guarantee Scheme (ECLGS) for the MSMEs to provide necessary liquidity support to the MSMEs by way of additional loan by lending institutions and these additional loans were guaranteed by the scheme.

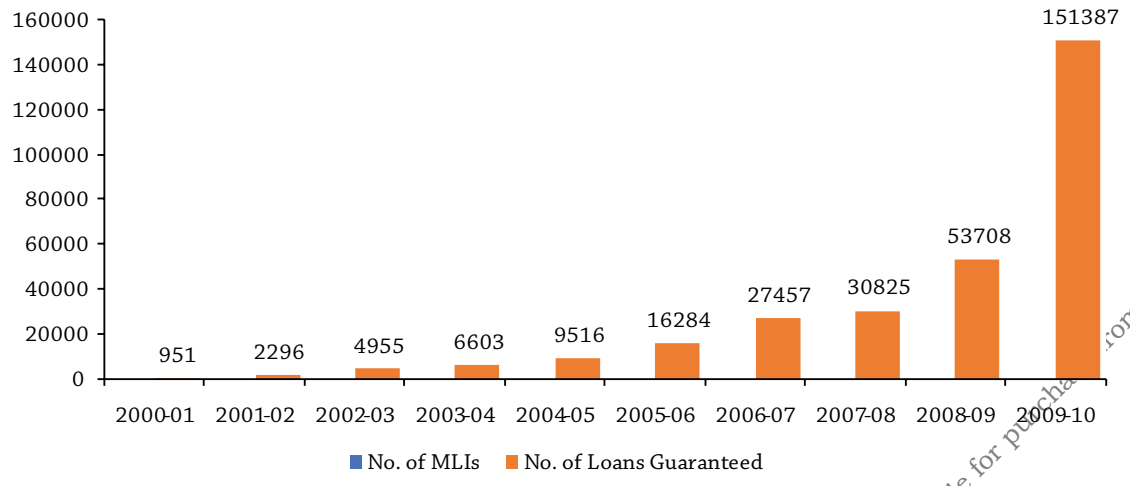
Despite the positive impact that CGSs can have on many aspects including the lending institutions, the MSMEs, the economy, employment and so on, the schemes may not really get sold. For instance, the CGS of CGTMSE had very little progress during its first 10 years of operation. The details of performance of the scheme during the period 2000-10 are depicted in Figure 4.2 and Figure 4.3. Figure 4.3 shows that the amount of loan underwritten by CGTMSE during 2010 was just ₹68.75 billion. Given the number of MSMEs in the country and the amount of MSME loan outstanding, this amount is too small.

Certain measures on both the supply side and the demand side of CGSs would facilitate the acceptance of credit guarantees and in turn increase the flow of credit. On the supply side the following three things would be needed.

- *Elimination of moral hazard:* CGS may probably encourage lending institutions to give loans indiscriminately, referred to as adverse selection of credit. At times some MSEs too see CGS as a dole being provided by the government and demand the same irrespective of their creditworthiness. To prevent this, the risk should be shared between the bank and the CGS. Of course, the CGS will assume the major share of the risk and a minimum of risk will stay with the bank. In India, this is ensured by the guarantee cover available under CGS being to the extent of 75% – 85% of the sanctioned amount of the credit.
- *Use of portfolio guarantees:* Instead of underwriting guarantees for individual loans it can be done for a portfolio of loans. This is to prevent banks transferring loans which are most likely to default and retain good loans with them. While CGTMSE offers guarantees for individual loans, NCGTC offers guarantees on portfolio level.
- *Provision of incentives for loan recovery:* CGSs may motivate banks to put in their best efforts for recovery of bad loans so that the effective loss due to loan defaults can be reduced and the CGS can be sustainable. The incentive can be in the form of risk-based guarantee fee. If the level of NPA of a bank is high, the guarantee fee should be higher and vice versa. Similarly, based on past performance of a bank in terms of loan defaults and claiming compensation from the CGS, guarantee fee for the subsequent year can be determined. For instance, insurance companies offer no-claim bonus to customers who have not claimed compensation during the previous year. In both CGTMSE and NCGTC,

FIGURE 4.2

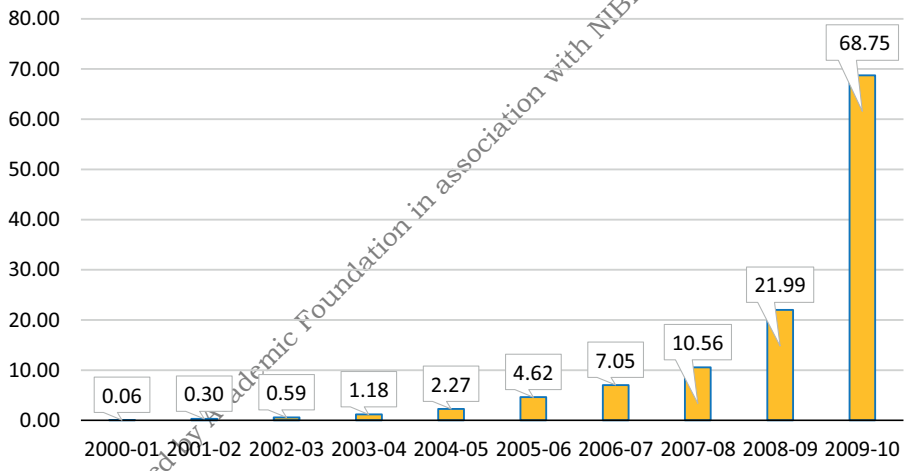
No. of Loans Guaranteed by CGTMSE during First 10 Years



Source: CGTMSE, https://msme.gov.in/sites/default/files/CredirGuranteeFundScheme_1.pdf (accessed 8 October 2024).

FIGURE 4.3

Amount of Loan Guaranteed by CGTMSE during First 10 Years (₹ Billion)



Source: CGTMSE, https://msme.gov.in/sites/default/files/CredirGuranteeFundScheme_1.pdf (accessed 8 October 2024).

suitable risk premia are added in the Guarantee fees depending upon the quantum of default of the particular bank.

The following measures can be used on the demand side:

- *Subsidy in guarantee fee:* In many countries, guarantee fee is borne by the government, partly or fully. For instance, in India, guarantee fee for education loans is borne entirely by the government. Certain State Governments have come forward to partly share the guarantee fee payable by the MSMEs in their respective states.
- *Regulation regarding capital requirement:* It is a fact that loans guaranteed by CGS are less risky for the banks because banks pass on their risk to the CGS. Probably,

depending on the percentage of the risk that is shared with the CGS, risk weight for the loans can be determined, perhaps as a matter of incentive.

- *Parallel use of guarantees and collateral:* There are three reasons why banks may be allowed to accept collateral as well as credit guarantee for loans. Firstly, traditionally banks have been lending against collateral and discontinuation of the practice could be difficult. Secondly, moral hazard on the part of the borrower can be prevented. Thirdly, credit guarantee cannot be offered for bigger loans that may lead to concentration risk and may adversely impact sustainability of CGS. Therefore, in case of bigger loans, if not loans of all sizes, both collateral and credit guarantee may be allowed.

The Department of Financial Services, Ministry of Finance, Government of India had set up the K.V. Kamath Committee in September 2014 to examine the financial architecture of the MSME sector. In its report submitted in February 2015, the Committee recommended that the outstanding credit guaranteed under CGTMSE (for MSEs) needs to be enhanced to an acceptable level of guarantees (around 15% of total MSME credit by banks compared to around 25% as per global experience).

4.4. Credit Guarantee Schemes in India

Deposit Insurance and Credit Guarantee Corporation (DICGC) is an RBI-managed guarantee company focusing on deposit insurance and literally it does not offer credit guarantee. Export Credit Guarantee Corporation of India (ECGC) is another credit guarantee company in India but operating CGS for export credits only (RBI, 2010).

CGTMSE was established in 2000 by the government of India and Small Industries Development Bank of India (SIDBI). It launched a CGS for loans provided by banks and financial institutions to facilitate collateral-free loans to micro and small enterprises (MSEs). The scheme was modified from time to time and one major modification is that it has been split into two different schemes – one for banks and another for non-banking finance companies (NBFCs). These two schemes are named Credit Guarantee Scheme for Banks (CGS – I) and Credit Guarantee Scheme for NBFCs (CGS – II). Over time CGTMSE has also introduced few other schemes and the current list of schemes offered by it are:

- CGS – I for Banks
- CGS – II for NBFCs
- CGS for PM Street Vendor's AtmaNirbhar Nidhi (PM SVANidhi) scheme (CGS-PMS)
- CGS for Co-Lending (CGSCL) – Launched in February 2022 to provide guarantee for loans given to MSMEs jointly by banks and NBFCs.
- CGS for Subordinate Debt (CGSSD) – To provide loans to stressed MSMEs whose loans became Special Mentioned Accounts (SMA) - 2 or NPA and were eligible for restructuring as per RBI regulations. The scheme was launched in June 2020 and closed in March 2023.
- CGTMSE Credit Guarantee under PM Vishwakarma (CGS – PMV) – Government of India has announced the scheme "PM

TABLE 4.4

Guarantee Cover under CGS for PM Vishwakarma

	First Loan		*Second Loan*	
	Loss in Loan Portfolio	*Coverage*	*Loss in Loan Portfolio*	*Coverage*
First Loss	0 – 7.5%	100%	0 – 5%	100%
Second Loss	> 7.5% to 20%	80%	> 5% to 15%	80%
Third Loss	> 20% to 50%	60%	---	---

Source: Circular no. 230/2023-24, CGTMSE, available at https://pmvishwakarma.gov.in/cdn/MiscFiles/CGTMSE_CircularNo230.pdf (accessed 9 October 2024).

Vishwakarma" for providing collateral-free loans to artisans and craftspersons up to ₹300,000. The loan will be released in two tranches: ₹100,000 in the first tranche and ₹200,000 in the second tranche. CGTMSE launched the CGS-PMV in November 2023 and Member Lending Institutions (MLIs) can approach CGTMSE for the portfolios that they have created during the financial year. As such, the MLIs will cover their loans given to artisans and craftspersons under the scheme during 2023-24 onwards and hence the scheme will come into force from FY2025. There is no guarantee fee under the scheme. The guarantee cover is graded as in Table 4.4.

4.5. Reforms in CGTMSE

As can be seen in Figure 4.2 and Figure 4.3, the performance of the CGS offered by the company during its first 10 years of operation was tepid. In order to improve its performance, it has reformed its schemes in many ways, particularly since 2018. The major reforms implemented by the company were as follows:

- Splitting of CGTMSE into CGS-I (for banks) and CGS-II (for NBFCs). Other reforms of CGTMSE were towards ease of operations for the Member Lending Institutions (MLIs), relaxation of norms, and central bank regulation.
- Reforms in operations:
  - Increase in ceiling of guarantee coverage from ₹20 million to ₹50 million effective from April 1, 2023.
  - Introduction of new guarantee fee structure with significant reduction in the fee from peak rate of 2% p.a. to 0.37% p.a.
  - Waiver of legal action for settling claims has been raised to ₹1.0 million.
  - Lock-in period reduced from 18 months to 9 months for loans upto ₹1.0 million and having tenure upto 3 years.
  - Discount in guarantee fee to MSEs located in Credit Deficient Districts notified by RBI.
  - Concession in fee by 10% and coverage of 85% has been introduced in respect of loans given to women entrepreneurs as well as SC/ST entrepreneurs and Divyangjan[2].
  - Concession in fee and increased guarantee coverage to Zero Defect Zero Effect (ZED) certified MSEs, MSEs situated in Aspirational Districts and to MSEs promoted by Agniveers[3].
  - Broad-basing of MLIs by bringing Small Finance Banks, NBFCs, Co-operative Banks and Microfinance Institutions (MFIs).
  - Extending CGS to loans given to Retail Traders, Wholesale Traders and Educational Institutions.
  - Risk-based guarantee fee structure such that MLIs with low NPA will be incentivised by lower guarantee fee and MLIs with higher NPA will pay higher guarantee fee.
  - Introduction of hybrid scheme that allows part of the default risk in loans to be covered by the CGS and the remaining by collateral offered by the borrowers.
  - Launch of PM Street Vendor's Atma Nirbhar Nidhi (CGS-PM SVANidhi)' which came into force in July 2020. No guarantee fee is charged for the guarantee under the scheme.
  - Launch of special schemes with enhanced guarantee coverage with the support of State Governments of Assam, Meghalaya, Manipur, West Bengal, Tamil Nadu, Goa, and Odisha.
- Upgradation of technology in operations:
  - In order to provide ease of doing business for its MLIs, CGTMSE has enhanced the technology platform on which the entire Guarantee Scheme

2. It is a term used to refer to persons with disabilities.
3. In 2022, the government of India introduced a recruitment scheme called AGNIPATH for the Indian youth to serve in the armed forces. The youth selected under the scheme are referred to as Agniveer.

works. This is an integrated platform which encompasses the complete journey of credit guarantee from sanction of guarantee till claim settlement. The solution has Application Programming Interfaces (APIs) which will enable MLIs to integrate their core banking systems with CGTMSE system to push the data directly without human intervention. This will ensure purity of data apart from facilitating real-time sanction of guarantees as well as their claim settlement. Apart from this, it will also provide for proper monitoring of portfolio by way of availability of dashboards and various notifications and alerts.

4.6. Performance of CGTMSE

Performance of CGSs can be measured from different perspectives including reach, growth, financial sustainability and more importantly the impact. Since its inception in 2000 till March 2023, the cumulative number of guarantees underwritten by the CGTMSE under all its schemes was 11.08 million and the cumulative amount of loan guaranteed was ₹4.25 trillion. As on March 31, 2023, the number of MLIs registered with it under CGS – I was 119 comprising 12 Public Sector Banks, 22 Private Sector Banks, 23 Regional Rural Banks, 6 Foreign Banks, 9 Other Financial Institutions, 10 Small Finance Banks and 37 Co-Operative Banks. Further, 45 NBFCs have also been registered as

TABLE 4.5

Scheme-wise No. of Loans Guaranteed by CGTMSE during Last Five Years

Name of CGS	*FY2019*	*FY2020*	*FY2021*	*FY2022*	*FY2023*
CGS-I (for Banks)	---	4,59,808	5,82,543	5,30,808	10,50,313
- Retail Trade	93,871	4,03,439	---	---	---
- Hybrid Product	1,387	5,081	---	---	---
CGS-II (for NBFCs)	63,728	---	2,53,049	1,86,212	1,15,473
CGSSD	---	---	473	289	32
PM SVANidhi	---	---	14,47,266	15,85,550	10,24,594
Total Guarantee Approval (of all Schemes)	4,35,520	8,46,650	22,83,331	23,02,868	21,90,412
Total Guarantee Approval (of CGS I & II)	---	---	8,35,592	7,17,020	11,65,786

Source: CGTMSE

TABLE 4.6

Scheme-wise Loan Amount Guaranteed by CGTMSE during Last Five Years (₹ Billion)

Name of CGS	*FY2019*	*FY2020*	*FY2021*	*FY2022*	*FY2023#*
CGS I (for Banks)		285.03	287.14	424.63	855.22
- Retail Trade	46.41	148.06	77.12	112.14	269.70
- Hybrid Product	3.78	12.97	15.72	31.65	78.36
CGS II (for NBFCs)	59.64	173.49	81.86	137.09	192.60
CGSSD			0.55	0.32	0.09
PM SVANidhi			14.35	17.17	16.83
Total Guarantee Approval (of all Schemes)	301.68	458.51	383.90	579.20	1,064.74
Total Guarantee Approval (of CGS I & II)	59.64	458.52	369.00	561.72	1,047.82

Note: # Credit guarantee issued to MSMEs engaged in retail trade during the year 2022-23 was ₹269.70 billion and guarantees issued under the hybrid scheme was ₹78.36 billion.

Source: CGTMSE

MLIs under CGS – II and 164 institutions have been registered with CGTMSE under CGS-PM SVANidhi.

Co-operative banks were made eligible for becoming MLIs during the FY2019-20 and 37 co-operative banks are registered under CGS-I. Cumulatively, as on March 31, 2023, a total of 3,001 accounts of co-operative banks have been accorded guarantee approvals for ₹8.02 billion and during FY 2022-23, a total of 836 guarantees were approved for an amount of ₹2.48 billion under CGS-I.

Ten SFBs are registered under CGS-I. Cumulatively, as on March 31, 2023, a total of 2,507 accounts of SFBs have been accorded guarantee approvals for ₹7 billion and during FY 2022-23, a total of 750 guarantees were approved for an amount of ₹2.56 billion under CGS-I.

Performance of all the schemes of CGTMSE in terms of number of loans approved for guarantee and the amount of loan guaranteed during the last five years ending March 2023 are presented in Tables 4.5 and 4.6.

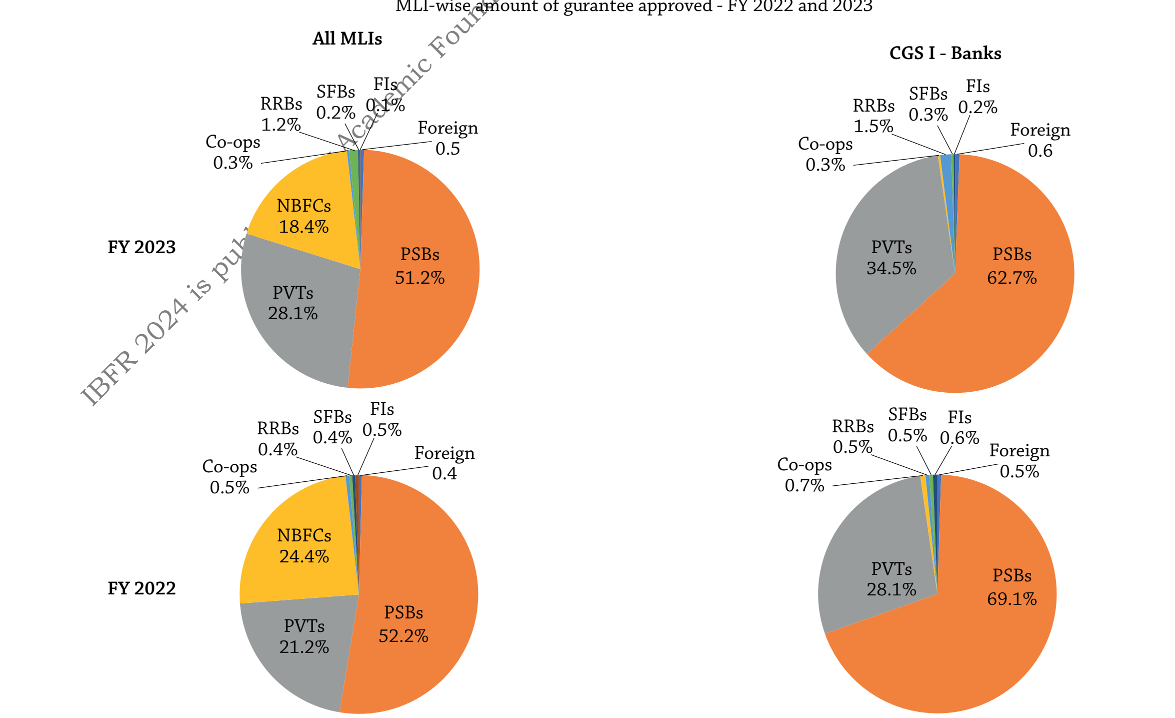
According to Figure 4.4, public sector banks are the major users of the services offered by the CGTMSE, followed by private sector banks and NBFCs. It is quite noteworthy that private sector banks (around 24%) and NBFCs (around 19%) too are availing the services of CGS significantly.

Top 10 banks and their share in guarantee approved by the CGTMSE during 2022-23 are presented in Table 4.7. These 10 banks account for 85% of the total guarantees approved by the company. Surprisingly, HDFC Bank, a private sector bank in the country is on top. A total of ₹159.14 billion worth of loans of the bank have been approved accounting for 19% of the total business of CGTMSE. The other private sector bank among the top 10 is Axis Bank. Another fact is that the average loan size is different among the banks and it is in the range of ₹0.3 million and ₹5.5 million. Union Bank of India's average guaranteed loan size is ₹0.3 million and that of HDFC Bank is ₹5.5 million. The average of all the banks is ₹0.9 million.

Figures 4.5 and 4.6 show the share of the top 10 banks in number of loans guaranteed by the CGTMSE and the amount of loans guaranteed, respectively.

FIGURE 4.4

Loans of Different Types of MLIs Approved by CGTMSE during FY 2022 and FY 2023



Source: CGTMSE

TABLE 4.7

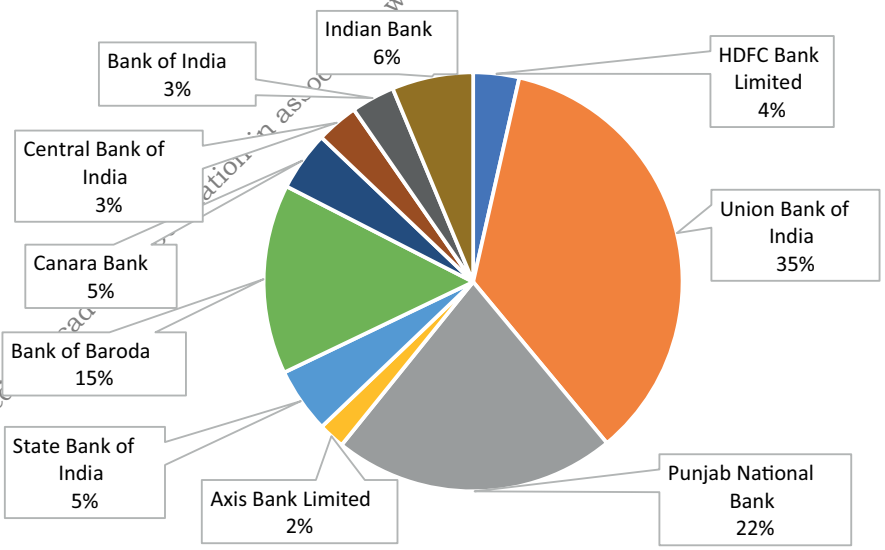
Top 10 Bank Clients of CGTMSE during 2022-23

Name of Bank	*No. of Guarantees*	*Amount of Guarantees Approved (₹ Billion)*	*Share in Total Amount Guaranteed*	*Average Loan Amount (₹Million)*
HDFC Bank	28,817	159.14	19%	5.5
Union Bank of India	2,87,716	89.92	11%	0.3
Punjab National Bank	1,77,182	88.09	10%	0.5
Axis Bank Limited	16,720	77.77	9%	4.7
State Bank of India	40,860	76.76	9%	1.9
Bank of Baroda	1,19,017	69.96	8%	0.6
Canara Bank	37,166	60.82	7%	1.6
Central Bank of India	26,370	41.47	5%	1.6
Bank of India	27,397	35.41	4%	1.3
Indian Bank	50,892	24.93	3%	0.5
Total	8,12,137	724	85%	0.9
Total CGS-I	10,50,313	855	100%	0.8

Source: CGTMSE, Annual Report 2022-23.

FIGURE 4.5

No. of Guarantees of Top 10 Banks Underwritten by CGTMSE during 2022-23



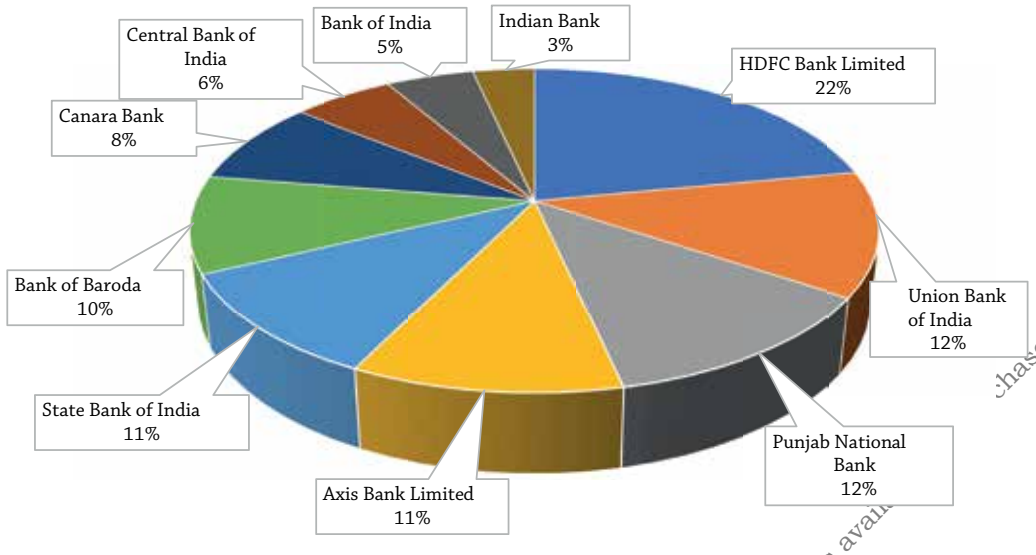
Source: CGTMSE, Annual Report 2022-23.

The participation of top five NBFCs in CGS-II of CGTMSE is presented in Table 4.8. These five NBFCs have accounted for 85% of the total guarantees issued by CGTMSE. In the previous year, LendinKart Finance Ltd, a fintech based lending company, was among the top 5. The two Tata group companies, namely, Tata Motor Finance Ltd and Tata Motors Finance Solutions Ltd have contributed to around 56% of total guarantees under CGS-II.

Financial performance of CGTMSE: Financial performance is critical for sustainability of any CGS. As per the audited balance sheet of the company for the FY2022-23, it had a corpus of

FIGURE 4.6

Amount of Loan of Top 10 Banks Underwritten by CGTMSE during 2022-23



Source: CGTMSE, Annual Report 2022-23.

TABLE 4.8

Top 5 NBFC Clients of CGS-II of CGTMSE during FY 2023

Name of NBFC	*No. of Guarantees*	*Amount of Guarantees Approved (₹ in crore)*	*Percentage of Guaranteed Amount to Total*
Tata Motors Finance Limited	45,376	8,140.79	42%
Tata Motors Finance Solutions Limited	19,865	2,662.55	14%
Aditya Birla Finance Limited	9,621	2,077.17	11%
Fullerton India Credit Company Limited	10,570	1,964.51	10%
Bajaj Finance Limited	15,944	1,504.22	8%
Total	1,01,376	16,349.24	85%

Source: CGTMSE, Annual Report 2022-23.

₹168.43 billion, ₹256.69 billion of investments and ₹4.66 billion of bank balance. The income generated by the company during the year 2022-23 was ₹32.77 billion including Guarantee Fee of ₹9.74 billion and Annual Guarantee Fee of ₹11.76 billion. Surplus after tax made during the year was ₹444.45 million. These figures indicate that the company's capital, liquidity position as well as profitability are sound.

The financial health of CGS will also be determined by the amount of claims made by the MLIs. Cumulatively till March 31, 2023, CGTMSE has settled 4,61,184 claims amounting to ₹103.25 billion. This works out to around 2.43% of amount guaranteed.

4.7. Performance of NCGTC

In March 2014, the government of India established NCGTC to provide guarantee for loans to different segments of the society. Presently, the company manages the following 10 schemes:

- Guarantee Scheme for Corporate Debt
- Credit Guarantee Scheme for Start-ups
- Loan Guarantee Scheme for Covid Affected Tourism Service Sector
- Loan Guarantee Scheme for Covid Affected Sectors
- Credit Guarantee Scheme for MFIs

- Emergency Credit Line Guarantee Scheme
- Credit Guarantee Scheme for Stand-Up India
- Credit Guarantee Fund for Micro Units (CGFMU)
- Credit Guarantee Fund Scheme for Skill Development
- Credit Guarantee Fund Scheme for Education Loans

Among the abovementioned 10 schemes of NCGTC, CGFMU is the only scheme for micro enterprises and hence the CGFMU alone is discussed in this chapter.

As mentioned earlier, over 99% of the business enterprises in India are micro enterprises and one of the challenges faced by these enterprises is accessing credit from banks. The Government of India established MUDRA in 2015 for the purpose of increasing the access of micro enterprises to credit from banks and financial institutions. RBI stipulates that loans up to ₹1.00 million to micro units must be offered without collateral and these loans will be guaranteed under the CGFMU. Loans given to the following entities are eligible for credit guarantee under the scheme:

- New or existing micro unit/enterprise falling under any sector covered under Pradhan Mantri Mudra Yojana (PMMY) or as defined in the MSMED Act, 2006 (as amended from time to time) whose credit requirement is within specified limit of PMMY (presently ₹1.0 million)
- Overdraft facility under Pradhan Mantri Jan Dhan Yojana (PMJDY) (loan limit ₹10,000)
- Self Help Groups (SHGs) (whose loan is above ₹10 lakh and upto ₹2.0 million).

Cumulative number of guarantees approved by the company during the seven-year period (FY 2017 – FY 2023) was 13.1 million and the cumulative total amount of loans guaranteed was ₹2.16 trillion (Table 4.9). The Table shows clearly that there was a steep fall in both the number of guarantees and amount of guarantees during the FY 2019-20. It could be due to the Covid-19 pandemic. Nevertheless, one issue to be noticed is the decline in the number of loans guaranteed. The CAGR in number of loans guaranteed under CGFMU during this period was -6.08%.

The audited financial statements of NCGTC show that the total operating income earned by the company during the year 2022-23 was ₹196.3 million and profit for the year was around ₹100 million. The share capital of the company as on March 31, 2023 was around ₹244 million and cash and bank balance was around ₹276 million. These figures prove that the business of NCGTC was profitable and its financial position is quite strong.

TABLE 4.9

Guarantees Approved by NCGTC under CGFMU

Year	*No. of Loans Guaranteed (Million)*	*Amount of Loan Guaranteed (₹ in Billion)*	*Growth*	
			No. of Loans Guaranteed	*Amount of Loan Guaranteed*
2016-17	0.3	32.25	---	---
2017-18	2.6	367.25	703.14%	1038.79%
2018-19	1.8	373.29	-32.10%	1.64%
2019-20	1.1	170.06	-38.67%	-54.44%
2020-21	2.9	270.58	167.97%	59.11%
2021-22	2.5	331.08	-13.72%	22.36%
2022-23	1.9	614.17	-24.36%	85.51%
Total	13.1	2158.68	---	---
CAGR (5 Years)	---	---	-6.08%	10.83%

Source: NCTGC, Annual Report 2022-23.

4.8. Challenges and Prospects

Both CGTMSE and NCGTC have come a long way in enabling the flow of credit to the MSMEs in India. Nevertheless, the potential for increasing the flow of institutional credit to MSMEs and increasing the business of credit guarantee is very high. As of March 2023, just around 4.5% of total non-food credit of SCBs has been given to MSEs. On the contrary, credit to large industry on that date was around 18.2%. Besides, the number of MSE loans guaranteed is too few compared to the total number of loans. It may be noted that the number of MSMEs registered with the government is increasing significantly and as on July 24, 2024 the total number of MSMEs registered in the country on the Udyam Registration Portal and Udyam Assist Platform was 47.6 million enterprises. The reach of CGS among MSMEs, however, is quite small. The key challenges in tapping the potential for extending institutional credit and covering these loans under CGSs could be the following:

- *Size of the market is large:* As per Reserve Bank of India (RBI), the number of accounts and amount outstanding to MSME sector by Scheduled Commercial Banks during 2022-23 was ₹21.33 million and ₹22.60 trillion respectively. Further, the Expert Committee on Micro, Small and Medium Enterprises, constituted by the RBI in 2019 estimated the credit gap in MSME sector to be in the range of ₹20–25 trillion. CGTMSE and NCGTC alone may not be able to serve the entire market.
- *Changing ecosystem:* One major change in the credit market is digital lending. Another development is entry of Fintech companies. These companies use technology platform for end-to-end processing of loans. They would be interested in using the CGS if the process of underwriting and settlement of claims by the credit companies is 100% digital. The regulations governing MSMEs are amended from time to time and the government is introducing new schemes for the benefit of MSMEs.
- *Diversity of lending institutions:* In India, there are a variety of lending institutions including commercial banks, RRBs, small finance banks, cooperative banks, NBFCs and Fintech companies. All of them may have different loan products, processes, and business models. If all of them can be onboarded to the CGS, the reach and penetration of CGS would be phenomenally high.
- *Technology by credit guarantee companies:* Credit guarantee companies should keep pace with the technological advancements and allow integration of CGS with the lending process of lending institutions.
- *Technology adoption by MLIs:* Though technology in banking and finance is changing very fast, many banks and NBFCs may not adopt the new technologies or they may not adopt quickly.
- *Credit guarantee as a business strategy by MLIs:* The data presented in Table 4.7 suggests that many banks are using CGS for the sake of complying with the requirement of providing collateral-free loans to MSEs and not using CGS as a strategy for scaling up their business. Awareness about the benefits of CGS among the MLIs would increase the reach of CGS.

4.9. Conclusion

Both CGTMSE and NCGTC have demonstrated that the credit guarantee is a sustainable economic activity and can contribute to the financial inclusion and growth of MSMEs significantly. However, more than majority of the MSMEs in the country remain financially excluded. The following suggestions can be considered for increasing the reach of CGSs:

- The share of medium enterprises in total non-food credit of SCBs in the country is less than 2%. There is a strong case for introduction of CGS for medium enterprises.
- Given the fact that there are around 10,000 NBFCs and MFIs registered with the RBI, there is an enormous scope for increasing their participation in CGS.
- Participation of SFBs, co-operative banks, RRBs, and MFIs need to be increased.
- Issue of license to private sector credit guarantee companies and also other types of credit guarantee companies like mutual credit guarantee trusts could be started.

- Tailoring guarantee schemes to specific industries and various types of loans may be explored.
- Across the world green financing is growing. In order to encourage the lending institutions to provide credit to MSMEs engaged in greener activities, Green Guarantees may be introduced (Alliance for Financial Inclusion, 2022).
- Loan sanction process of MLIs should be integrated with that of CGS which would make guarantee approval process seamless and would facilitate ease of operations and cost efficiency.
- RBI may consider increasing the limit of collateral free loan from ₹1.0 million that was fixed in 2010, to say ₹2.5 million.
- The eligibility of SHGs for the credit guarantee under CGFMU may be extended to loans below ₹10 lakhs also.

India has set its eyes on becoming a developed economy in the world. Banks and financial institutions in the country have become very robust and resilient. These are the necessary foundations for the growth of CGS and credit guarantee companies which can contribute to greater financial inclusion of the MSMEs.

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5

Cross-border Liquidity Exposure of the Indian Forex Swap Market

Is Decoupling Feasible?

Gargi Sanati[1]

5.1. Introduction

Financial market integration facilitates the efficient transmission of various monetary policy decisions and enables investment diversification, thereby pooling risk and directing liquidity across markets (Reddy, 1999). However, it can also result in the collapse of an entire economy following the downfall of a few financial institutions. In the post-liberalization era, the integration of the global financial market has created the possibility of financial crisis spreading from the domestic periphery of the country where it originates to the global market (Sanati, 2013). Any shock in one country could trigger capital flight from other integrated countries, affecting the asset value of corporate entities and reducing firms' creditworthiness. Consequently, banks may lose confidence and become hesitant to lend money, which could cause a credit crunch, reduce production and employment, and so on. On the contrary, appreciation in the local exchange rate may result in a decrease in exports and a reduction in foreign exchange earnings. Given the multiplier impact on the real sector economy, many central banks prefer to follow managed float to control the impact of exchange market volatility in the real sector economy. Many developing countries employ a volatility management system to stabilize foreign exchange rates. In this study, we argue that despite the volatility control in the foreign exchange rate, market instability persists due to interconnectedness across the Forex swap market, with its high amount of liquidity (3.8 trillion dollars a day, as per BIS, 2022). Forex swap is purely an interbank product and is used for obtaining Forex funding. Also, it is extensively used for the cover operation of NOSTRO liquidity for different value dates, for example, cash, tom, and forward. So, we can say that except spot, all interbank cover operation requires the engagement of Forex swap (Sanati, 2021).

Recently, the crisis in the US financial sector during 2007-08 caused concerns about the impact of Forex swaps on economic and financial stability. This was because major uses of Forex swaps were for raising funds and hedging the Forex risk exposures of banks. Although it is a market with high liquidity, the increase in cross-border transactions in Forex swaps has made it susceptible to the effects of the global liquidity shortage. From the latter part of 2007 to the end of 2008, the turbulence in the international money markets extended to the Forex and currency swaps markets, resulting in a substantial impact on the Forex swap instruments.

At the outset the disturbance in the Forex swap markets was caused by the severe scarcity of US dollar funding among non-US financial institutions. These institutions were in urgent need of securing US dollars to sustain their operations, but the participants in the interbank market who had previously supplied the currency were holding onto the liquidity to fulfill their own funding requirements. Hence, many non-US

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financial institutions had to resort to Forex swap markets to acquire US dollar liquidity. This continuous increase in demand made the Forex swap market increasingly one-sided, leading to a significant shift in the market dynamics. During this period, increased hedging and speculative plays via the Forex swap market caused higher volatility in the Forex spot market for various currencies.

The global financial system relies heavily on the Forex market. As key dealers and users of Forex instruments, banks have an essential role to play in this market. They also serve as anchors for financial stability and economic activity. However, any disturbances to the Forex market could have significant consequences. Amidst the recent crisis in the United States, there were worries in certain countries regarding their banks' capability to roll over their funding requirements due to the stress in the Forex swap market. This situation could subsequently have an impact on the provision of credit to the domestic economy as well as the financing of the balance of payments. It's worth noting that the Forex swap segment is an important part of the Forex market. In this segment, banks swap currencies to meet their funding needs. The recent crisis highlighted the significance of this market segment and the role of central banks in ensuring its proper functioning. Central banks play a critical role in Forex swap markets. They provide liquidity and ensure that banks have access to the funding they need to meet their obligations. Central banks also intervene in the Forex market to stabilize exchange rates and prevent excessive volatility.

Against this backdrop, we empirically examine the coupling of the Indian Forex swap market with a few Asian economies and the US market. In the post-Covid era, it has been observed that JPY has experienced almost 37% depreciation against USD. On the other hand, the depreciation of the INR is one-third of the Japanese Yen. (Table 5.1). The same trend has been observed even during the Covid period. While Yen depreciated against USD by 6.48%, INR depreciated only 2.66%.

TABLE 5.1

FOREX Spot Rate Movement

	USD/EUR	USD/JPY	USD/SGD	USD/INR
% Change from February 2020 to December 2021	3.11	6.48	(-)3.15	2.66
% Change from January 2022 to May 2024	3.82	37.11	1.19	12.09
Standard Deviation (Volatility between May 2019 to May 2024) in %	0.05	17.46	0.02	4.65

Source: Reuters Database.

Therefore, it can be claimed that the market-driven exchange rate is more sensitive to global shocks. Though Indian central bank interventions are mainly to keep the market volatility moderate, the highly liquid and connected Forex swap market raises concerns related to the stability of the financial market. This means that liquidity shocks in one market can spill over to the rest of the Forex markets with a multiplier effect in the banking sector. Especially, in the event of the US financial crisis, we have seen that there was a huge shortage of the dollar which was the primary currency for settlement for international trade. So, it is possible that although the central bank takes the initiative to absorb excess liquidity, the market may be shocked due to the liquidity shortage generated in the interbank segment of the transactions. Interestingly, the interbank transactions are completely self-regulated except the fact that the banks' treasury mid-office can play the role of certain limits, like VAR limit, stop loss limit, daylight limit, or overnight limit for carrying a position. Therefore, the important challenge for future banking is that liquidity may be affected due to global shock and the central bank has to be prepared for such shock in the system.

As the popularity of Forex swaps continues to rise, these markets have the potential to connect global Forex markets even more. Policymakers have long been aware of the risks associated with banks' foreign exchange activities, particularly during times of increased volatility in exchange rates. The BCBS observed that banks can suffer significant losses in a short

amount of time due to their participation in foreign exchange transactions. It was further stated by the BCBS that regulators must remain watchful to prevent Forex-related risks from ever becoming so extensive that they jeopardize the banks' solvency and liquidity, as well as the overall health and stability of the banking system (Barkbu and Ong, 2010)[2].

Given this background, we endeavor to examine if the Indian market is exposed to external shocks by testing if the most liquid segment of the markets is coupled with the other significant Asian markets and the US market. It has been noted that USD is appreciated against many currencies in the post-Covid era while volatility in USD/INR was well managed with a very slow appreciation. Considering trade balance and real sector growth, exchange rate stability is one of the desired conditions; however, it raises an important question if the well-managed exchange rate makes India protected or if there exists some other channels through which the risk can be spilled over across countries. We argue that liquidity in the Forex swap market can pose a probable threat to the availability of bank liquidity, irrespective of managed, pegged, or market-determined exchange rate. We examine India's Forex swap market integration with other major Forex markets such as the US, Japan, and Singapore, and observe if the liquidity crisis of one market may spill over to the others. Our analysis sheds light on risk spillover through the liquidity of the Forex swap market.

The rest of the chapter is organized as follows. In Section 5.2, we present a comprehensive review of the studies that have examined the interlinkages of real sector growth, contribution of finance and how banking channel has become important in connecting the exchange rate channel and the real sector growth. Section 5.3 provides a brief background on the database and methodology. We present the descriptive statistics in Section 5.4. We summarize our findings on the ARDL model and the bound test in Section 5.5. Section 5.6 concludes and offers some policy implications.

5.2. Literature Review

Financial market integration can be classified into two types: horizontal and vertical (Sanati, 2010). Horizontal integration takes place within the domestic financial markets and relies on intermediaries' efficient and growing participation. The integration of the domestic markets plays a significant role in indicating the interest rate, which is based on a fundamental reference rate. Vertical integration, on the other hand, happens within the international financial markets and is a result of the capital account's openness and liberalization of the stock market. The integration of international finance makes the financial system more competitive by creating more opportunities for better investment projects, maintaining a suitable balance of liquidity across different markets, and unifying rates of return. These factors influence international investment decisions and risk-sharing (Lane and Milesi-Ferretti, 2003).

The coupling among financial markets is expected to offer valuable insights that aid in comprehending how transmission occurs from one market to another, where returns or asset prices hold a significant influence in shaping saving and investment behavior. In the context of financial market prices, Taylor (1995) highlights the significance of three types of prices – exchange rates, long-term interest rates, and short-term interest rates – when examining the impact of monetary policy changes on the real gross domestic product. It is important to note that the financial markets channel has become stronger over time and has a multiplicative impact on the real sector economy through the banking channel (Sanati, 2013).

Several macroeconomic and financial channels play a major role in reaping the benefits of financial integration. While it is well established that finance matters for the growth of the economy (Robinson, 1952), the coupling of

2. International standards and regulations have been established to address the risks associated with Forex instruments and promote more transparency in their disclosure. These regulations encompass the Basel Accords (Basel I and Basel II), as well as the International Financial Reporting Standards (IFRS). When participating in the over-the-counter (OTC) Forex derivatives market or using other derivatives instruments, parties typically enter into standardized contracts issued by the International Swaps and Derivatives Association (ISDA) with their counterparties. These contracts usually include provisions aimed at reducing credit risk.

financial markets and the real sector economy may also lead to systemic risk. Four interconnected channels are predominant in establishing the connection between finance and the real sector economic growth: a) Credit-based channel, b) Interest rate channel, c) Exchange rate channel, and d) Asset price channel. While each of these channels has its significance, in the recent past we have observed that exchange rate channels played a significant role in financial market turmoil. While Keynesian economics stressed the interest rate channel, Taylor (1995) emphasized that both the interest rate and the exchange rate channels are interdependent. Innovations in the international financial markets have led to significant improvements in efficiency. These innovations have widened and made the range of instruments available for borrowing and hedging interest rate and exchange rate exposures more flexible. In recent times, these advancements have helped banks and their customers manage the challenges caused by the increased volatility of exchange and interest rates, proving to be invaluable (BIS, 1986).

Bagehot (1873) and Schumpeter (1912) believed that banks were highly efficient institutions in identifying and funding more productive investments, which, in turn, spurred innovative growth. It is widely acknowledged that banks play an essential role in financing development, especially in developing countries, as they facilitate the strategic allocation of savings (Gerschenkron, 1962). Stiglitz (1985) and Singh (1997) suggested that the banking sector is a better-organized institution in addressing the agency problem and overcoming the many shortcomings of a market-based system. Moreover, since banks operate in the long run, they can effectively monitor and play an important role in corporate governance (Bhide, 1993). Moore et al. (2016) have opined that Forex trading has become increasingly relationship-driven, even though in an electronic form. According to them the changes in market participants and their trading patterns may significantly impact market functioning and Forex spot market liquidity resilience in the future.

In recent years, the foreign exchange market has experienced turbulence, especially in the Forex swap market, raising concerns about macroeconomic stability during the 2007-08 US financial crisis. It is worth noting that Forex swaps are a financial product used exclusively by banks and among banks. While Forex swaps did not cause any shocks on their own during the recent crisis, their extensive use in global financial markets by banks (amounting to 3.8 trillion a day) had exacerbated pre-existing tensions as they were being used to raise funds and hedge risks. These deals could also result in significant fluctuations in exchange rate premiums during times of market turbulence, which could have implications for economic performance. Despite being a highly liquid market, the proliferation of cross-border transactions in Forex swaps made it vulnerable to the fallout from the international liquidity crunch.

At the onset of the turbulence in the Forex swap markets, the main problem was the scarcity of US dollar funding among financial institutions outside the United States. These institutions were in dire need of US dollars to fund their operations, but the participants in the interbank market who had previously supplied the currency were hoarding liquidity to support their own funding requirements. As a result, many non-US financial institutions had to rely on the Forex swap markets to obtain US dollar liquidity, which made the market increasingly one-sided. During this phase, the hedging activities and speculative plays via the Forex swap market also amplified the volatility in the Forex spot market for several currencies.

The significance of banks in the Forex swap market cannot be overstated. They serve as major dealers and users of Forex swap instruments, providing stability to the financial landscape and supporting economic activity. Any disruptions in this market have the potential to create far-reaching consequences. The recent crisis brought into focus the stress caused by disruptions in the Forex swap market segment, which raised concerns in some countries about their banks' ability to meet their funding needs. This, in turn, could potentially impact the supply of credit to the local economy and the financing of the balance of payments. The crisis also underscored the critical role of central banks in maintaining stability in the Forex swap markets.

It may be noted that India's exchange rate is not market-determined, instead, it is highly managed by the central bank. Also, the Singapore exchange rate follows a fixed peg. We argue that despite the goal of a stable exchange rate, the liquidity of the Forex swap market may be highly interlinked with the global market and explore whether it poses any sudden threat to the liquidity of the overall economy. We aim to empirically estimate the linkages between the Indian Forex swap market and the global market to provide a better understanding of the potential risks and impacts on the economy.

5.3. Data and Methodology

We have extracted Forex swap turnover data from the respective countries' central bank websites. For example, Forex swap turnover data of the USA is downloaded from the Foreign Exchange Committee (FOREXC) which is sponsored by Federal Reserve Bank of New York. In October 2004, the Survey of North American Foreign Exchange Volume was introduced to offer the market frequent updates on the size and structure of foreign exchange activity in North America. This survey provides valuable information regarding the volume and nature of foreign exchange transactions taking place in the region.

The FOREXC and the Foreign Exchange Joint Standing Committee in London collaborated to collect data on foreign exchange turnover. The data included customer, product, currency pair, and execution data, and was collected in April and October for one month.[3] The most recent survey effort included participation from twenty-one leading institutions that are active in the North American market. The data pertaining to Forex swaps in the Singapore market has been collected from the Singapore Foreign Exchange Market Committee (SFEMC)[4] to promote the growth and development of Singapore as a leading global financial centre in Asia. SFEMC has a specific focus on foreign exchange, money markets, fixed income, and derivatives markets. Data relating to Forex swap transactions in Yen is collected from The Tokyo Foreign Exchange Market Committee (TFEMC)[5] which releases the results of Turnover Survey of the Tokyo Foreign Exchange Market covering transactions on a regular frequency. The TFEMC surveys provide market participants with developments in the Tokyo foreign exchange market in an appropriate and timely manner, thereby contributing to the sound growth of the market. In conducting the survey, the Financial Markets Department of the Bank of Japan provides technical assistance in collecting and processing the data of respective respondents. For the Indian market Forex swap turnover data has been collected from the RBI database. For each of the countries, we have taken bi-annual data from October 2005 to April 2023.[6]

As we deal with time series econometrics, we first check the non-stationarity of all the variables by using *Augmented Dickey-Fuller* (ADF) test (Dickey and Fuller, 1979, 1981). In ADF test (Equation 5.1) the null hypothesis is the presence of unit root or the level variables are non-stationary. The null and alternative hypotheses may be written as H_0: $\gamma=0$ or the presence of unit root.

$$\Delta y_t = a_0 + \gamma y_{t-1} + \Sigma_{i=2}^{p} \beta_i \Delta y_{t-i+1} + \varepsilon_t \qquad \text{Equation 5.1}$$

Where $\gamma = -(1 - \Sigma_{i=1}^{p} a_i)$ and $\beta_i = -\Sigma_{j=1}^{p} a_j$

Autoregressive Distributed Lag models or ARDL models are least squares regressions that utilize lags of both the dependent variable and explanatory variables as regressors (Greene, 2008). Although the use of ARDL models in econometrics has been prevalent for decades, they have gained popularity in recent years as a tool for analyzing cointegrating relationships between variables. This is largely due to the contributions made by Pesaran and Shin (1998) as well as Pesaran, Shin, and Smith (2001).

The investigation employs the ARDL approach to cointegration, which was developed by Pesaran and Pesaran (1997) and subsequently redeveloped into a bounds-testing approach by

3. See https://www.newyorkfed.org/Forexc/Forex-volume-survey (accessed 30 October 2024).
4. See https://www.sfemc.org/statistics/ (accessed 30 October 2024).
5. See https://www.Forexcomtky.com/survey/index_e.html#latest (accessed 30 October 2024).
6. Some of the countries like the UK or BRICS countries have not been considered due to insufficient data availability.

Pesaran, Shin, and Smith (2001). We do not employ SVAR method as the necessary condition for the SVAR is that variables have to be stationary. Though it is possible to consider the non-stationary variables in the first difference form which is stationary in our case, it removes the trend component. The reason for choosing the ARDL approach is that it has several comparative advantages over other cointegration methods such as Engle and Granger (1987), Johansen and Juselius (1990), and Johansen (1988) approaches. These other methods require variables to be integrated at first difference order, I(1), and must assume equal lag length in the model. However, the ARDL method can be used to circumvent the requirements of same-order integration of the variables and can very well be used to test the lag relationship and long-run cointegration among the variables that are integrated into different orders (Pesaran and Pesaran, 1997). The ARDL bounds test approach is a useful method to determine the long-term relationship between variables, and it also offers a model to estimate the short-term coefficients of the variables if they are cointegrated in the long run. In the Conditional Error Correction Model Specification, the joint significance test (Wald test) F-statistic is used to assess the significance of the lagged levels of the variables in the first difference regression.

Pesaran, Shin, and Smith (2001) developed two asymptotic sets of critical values for large sample studies and F-statistic is compared with these critical values. Depending on the existence of the deterministic trend in the model, the critical values constitute the lower bound and upper bound for I(0) and I(1) respectively. The null hypothesis of the bound test is 'no existence of long-run equilibrium'. If the F-statistics falls above the upper bound, we reject the null hypothesis and the long-run level relationship is said to exist among the variables; if the F statistics falls below the lower bound, we do not reject the null hypothesis and conclude that the long-run level relationship among the variables does not exist. The decision whether there exists cointegration among the variables remains inconclusive if the F-statistics falls in between the upper and the lower bounds (Pesaran and Shin, 1998; Pesaran, Shin, and Smith, 2001).

The assumption of uncorrelated residual is a mandatory requirement for the Conditional Error Correction Model (long-run ARDL model). The conclusion on the serial correlation of the error term is sensitive to the appropriate selection of the lag length criteria (Pesaran, Shin, and Smith, 2001). The three popular methods in selecting the optimal lag length criteria are Akaike Information Criterion or AIC (Akaike, 1974), Schwarz Bayesian (or Information) Criterion or SBC (Schwarz, 1978) and Hannan-Qiunn Criterion or HQC (Hannan and Quinn, 1979) methods. The lag length at which the information loss is minimum is the optimal lag (Enders, 2014).

If γ_t is the dependent (autoregressive) variable, $x_{1t},...,x_{kt}$ are k distributed lag explanatory variables, and $d_{1t},...,d_{mt}$, are m exogenous, potentially deterministic variables, the Intertemporal Dynamics representation of an ARDL $(p,q1,.....qk)$ model is given by

$$y_t = \Sigma_{j=1}^{p} \psi_j y_{t-j} + \Sigma_1^k \Sigma_{j=0}^{pr} \beta_{r,j} x_{r,t-j} + \Sigma_{s=1}^{m} \alpha_s d_{s,t} + \varepsilon_t$$

Equation 5.2

where ε_t, are the innovations and α_s, ψ_j, $\beta_{r,j}$ are the coefficients associated with the exogenous variables, p lags of y_t and p_r lags of the k distributed lag regressors x_r, respectively.

If cointegration is identified by the rejection of H_0, the long-run and short-run coefficients of the Forex swap transactions for India, Japan, Singapore and the USA are estimated in Equations 5.3 and 5.4 respectively (Pesaran, Shin, and Smith, 2001).

$$India_t = \alpha_1 + \sum_{i=1}^{p} \beta_{1i}\, India_{t-i} + \sum_{i=m}^{p} \gamma_{1i} Japan_{t-i} + \sum_{i=m}^{p} \delta_{1i}\, Singapore_{t-i} + \sum_{i=m}^{p} \varphi_{1i} USA_{t-i} + \varepsilon_{1t}$$

Equation 5.3

$$\Delta India_t = \alpha_2 + \sum_{i=1}^{p} \beta_{2i}\, India_{t-i} + \sum_{i=m}^{p} \gamma_{2i} \Delta Japan_{t-i} + \sum_{i=m}^{p} \delta_{2i}\, Singapore_{t-i} + \sum_{i=m}^{p} \varphi_{2i} \Delta USA_{t-i} + \varphi ECM_{t-1} + \varepsilon_{2t}$$

Equation 5.4

TABLE 5.2

Descriptive Statistics

	India	*Singapore*	*USA*	*Japan*
Mean	392582.74	4191336.5	5302259.3	36253
SD	131798.44	2207314.3	1228510.4	9121.63
CV	33.572142	52.663734	23.2	25.1608
Kurt	0.7338998	0.002353	-0.462320	-1.0803
Skew	0.5260174	0.8832465	-0.055522	-0.2152

Source: Author's Compilation.

The coefficients of the level variables in the long run at optimal lag are represented by Equation 5.1. Equation 5.2 is the ARDL short-run specification or the speed of adjustment; it is derived through the construction of an error correction model (ECM). ECM represents the speed of adjustment that brings back equilibrium if there is any deviation as a result of shocks, thus it must be negative and significant. The ECM is therefore the error correction term and is lagged by one period to show the percentage of its speed of adjustment from a shock in the previous period to equilibrium in the current period.

5.4. Preliminary Analysis

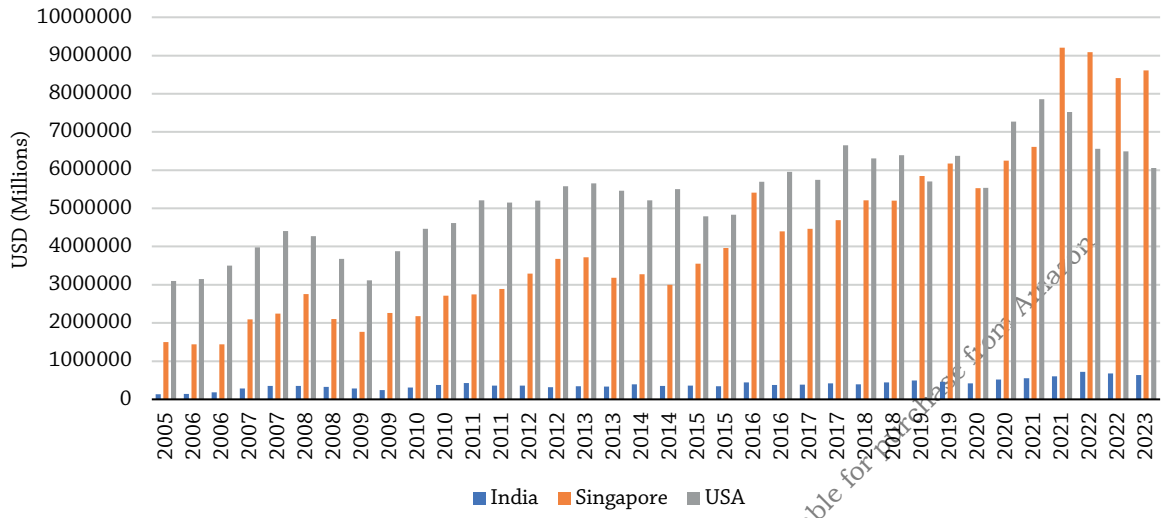
Before we present the result of the econometric analysis, this section describes the primary analysis with respect to India's Forex swap liquidity in the global context. Table 5.2 shows the descriptive statistics. It is worth noting that the USA and Japan have a negative kurtosis value, which suggests that there is no tail-risk associated with their respective distributions. In contrast, Singapore has a kurtosis (kurt) value that is almost zero, indicating a relatively low likelihood of extreme events. India, on the other hand, has a positive kurtosis value, which implies that the distribution of its data has fatter tails and is more prone to extreme outcomes. Also, negative skewness (skew) values for the USA and Japan imply that the probability is high that these two market segments generate higher-value transactions while the positive skewness for India and Singapore indicates that the probability is high that there is lower value transaction. The coefficient of variation (CV) indicates the risk per unit of return in Forex swap transactions for USA and Japan is almost the same. However, India experiences a relatively higher risk per unit of return compared to the USA and Japan. However, in Singapore market, the risk per unit of return in Forex swap transactions is almost two-fold of the USA and Japan.

The figure presented below displays the liquidity and trends in the four market segments of India, Japan, Singapore, and the USA. Upon analysis, it is evident that the US market is unparalleled when it comes to Forex swap transactions. Among the three Asian countries, Singapore's market stands out as the most advanced in terms of Forex swap transactions. Despite Japan's highly developed market, it has significantly lower liquidity compared to Singapore. In contrast, India's market is increasingly demonstrating advancements in its trend.

According to the correlation analysis conducted (Table 5.3), there exists a positive and significant correlation between various market segments. The analysis further reveals that the Singapore market demonstrates a relatively stronger linear relationship with all the other markets. However, it can undoubtedly be claimed that the USA, JAPAN, India and Singapore markets all show a very strong correlation with each other. Additionally, the Indian market exhibits a relatively high significant linear relationship with the Singapore market.

FIGURE 5.1

Forex Swap Transactions: Liquidity and Trend



Source: Author's Compilation from respective Central Bank Databases.

TABLE 5.3

Correlation Analysis

	India	*Singapore*	*USA*	*Japan*
India	1			
Singapore	0.93***	1		
USA	0.81***	0.84***	1	
Japan	0.79***	0.85***	0.81***	1

Note: *** indicates statistical significance at 1% level.

Source: Author's Estimation.

5.5. Empirical Analysis

This section summarizes all the econometric analysis to understand if the Indian economy is decoupling in Forex market transactions. We begin by estimating the ADF test for the overall liquidity in Forex swap for the US, Japan, Singapore, and India. Table 5.4 shows that all the variables, that is India, Singapore, and the USA are non-stationary at the level and stationary at first difference. However, Japan was found stationary at the level at the 5 % level of significance. So, we conclude that Forex swap markets for all the countries–the US, Singapore, and India–are integrated at order 1, or they are I(1); however, the Forex swap market in Japan follows a stational time path or it is I(0). The result is concluded considering Akaike Information Criteria (AIC) at minimum. Also, we have allowed trend and intercept in the level equation of the ADF test and intercept in the first difference.

TABLE 5.4

Stationarity Test

India	*Level - Trend and Intercept*	*I(1) [pr=0.2788]*	*Non-Stationarity*
	1st Difference-Intercept	I(0) [pr=0.0000]	Stationary***
Japan	Level - Trend and Intercept	I(0) [pr=0.0159]	Stationary**
Singapore	Level - Trend and Intercept	I(0) [pr=0.3625]	Non-Stationary
	1st Difference – Intercept	I(1) [pr=0.0000]	Stationary***
USA	Level - Trend and Intercept	I(0) [pr=0.1090]	Non-Stationary
	1st Difference – Intercept	I(1) [pr=0.0000]	Stationary***

Note: *** indicates statistical significance at 1% level.

Source: Author's Estimation.

For the ARDL model, as our Equations 5.1 and 5.2 describe, we have considered India as the dependent variable while Japan, Singapore, and the USA are considered as the regressors. We have allowed a maximum of 4 lags for the dependent and regressor variables. However, using AIC we have found the optimal model of ARDL with lags of 2, 1, 0, and 4 for India, Japan, Singapore, and the USA respectively (Table 5.5).

TABLE 5.5

ARDL Test Result with ECM

	With ECM
INDIA(-1)	-0.74***
JAPAN(-1)	0.35
USA(-1)	-0.02
SINGAPORE**	0.046***
C	203403.1
D(INDIA(-1))	0.22
D(JAPAN)	-3.23
D(USA)	0.007
D(USA(-1))	0.009
D(USA(-2))	0.028**
D(USA(-3))	0.027**
CointegEqn	-0.74***

Note: 1) *, **, *** indicate statistical significance at 10%, 5%, and 1% level, respectively.

2) Deterministic: Restricted constant and no trend.

Source: Author's Estimation.

According to Table 5.5, there is a strong connection between the liquidity of the Forex swap market in India and the liquidity of the Forex swap of Singapore markets. The result is more interesting as the Singapore market exchange rate is pegged. So it necessarily concludes that managed or pegged foreign exchange rates may not be sufficient to control the liquidity crisis triggered by the interbank Forex swap market. The study reveals that the short-run adjustment factors for second and third lags in the US market establish long-run equilibrium and though lagged, has a greater influence on India's Forex swap liquidity. On the other hand, the impact of the Singapore market liquidity is more instantaneous. The results suggest that the Forex swap liquidity in India is highly dependent on the liquidity conditions in the Japanese and Singapore Forex swap markets. However, India's Forex swap liquidity reacts to the US market with a lag impact.

Table 5.6 describes that at all levels of significance, that is 10%, 5% and 1% we reject the null hypothesis of 'no long-run equilibrium' or 'no cointegration'. This is because the estimated F-statistics is larger than the upper bound of critical values for all the levels of significances. Therefore, we conclude that there exists long-run equilibrium across the Forex swap segments of the countries like India, Japan, Singapore, and the USA. So, any liquidity crunch in one segment of the market may be rolled over to the other segments of the market. Also, ECM shows that the short-run adjustment factor is negative and significant.

5.6. Conclusion

In this paper, we examine if the Indian Forex exchange market is decoupled with the global foreign exchange market as India follows a managed float in determining its exchange rate. This study argues that irrespective of the central bank's role in the exchange rate stability, the real sector economy may still be exposed to potentially far-reaching systemic risk through

TABLE 5.6

Bound Test

F-statistic	*6.736978*					
	10%		*5%*		*1%*	
Sample Size	*I(0)*	*I(1)*	*I(0)*	*I(1)*	*I(0)*	*I(1)*
30	2.676	3.586	3.272	4.306	4.614	5.966
35	2.618	3.532	3.164	4.194	4.428	5.816
Asymptotic	2.37	3.2	2.79	3.67	3.65	4.66

Source: Author's Estimation.

the liquidity exposure of the Indian interbank segment to the global segment. In the past, during the US financial crisis it was found that banks play a critical role as key dealers and users of Forex instruments and as anchors for financial stability and economic activity. Given the fact that the bank is the only player in the Forex swap market segment, the liquidity crunch in the banking system due to the one-sided dollar market (only buyer and no seller) is likely to be rolled over to the real sector economy. Banks' funding needs may impact the supply of credit to the local economy and the financing of the balance of payments.

Against this backdrop, we empirically examine the integration of the Forex swap market, with a few Asian economies and the US market to understand if the liquidity of the Forex swap segment is interlinked. We argue that the Forex swap market plays a vital role in promoting financial stability through cross-border investments and trade. Our preliminary analysis shows that there exists a high positive statistically significant correlation across the markets. Our econometric analysis shows a long-run equilibrium. This long-run equilibrium is established by a lag impact on the short-run adjustment factor for the US market, while Singapore shows an instantaneous impact in the long run.

So, we conclude that the mounting liquidity in the Forex swap markets has the potential to connect global Forex markets even more despite the managed, pegged, or free exchange rate system. Thereby, the possibility is very high that banks may incur a huge amount of exposure to the global Forex market through the Forex swap segment. Although BCBS has particularly emphasized that the vigilance of supervisors must be to ensure that the risks from banks' Forex operations never become so large that they threaten their solvency and liquidity, the biggest challenge to the supervisor is that the Forex swap interbank market segments are globally self-regulated segment, and it is an individual bank's risk appetite which determines the total exposure in the market.

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6

Augmentation of Insurance Business in India

Role of Commercial Banks

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6.1. Introduction

Insurance is crucial for both individuals and the nation, providing a safety net that ensures financial stability, promotes economic growth, and supports social well-being. Despite the presence of numerous insurance companies in India, both in the public and private sectors, the penetration rates for both life and non-life insurance are not adequate. One effective strategy that insurance companies are adopting to distribute their products is partnering with commercial banks, a practice known as Bancassurance. Banks, with their extensive branch networks, are well-positioned to sell financial products. Additionally, banks in India have recently developed a network of Business Correspondents (BCs) to serve the poor. By bundling insurance products with banking products banks can enhance the distribution of insurance. Bancassurance can thus boost the revenue and profitability of both insurance companies and banks, while also achieving the goal of greater and deeper penetration of insurance services, especially in underserved and unserved markets. This chapter explores the status of the insurance sector in India, focusing on bancassurance, and discusses the outlook and future directions.

The insurance industry in India has grown significantly in the last several years due to rise in disposable income of the public, growing public awareness, and government programmes that support financial inclusion. The performance of the insurance industry in India shows a strong growth amid changing economic and demographic conditions. According to the Annual Report of Insurance Regulatory and Development Agency of India (IRDAI), during 2022-23 the Life insurance industry recorded premium income of ₹7.83 trillion registering 12.98% growth over the previous year. The private sector life insurers have clocked a growth of 16.34% in premium income, while the public sector life insurers recorded 10.90% growth. During 2022-23, the non-life insurance industry underwrote a total direct premium of ₹2.57 trillion in India registering a growth of 16.40% over the previous year. Out of which, 27 private sector insurers (including standalone health insurers) have underwritten ₹1.58 trillion as against ₹1.30 trillion in 2021-22. The specialized insurers underwrote gross direct premium amounting to ₹15.82 billion. The public sector non-life insurers' market share was 38.42% while the private sector non-life insurers was the 61.58% (IRDAI, 2023).

Expansion of insurance coverage has been supported by government-led programmes especially in agriculture and healthcare. The government's flagship initiative for crop insurance, Pradhan Mantri Fasal Bima Yojana (PMFBY), has led to significant growth in crop insurance benefitting millions of agriculture farmers. Ayushman Bharat Pradhan Mantri Jan Arogya Yojana (AB PMJAY) aims at providing a health cover of ₹500,000 (US$ 6,075) per family per

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year for secondary and tertiary care hospitalization of the citizens. The Insurance cover for 44.6 crore persons under PM Suraksha Bima and PM Jeevan Jyoti Yojana was provided during FY2023 (*Economic Times*, 2024).

The chapter is divided into nine sections. Section 6.2 covers the decadal progress in the life insurance business. Section 6.3 traces the growth of non-life insurance business, over the last ten years. Section 6.4 compares the performance of the Indian insurance industry with other markets. Section 6.5 discusses Bancassurance business in detail. Section 6.6 focuses on its life insurance segment, while Section 6.7 analyses the non-life insurance component. The specific agenda of 6.8 is health insurance. Section 6.9 discusses the outlook for bancassurance and Section 6.10 concludes with policy recommendations.

6.2. Life Insurance in India

The Indian life insurance sector was opened to the private sector in 2001. Till then Life Insurance Corporation of India (LIC) was the only company to offer life insurance in India and LIC continues to be the largest life insurer in India. However, during the last ten years, LIC's market share has declined quite steadily from 75% during 2013-14 to around 60% during 2022-23. The size of the sector in terms of total sum assured was ₹200.47 trillion during 2022-23 and it was ₹66.47 trillion during 2013-14. During the 10 year period, the growth in the amount of life insurance assured grew at a CAGR of 13.05%. Nevertheless, the number of life policies issued has remained more or less the same during this period and it was 328.3 million at the end of FY 2023. Given the fact that the population of India is about 1.40 billion, number of life policies is too small.

In the Indian life insurance sector there were 25 insurance companies and 11256 offices as on March 31, 2023. According to IRDAI reports, during the financial year 2022-23, the number of new policies issued were 28.47 million, new business premium stood at ₹3.71 trillion and total premium was at ₹7.82 billion.

A major indicator of performance by insurers is the new business mobilised by them. New business in terms of new lives covered by the life insurance companies in the country during the last ten years is presented in Table 6.1. The table also shows the number of lives covered through various distribution channels. Direct selling by the insurers is the largest channel accounting for around 50%. Growth in the number

TABLE 6.1

New Business Mobilised by Life Insurers in India during the Period 2013-14 to 2022-23 (in ₹ Million)

Particulars	*2013-14*	*2014-15*	*2015-16*	*2016-17*	*2017-18*	*2018-19*	*2019-20*	*2020-21*	*2021-22*	*2022-23*
Individual agents	48.44	28.59	24.80	23.70	24.18	28.11	23.63	22.56	24.37	23.79
Corporate agents-Banks	5.61	6.90	8.52	5.78	19.59	45.51	61.91	50.37	61.87	51.90
Corporate agents-Others	5.32	34.42	28.87	7.00	10.98	13.14	13.31	9.32	13.93	42.70
Brokers	4.11	5.79	8.76	14.14	17.50	21.43	17.59	14.07	15.15	22.54
Direct selling	71.37	72.52	127.02	154.68	141.61	139.23	132.13	104.90	122.25	144.89
Common Service Centres		0.00	0.01	0.01	0.02	0.03	0.02	6.14	6.83	9.20
MI Agents		0.51	0.55	0.69	1.74	5.36	7.57	0.03	0.09	0.12
Web Aggregators			0.00	0.02	0.06	0.13	0.14	0.16	0.06	0.01
IMF			0.00	0.00	0.01	0.01	0.01	0.02	0.03	0.03
Online			0.21	0.26	0.29	0.32	0.30	0.30	0.25	0.18
Point of sale					0.01	0.04	0.08	0.02	0.02	0.02
Others, if any			0.00	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Total	134.85	148.73	198.74	2062.61	215.99	253.30	256.70	207.90	244.85	295.36

Source: IRDAI, Handbook on Indian Insurance Statistics 2022-23.

TABLE 6.2

Growth in Number of New Lives Covered through Major Channels

Year	*Individual Agents*	*Corporate Agents-Banks*	*Corporate Agents-Others*	*Brokers*	*Direct Selling*	*Total*
2014-15	-41.00%	23.00%	546.60%	41.00%	1.60%	10.30%
2015-16	-13.20%	23.40%	-16.10%	51.20%	75.10%	33.60%
2016-17	-4.40%	-32.20%	-75.80%	61.30%	21.80%	937.90%
2017-18	2.00%	239.10%	56.90%	23.80%	-8.40%	-89.50%
2018-19	16.30%	132.30%	19.70%	22.50%	-1.70%	17.30%
2019-20	-15.90%	36.00%	1.30%	-17.90%	-5.10%	1.30%
2020-21	-4.50%	-18.60%	-30.00%	-20.00%	-20.60%	-19.00%
2021-22	8.00%	22.80%	49.40%	7.70%	16.50%	17.80%
2022-23	-2.40%	-16.10%	206.50%	48.80%	18.50%	20.60%
CAGR	-7.60%	28.00%	26.00%	20.80%	8.20%	9.10%

Source: Compiled by the authors from IRDAI, Handbook on Indian Insurance Statistics 2022-23.

of new lives covered is presented in Table 6.2. The tables show that the number of new lives covered has increased from 134.85 million in FY2013-14 to 295.36 million in FY 2022-23. This translates to a CAGR of 9.1%.

According to the data released recently by the IRDAI, in the financial year 2023-24 the new business/first year premium collected by private sector life insurers was ₹1.55 trillion and by LIC was ₹2.22 trillion totalling ₹3.77 trillion. Thus, the market share of LIC in new business was 58.87% and that of the private sector life insurers was 41.13%.

6.3. Non-Life Insurance in India

The major segments under non-life insurance are fire, marine, motor and health. As on March 31, 2023, in non-life insurance sector there were 33 companies (including standalone health insurers and reinsurers), the number of foreign reinsurers' branches were 11 and number of offices of insurers were 1197. The number of new policies issued in 2022-23 were 301.81 million and Gross Direct Premium (GDP) within and outside India was ₹2.60 trillion, wherein, within India GDP of Fire, Marine, Motor, Health and Others stood at ₹23.94 billion, ₹5.06 billion, ₹81.28 billion, ₹97.66 billion, and ₹48.96 billion respectively. In comparison to FY 2021-22, the gross direct premiums of Fire insurance grew by 11%, Marine 21%, Motor 15%, Health 21% and Others by 11%. Assets under management of non-life insurance companies in the country at the end of FY 2013-14 was ₹1.50 trillion and the same increased to ₹5.41 trillion at the end of 2022-23.

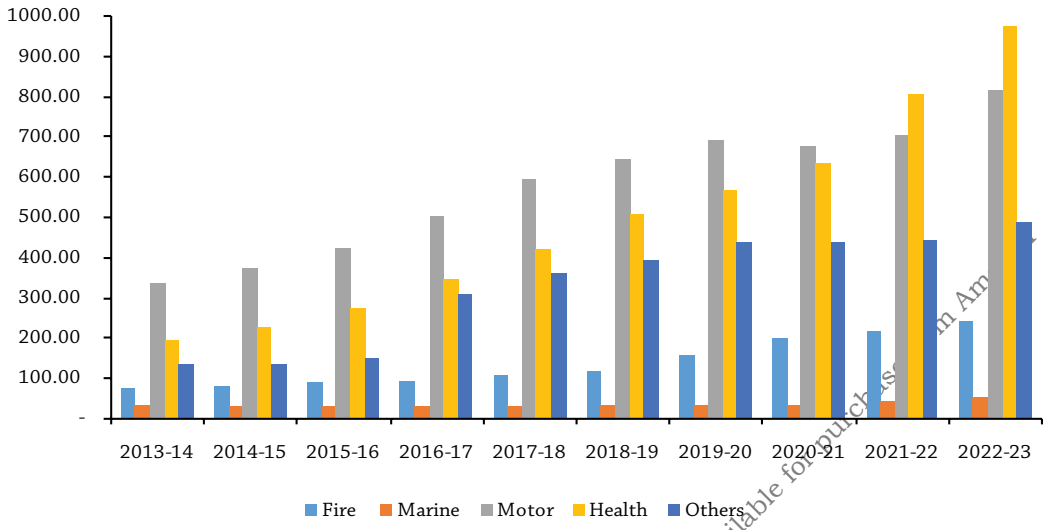
The last decade has witnessed a dynamism in the Indian non-life insurance sector. The major development is the decline in the market share of public sector insurers from around 56% to 38%. Figure 6.1 shows the share of fire insurance, marine insurance, motor insurance, health insurance, and others. The figure shows that all types of non-life insurance, excepting marine insurance, have grown fantastically. Motor insurance was the largest segment till 2021 and health insurance has become the largest since last two years.

Growth in gross insurance premium collected by non-life insurance companies in the country during the last 10 years from 2013-14 to 2022-23 was 14.20% CAGR. The segment which attained the highest growth during this period was health insurance and its share has become the largest at 38%. The lowest growth has happened in marine insurance at 5.4% and its share is the lowest at 2%.

Table 6.3 shows that up to December 2023 of FY 2023-24, the GDP income of non-life insurers was ₹2134.86 billion of which ₹786.28 billion was health insurance, ₹661.39 billion was

FIGURE 6.1

Trend in Different Non-Life Insurance Segments in India (₹ Billion)



Source: Made by the authors from IRDAI, Handbook on Indian Insurance Statistics 2022-23.

TABLE 6.3

Gross Direct Premium (GDP) During April–December 2023 (Provisional)

Segment	*GDP by Private Sector Insurers*		*GDP by Private Sector Insurers*		*Total GDP*	
	Amount (₹ Billion)	*Share*	*Amount (₹ Billion)*	*Share*	*Amount (₹ Billion)*	*Share*
Health	470.57	34.2%	315.68	41.5%	786.27	36.8%
Motor	475.11	34.6%	186.23	24.5%	661.38	31.0%
Crop	132.52	9.6%	91.29	12.0%	223.73	10.5%
Fire	129.09	9.4%	72.44	9.5%	201.53	9.4%
Others	167.44	12.2%	94.41	12.4%	261.73	12.3%
Total GDP	1374.73	100.0%	760.13	100.0%	2134.86	100.0%

Source: Compiled by the authors from IRDAI, Handbook on Indian Insurance Statistics 2022-23.

motor insurance, ₹201.60 billion was fire insurance, ₹223.75 billion was crop insurance and ₹261.84 billion was from other segments. The share of public insurers in the GDP was around 36% and that of the private sector insurers was 64%.

6.4. Indian Insurance Industry in Comparison to Other Markets

Penetration of insurance and density of insurance are the two indicators showing to what extent the potential business has been tapped. Insurance penetration is measured as the ratio of total insurance premiums to gross domestic product and is used to gauge the growth of the insurance industry within a nation. Insurance density is the ratio of premium underwritten in a given year to the total population. Adequate penetration and density ensures sufficient risk coverage and effective spread of insurance in the society. The trends in insurance penetration and density in life and non-life insurance in India are given in Figure 6.2 and Figure 6.3.

While the Indian insurance industry continues to grow year-on-year on the back of varied factors, the life insurance market penetration remains at 3.2 for the year 2021 and 2022 and it declined to 3 in the year 2023. The considerable protection deficit and limited distribution reach in the country are significant causes of

concern. Despite ample of opportunities in the market and variety of products and increasing affordability of the people, the non-life insurance segment has shown same level of penetration since year 2020-21.

Since 2013 the insurance density in India has shown upward movement and the life insurance density reached US$ 70 in financial year 2022-23. In non-life insurance density was constant at US$ 11 from year 2018 to 2021, then for the years 2022 and 2023 it maintained the similar levels at US$ 22.

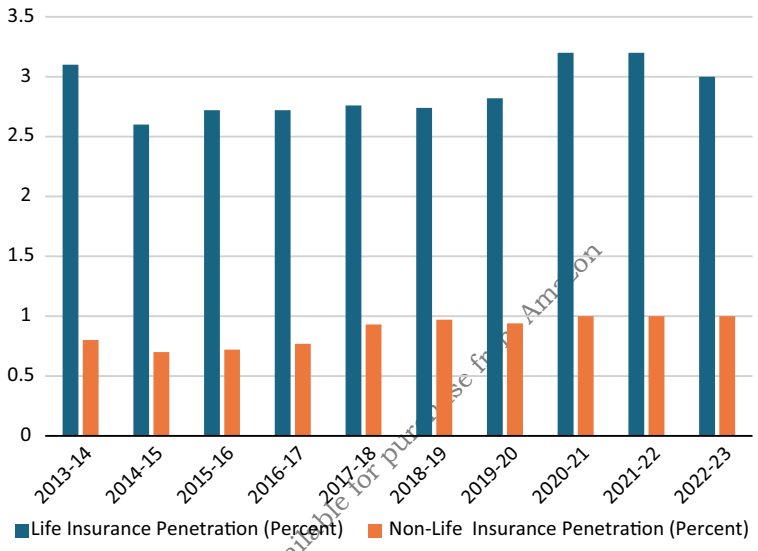
According to Swiss Re, insurance penetration and insurance density in India is one of the lowest in the world. Insurance penetration including life and non-life in India was 4.00 during the year 2022. Whereas, the penetration in USA was 11.6 and Japan 8.2. Similarly, the insurance density in India was 992 and that of USA and Japan were 8885 and 2690 respectively. (Swiss Re Institute, 2024). These numbers can be read against the backdrop of recent developments and India's ambition to become a developed economy. Given the supportive policy environment, we find that the Indian insurance industry has tremendous potential to grow.

6.5. Bancassurance

The distribution channels for insurance products involve a number of entities such as Individual Agents, Corporate Agents-Banks, Corporate Agents-Others, Insurance Brokers, Direct Selling, Micro Insurance Agents, Common Service Centres (CSCs), Web Aggregators, online business through company's website, etc. Selling insurance in India is an extremely challenging endeavour because of the country's vastness, its diversified population, lack of awareness and connectivity issues in its rural parts. To reach out to such a large consumer base, insurance businesses need more workforce and a wide distribution network. RBI Circular DBOD.No.FSC.BC.16/24.01.018/2000-2001 dated August 9, 2000, inter alia, permitted banks to set up insurance joint ventures on risk participation basis and also to undertake insurance business as agents of insurance companies on fee basis without any risk participation by banks and their subsidiaries. As per the circular

FIGURE 6.2

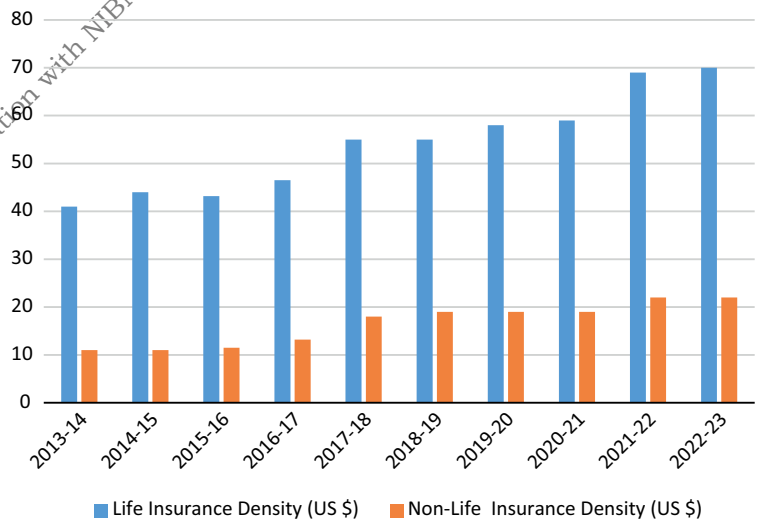
Insurance Penetration in India during Last 10 Years



Source: IRDAI, Handbook on Indian Insurance Statistics 2022-23.

FIGURE 6.3

Insurance Density in India during Last 10 Years



Source: IRDAI, Handbook on Indian Insurance Statistics 2022-23.

of RBI dated January 15, 2015 banks need not obtain prior approval of the RBI to act as corporate agents on fee basis without risk participation (RBI, 2015). This announcement was done consequent to the notification of Government of India specifying 'Insurance' as a permissible form of business that could be undertaken by banks under Section 6(1)(o) of the Banking Regulation Act, 1949. Subsequently, the IRDA published the IRDA (Licensing of Banks as Insurance Brokers) Regulations, 2013, allowing

banks to offer insurance brokerage services on a departmental basis.

In order to further increase the reach of insurance among the society the government of India enacted the Insurance Regulatory and Development Authority of India (Registration of Corporate Agents) Regulations, 2015 for solicitation and servicing of insurance business for any of the specified category of life, general or health insurance. The regulations governing the corporate insurance agents were further liberalised through Insurance Regulatory and Development Authority of India (Insurance Intermediaries) (Amendment) Regulations, 2022. One major amendment in the regulations is providing wider choice of insurers and products to the end customers. The amended regulation permits the Corporate Agents to have arrangements with nine life insurers, nine non-life insurers and nine stand-alone health insurers. As on March 31, 2023, there were 564 active Corporate Agents, out of which 241 were banks and the remaining 323 were Cooperative Societies, NBFCs, Limited Liability Partnership Firms and other eligible firms. The number of Corporate Agents increased significantly during FY2024 and it reached 635 by March 31, 2024.

The term 'bancassurance', created by fusing the French terms for 'bank' and 'insurance', refers to the sale of insurance products through banking channels. The Indian banking system has 12 public sector banks, 21 private sector banks, 2 Local Area Banks, 11 small finance banks, 6 payment banks, 44 foreign banks and 43 regional rural banks (RRBs). The Indian cooperative banking has a three-tier structure with 34 State Cooperative Banks, 351 District Central Cooperative Banks (DCCBs), and about 100,000 Primary Agricultural Credit Societies (PACS). The number of bank branches in the country is around 154,000.

Largely, the supply, product range and reach of banking in India is comparatively very wide. Commercial banks offer variety of financial products and services including deposit accounts, loan products, mutual funds, insurance, etc., under one roof. Other institutions like RRBs and cooperative banks provide access to financial services to people at grassroots level. On top of these, payment banks and small finance banks have entered the market to provide financial services to the public. Banks have always been the first choice of Indian customers when it comes to financial services. Stringent regulation by the RBI, high standardization and institutionalization in banks encourage customers to avail products and services offered by the banks without fear or hesitation (Care Edge Ratings, 2024).

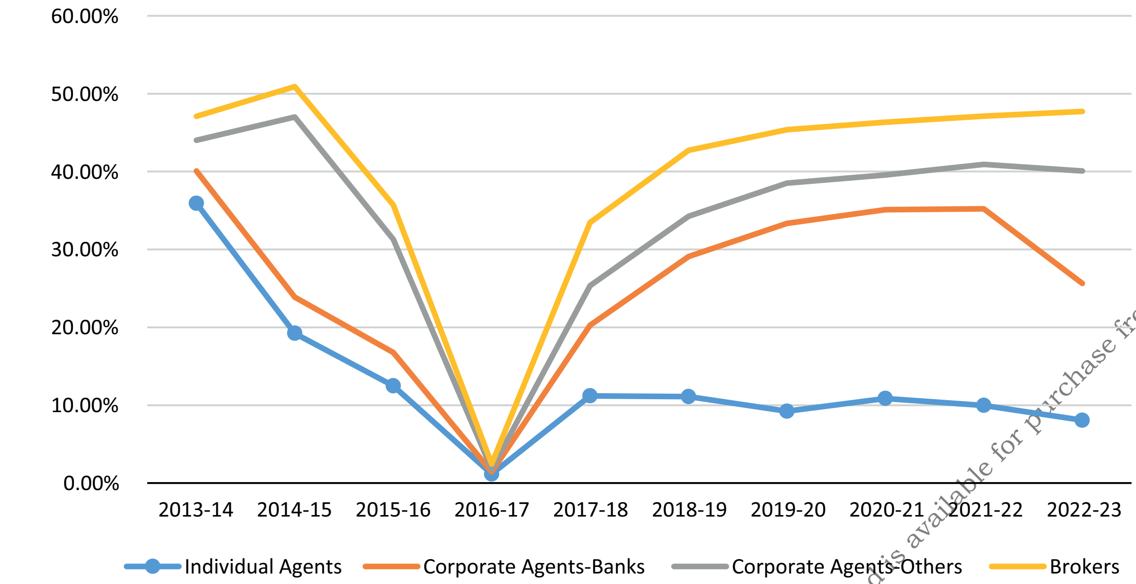
6.6. Distribution of Life Insurance

The largest channel for distributing life insurance in India is direct selling. Other major channels used by the life insurers in the country are individual agents, corporate agents-banks, corporate agents-others and insurance brokers. The share in distribution of life insurance by the major channels during the last ten years was as in Figure 6.4. It is quite clear from the figure that banks have sold the maximum amount of life insurance followed by other corporate agents. The share of banks in distribution of life insurance increased from below 5% during 2013-14 to around 25% during 2021-22 and it has declined to around 18% during 2022-23. During the same 10-year period the share of individual agents has declined sharply from around 36% to around 9%. However, during 2022-23 the share of corporate agents-others has increased significantly and the share of banks has decreased. It seems corporate agents-others are gaining market share in life insurance distribution at the cost of banks. Table 6.4 presents the statistics regarding number of life insurance policies sold and life premium collected through banks. During 2013-14 to 2022-23, the number of life policies sold by banks has grown at a CAGR of 6.50% and the premium collected through banks has grown at 19.50%. During this 10-year period the number of policies sold by banks has increased by 0.76 times to ₹4.10 million, whereas premium collected has increased almost by 4 times to ₹473.26 billion.

Banks have contributed 14% to the of Individual New Business (Life) and Group New Business (Life) by 7.65% in the year 2022-23. In last decade, the contribution of banks as cor-

FIGURE 6.4

Trend in the Share of Life Insurance Sold through Major Channels Other than Direct Selling



Source: IRDAI, Handbook on Indian Insurance Statistics 2022-23.

TABLE 6.4

Individual New Business of Life Insurance by Corporate Agents-Banks

Year	*Number of Policies Issued (Million)*	*Growth in Number of Policies Issued*	*Premium (₹ Billion)*	*Growth in Premium*
2013-14	2.33		95.23	
2014-15	2.41	3.70%	115.47	21.26%
2015-16	2.71	12.42%	138.92	20.30%
2016-17	2.88	6.12%	182.50	31.37%
2017-18	3.20	11.08%	232.05	27.15%
2018-19	3.39	6.08%	264.10	13.81%
2019-20	3.24	-4.61%	278.93	5.61%
2020-21	3.66	13.11%	330.27	18.41%
2021-22	3.76	2.75%	399.92	21.09%
2022-23	4.10	9.04%	473.26	18.34%
CAGR		6.50%		19.50%

Source: IRDAI, Handbook on Indian Insurance Statistics 2022-23.

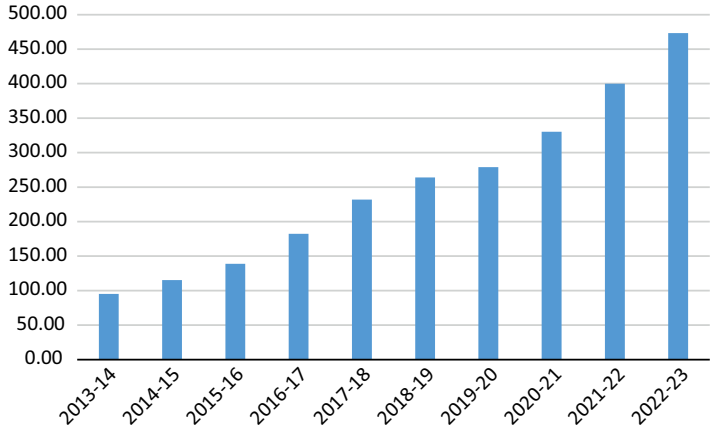
porate agents has increased as its contribution in Individual New Business (Life) increased from 5.70% to 14% and in Group New Business (Life) their share increased from 15.62% to 32.76% (IRDAI 2023). The rapid growth of life insurance business for banks, over the last decade, is shown in Figures 6.5 and 6.6.

6.7. Distribution of Non-Life Insurance

Non-life insurance covers everything other than life insurance including fire, marine, motor, aviation, travel, credit, health, etc. The trend in non-life insurance business can be

FIGURE 6.5

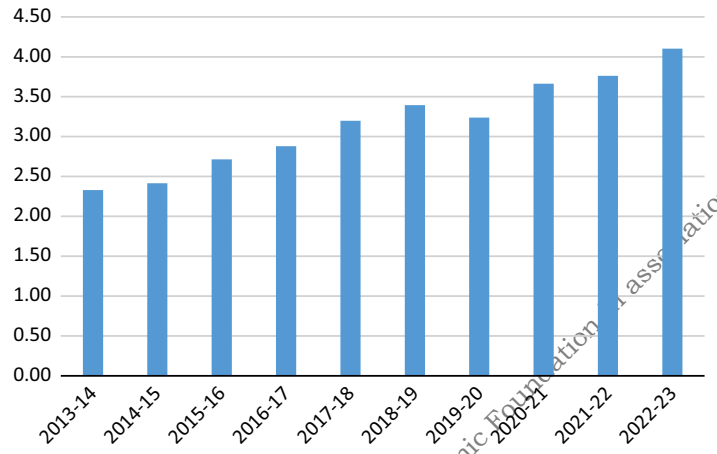
Life Insurance Premium Collected by Banks (₹ Billion)



Source: IRDAI, Handbook on Indian Insurance Statistics 2022-23.

FIGURE 6.6

Number of Life Policies Issued Through Banks During Last 10 Years (₹ Million)



Source: IRDAI, Handbook on Indian Insurance Statistics 2022-23.

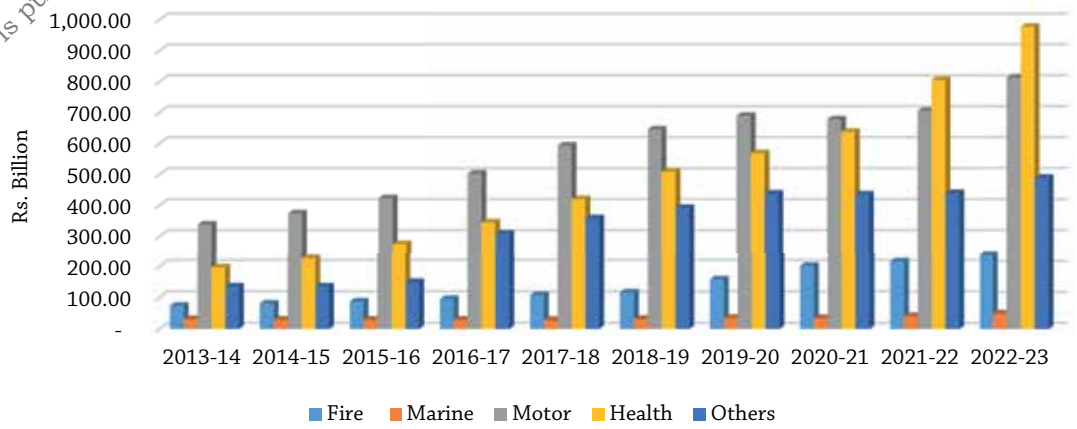
observed in Figure 6.7. The figure shows that the premium for non-life insurance products has increased dramatically during the last ten years ending FY 2023. However, health insurance has grown at the fastest rate from around ₹196 billion to around ₹977 billion and it has become the largest non-life insurance business in India. The next big segment is motor insurance which has grown by 1.4 times to ₹813 billion. On the contrary, the marine insurance is the smallest segment and it has experienced the lowest growth.

Few key statistics about non-life insurance business is presented in Table 6.5. The table shows that the number of new policies has increased from ₹104.82 million in 2013-14 to ₹301.81 million in 2022-23. During the period, gross direct premium has increased from ₹799.34 billion to ₹2603.28 billion. Another significant development in the business is the loss of share of public sector insurers. Their share has declined steadily from around 56% to around 38%. It has further declined to 36% during FY 2024.

Growth in non-life products sold by banks can be seen in Table 6.6. The table presents the GDP collected by banks during the last 10 years ending 2022-23. It can be observed from the table that though banks have sold substantial amount of non-life insurance business, they have sold more of fire insurance and motor insurance. The largest segment within non-life insurance is health insurance followed by motor

FIGURE 6.7

Trend in Non-life Insurance Premium Collected in India during 10 Years Ending FY 2023



Source: IRDAI, Handbook on Indian Insurance Statistics 2022-23.

TABLE 6.5

Key Non-Life Insurance Business Statistics

Year	*Number of New Policies Issued (₹ Million)*	*Gross Direct Premium (Within & Outside India) (₹ Billion)*	*Market Share of PSUs (including Specialized) (Basis GDP within India)*
2013-14	104.82	799.34	55.8%
2014-15	120.22	871.51	55.1%
2015-16	125.76	993.33	54.5%
2016-17	154.26	1309.71	53.4%
2017-18	170.77	1534.38	51.1%
2018-19	191.18	1724.83	45.3%
2019-20	241.51	1921.93	44.3%
2020-21	246.73	2020.82	42.8%
2021-22	265.67	2240.03	40.8%
2022-23	301.81	2603.28	38.4%
CAGR	12.5%	14.0%	-4.1%

Source: Compiled by the authors from IRDAI, Handbook on Indian Insurance Statistics 2022-23.

TABLE 6.6

Gross Direct Premium (GDP) of Non-Life Insurance Business by Corporate Agents - Banks (₹ Billion)

Year	*Fire*	*Marine*	*Motor*	*Others*	*Total*
2013-14	11.95	0.26	15.48	6.64	34.35
2014-15	13.29	0.23	14.05	6.27	33.84
2025-16	14.78	0.25	14.45	6.88	36.36
2016-17	14.41	0.13	18.27	6.74	39.56
2017-18	17.25	0.16	19.54	7.96	44.91
2018-19	19.94	0.14	24.17	9.57	53.81
2019-20	21.27	0.46	23.88	9.14	54.75
2020-21	21.47	0.13	21.49	7.18	50.27
2021-22	20.04	0.12	18.94	6.98	46.07
2022-23	23.04	0.12	17.90	8.17	49.23
CAGR	7.6%	-8.7%	1.6%	2.3%	4.1%

Source: IRDAI, Handbook on Indian Insurance Statistics 2022-23.

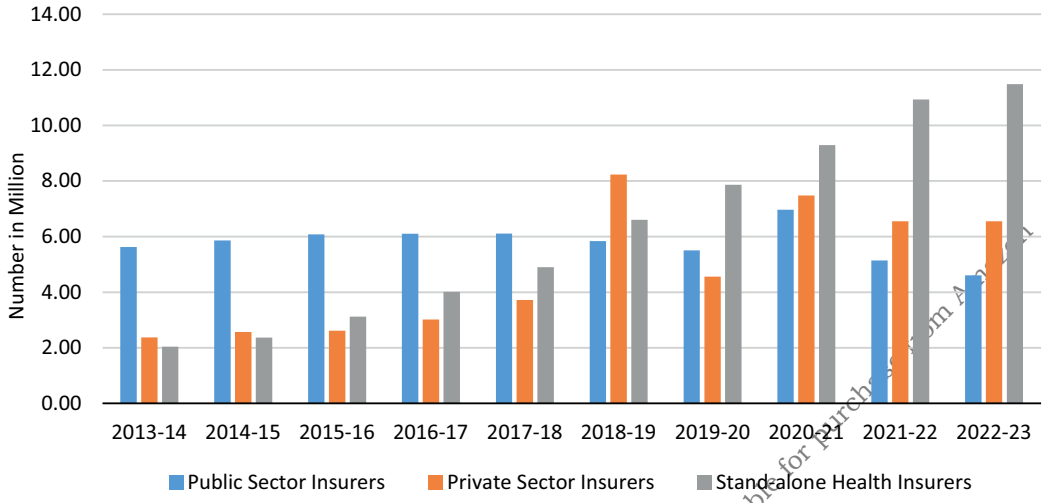
insurance. Whereas, the banks have been selling more of fire insurance. Another fact is that the share of banks in selling non-life insurance and the growth in their sales have been very low compared to the growth in the entire sector.

6.8. Health Insurance

Health insurance is emerging as a major business in India and it has already become the largest non-life insurance segment (Figure 6.7). It is in line with the trend experienced in the developed nations in the past. The increasing attraction of health insurance is also evident from the fact that there are standalone insurers offering health insurance only (Figure 6.8). The number of health insurance policies sold by different type of insurance companies, namely, public sector insurers, private sector insurers and standalone health insurers and the number of persons issued with health insurance are presented in Figure 6.8 and Figure 6.9 respectively.

FIGURE 6.8

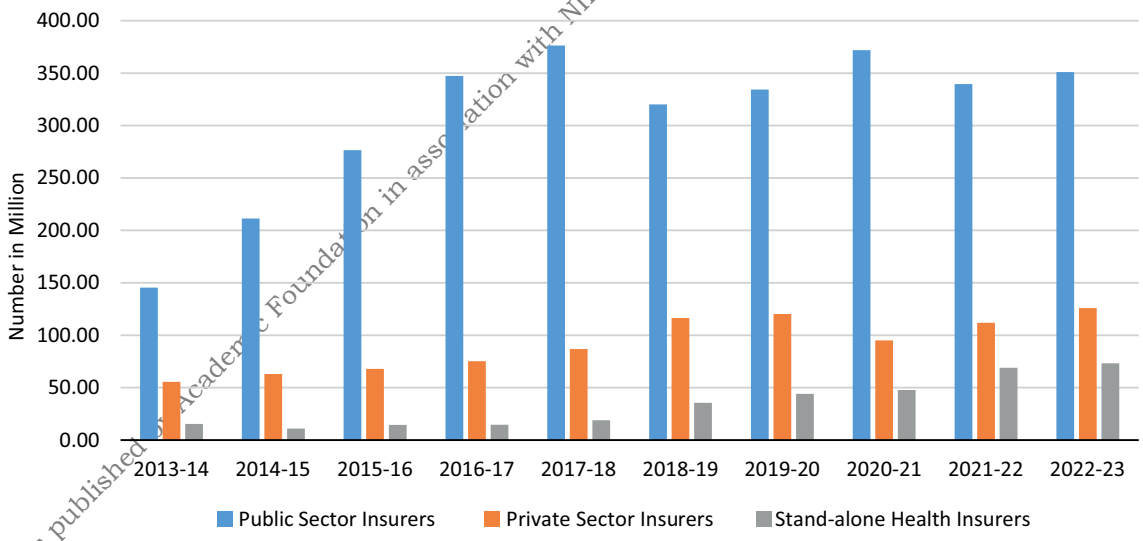
Number of Health Insurance Policies Sold during Last 10 Years



Source: IRDAI, Handbook on Indian Insurance Statistics 2022-23.

FIGURE 6.9

Trend in Number of Persons Covered with Health Insurance



Source: IRDAI, Handbook on Indian Insurance Statistics 2022-23.

The amount of gross premium collected by selling health insurance in the country during the last ten years is presented in Table 6.7. The statistics presented in the table indicates that the health insurance in the country has grown by around 20% during the last 10 years and the business of standalone health insurers has grown at fastest pace of 31.3% per year. The business of public sector insurers has grown at the slowest pace and hence are losing their market share. The share of different types of insurers is given in Figure 6.10. It is clear that the share of public sector insurers is declining and the share of standalone insurers is increasing. The public sector insurers have lost around 18% of the market and standalone insurers have gained around 16% during the period of ten years. The share of private sector insurers has increased marginally.

TABLE 6.7

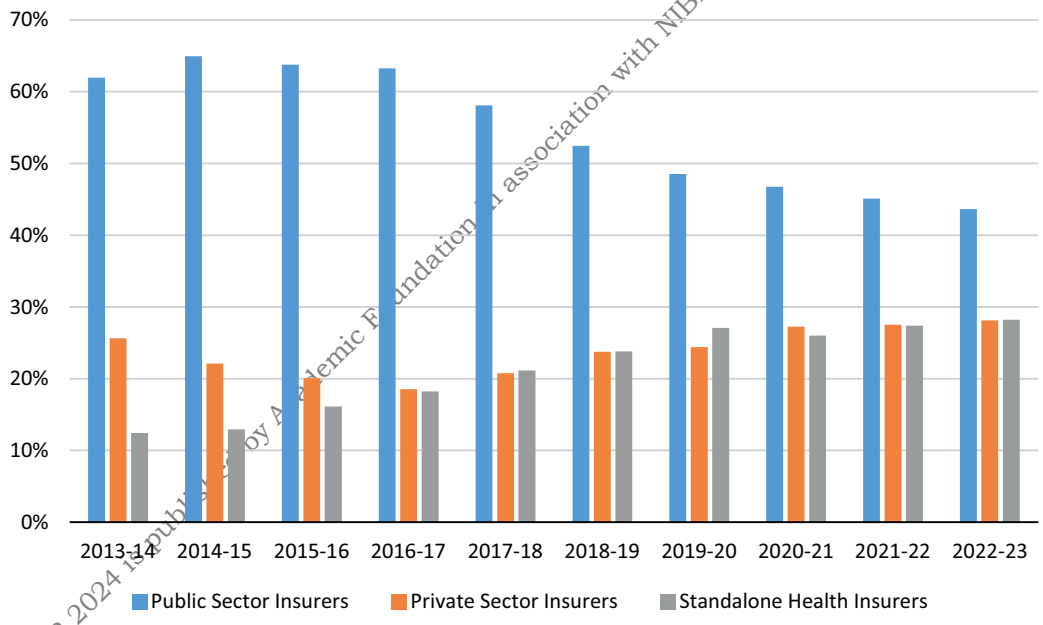
Gross Health Insurance Premium Collected (₹ Billion)

Year	*Public Sector Insurers*	*Private Sector Insurers*	*Standalone Health Insurers*	*Total*
2013-14	108.41	44.82	21.72	174.95
2014-15	128.82	43.86	25.70	198.38
2015-16	155.91	49.11	39.46	244.48
2016-17	192.27	56.32	55.32	303.92
2017-18	215.09	76.89	78.30	370.29
2018-19	235.36	106.55	106.81	448.73
2019-20	246.32	123.91	137.36	507.58
2020-21	272.28	158.75	151.35	582.38
2021-22	329.43	201.07	200.01	730.52
2022-23	390.58	251.82	252.52	894.92
CAGR	15.3%	21.1%	31.3%	19.9%

Source: Compiled by the authors from IRDAI, Handbook on Indian Insurance Statistics 2022-23.

FIGURE 6.10

Trend in Share of Health Insurers in India



Source: IRDAI, Handbook on Indian Insurance Statistics 2022-23.

6.9. Outlook for Bancassurance

The discussion in the foregoing sections of the chapter provides ample evidence that the insurance sector in India has done well in terms of number of policies sold and income generated by the insurers in the country. The growth achieved by the sector is very high compared to the growth in the GDP (*Economic Times*, 2024). Nevertheless, the penetration of insurance and density of insurance are very low compared to most other nations. Compared to the developed nations, the penetration and density of insurance in India is several times lower.

The expanding economy, growing middle class, innovation, technology and regulatory support has been instrumental in taking insur-

ance business to new heights. According to a Swiss Re Institute report, India's insurance sector is projected to grow the fastest among the G20 countries, with total premiums growing at an average of 7.1% in real terms between 2024 and 2028 (Business Standard, 2024b). The overall insurance penetration in 2023-24 is expected to be at 3.8% in India and 6.5% globally. Penetration for life insurance in India for the year is projected to be at 2.9%, and for non-life at 1%. In comparison, the growth rate of the global insurance market is around 2.4%. Analysts have predicted that by 2026, the insurance market in India would grow to a sizeable US$ 222 billion and will become the sixth largest insurance market surpassing countries like Germany, Canada, Italy and South Korea. The growth will be driven by a combination of factors such as changing customer preferences, rising income levels, and demographic shifts.

Other factors that will determine the future of the insurance sector are the changing profile of customers and their preferences. Thanks to the ever-increasing opportunities more and more people in the country are gaining economic affluence and their spending behaviour and social behaviour are changing very fast. For instance, a greater number of youngsters are able to afford home, car, travel, etc. and they are also buying insurance products. They also wish to take care of themselves including their protection and financial security.

A big reform that is most likely to revolutionise insurance distribution in the country is the recently launched Bima Sugam[2] (Business Standard, 2024a). It is a part of IRDAI's Bima Trinity: Bima Vistaar[3], Bima Vahak[4], and Bima Sugam. According to industry leaders, Bima Sugam could reduce the dependence of insurance companies on intermediaries and promote the sale of products through direct digital means. Similarly, Bima Vahak is another channel being opened for distribution of insurance. Whereas, Bima Vistaar is a product which may lead to a dramatic increase in the number of insured and the volume of insurance business. In fact, the agenda of the government of India is to achieve 'insurance for all' by 2047 and Bima Sugam is for achieving this goal.

The changing financial climate in the nation has prompted a substantial change in the Indian financial services space. To remain abreast, financial entities have taken on essential associations like bancassurance for distribution. Banks and insurance companies collaborate to provide protection plans in order to increase customer and stakeholder fulfilment, increase total revenue, and access creative distribution channels. Thus, the banks are shifting toward providing value added services to their customers. It has also become a necessity for the banks to provide such services including insurance due to the fact that their net interest margin (NIM), the main source of income, has declined significantly over the last decade. Anyways, the banks have very rich data about all their customers which will enable them to sell various financial services more efficiently and given their network of physical branches and digital channels they can sell insurance more efficiently and at lower cost (Sinha, 2005). The number of bank branches in the country as of March 31, 2023 was 154,983 out of which 54228 were in rural India, 43,704 were in semi-urban areas, 28,006 were in urban areas and 29,045 were in metropolis. Total number of employees in the scheduled commercial banks in the country as at the end of FY 2023 was 17,65,017.

As discussed earlier, bancassurance in India has experienced faster growth than other channels for distribution of insurance and non-life insurance and particularly health insurance are gaining momentum. These trends are likely to con-

2. The Insurance Regulatory and Development Authority of India (IRDAI) on March 19, 2024 gave the go-ahead to launch an online marketplace for insurance called 'Bima Sugam'. It's an online platform where customers can choose a suitable scheme from multiple options given by various companies. All insurance requirements, including those for life, health, and general insurance (including motor and travel) will be met by Bima Sugam.
3. Bima Vistaar will provide a basic social safety net to the masses with combined features of life, health, personal accident and property insurance.
4. The IRDAI has introduced the 'Insurance Regulatory and Development Authority of India (Bima Vahak) Guidelines, 2023' on 9 October 2023. These guidelines are set to revolutionize insurance distribution in the country by creating a dedicated channel with a focus on enhancing insurance inclusion, especially in rural areas. These guidelines will come into force from the date of launch of Bima Vistaar.

tinue and the share of bancassurance is likely to steadily increase.

6.10. Conclusions

Selling insurance products offer attractive revenue to the sellers. This is evident from the fact that the average commission paid by life insurance companies in India during the last 10 years was 5.56% of premium and commission paid by the non-life insurers in the country was 6.78% of gross insurance premium. Despite the large network of banks, the contribution of commercial banks as corporate agents was 5.93% of non-life premiums and 17.44% of new business premiums for life insurance in 2022-23.

In November 2023, Insurance Regulator IRDAI had set up a high-level panel to suggest steps to increase the participation of banks for easy availability of insurance products across the country (*Economic Times*, 2023). Nevertheless, as is evident from Figure 6.4, one thing that is adversely impacting bancassurance is the other corporate agents growing faster and capturing the market share of banks in distribution of insurance in India. This is an outcome of IRDAI giving license to the corporates including NBFCs, wealth advisors, insurance advisors, etc. for selling insurance. Further, liberalisation of the regulations governing corporate agents in 2022 has made corporate agents to become more competitive to the banks.

Though bancassurance has done well so far and banks have been well accepted by both the insurers and the insured for sale of insurance, the other corporate agents are posing very tough competition to the banks. Another big challenge for banks is Bima Sugam, the one stop digital platform for distribution and settlement of all insurance products. In order to overcome the competition from other corporate agents and the technology platform, the banks may have to address certain issues. The key issues are:

- *Education of bank employees*: It is believed that and could be true that insurance agents have better knowledge and customer focus than bank employees. Therefore, it is very critical for the banks to train their employees engaged in bancassurance such that they will be able to educate the customers and will be able to offer the right kind of insurance to the customers.
- *Service quality*: This is another area of concern for the insurance customers. They may perceive that the insurance agents and employees of insurance companies would be able to provide better service.
- *Follow up and serving the customers throughout the insurance life cycle*: Like banking services insurance too involves long term relationship with customers. Serving the customers throughout the life cycle of insurance policies is judiciously expected by the customers. It is particularly important in case of life insurance. Another major service that the insurance agents can do is facilitating smooth settlement of insurance claims.
- *Less footfall in bank branches*: Though the number of bank branches in the country is increasing year after year, post Covid-19 pandemic the footfall in the branches has decreased drastically.
- *Competition from apps and online agents*: This was expected to emerge as a major threat to bancassurance. However, the trend in sale of insurance through various channels shows that bancassurance has grown at the fastest pace at the cost of other channels.
- *KRAs and incentives*: Bank employees should be assigned targets for selling insurance as one of the Key Result Area (KRA) and should be offered incentive for achieving the same.
- *Underutilisation of Business correspondents (BCs)*: Commercial banks in the country are engaging both corporate BCs and other BCs for providing financial services in both rural and urban centres. The services offered by the BCs is largely restricted to basic banking transactions and hence their income is very limited. BC network of banks is quite strong and it can be utilised well for delivering insurance.

Going forward, sophisticated digital presence will be the next frontier for banks. Therefore, apart from addressing the abovementioned issues, commercial banks have to move towards

more sophisticated digital technology and analytics for delivery of insurance products. Data analytics can enrich customer segmentation models, propensity models and pricing models (Naves, 2019). Three steps for sophisticated digitalisation are laying foundation for digital and analytics capabilities, building partnerships across ecosystems, and putting the customer at the centre of all decisions. Banks may also have to use Robo advisors for offering customised products and also for providing a bundle of banking services and right kind of insurance products (Raphael et al., 2022).

Yet another step the banks have to take for growing their bancassurance business is digital marketing (Dinis et al., 2021; González et al., 2023). The different digital marketing approaches include embedded insurance sales, contextual insurance sales, digital campaigns, standalone market places (digital insurance stores), aggregator website and direct distribution. This would most probably help overcome the competition from Bima Sugam. Banks should also add insurance products to their mobile banking apps such that their customers can buy insurance though the app.

In order overcome the competition from emerging technology-enabled channels, from the peers and from the new channels like Bima Vahak, banks have to move towards more sophisticated digital technologies and will have to have omnichannel presence to meet the needs of different customer segments and to utilise their network of branches and digital platforms.

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II
Risk Management in the Financial Sector

7

Operational Risk

The Impact of ESG

Richa Verma Bajaj[1]

7.1. Introduction

Climate change raises considerable worries around the world, causing frequent changes in government climate policies (Ren et al., 2022) for sustainable development. Post the Covid-19 pandemic, it was observed that both pandemic and climate change risk have the potential to cause recession and unemployment (Luiz, 2020). Given this, the focus on sustainable development is increasing, with urgent attention on Environmental, Social and Governance (ESG) from the policy makers. ESG is a numerical value assigned to a firm on the basis of its performance on environment protection, social responsibility, and internal governance (Berg et al., 2022). It first appeared in 2004, in the report titled, *Who Cares Wins*[2]. It is an important parameter to gauge non-financial performance of a firm. According to Deng et al. (2023), the non-financial factors considered for assessment includes 'everything from air quality and waste management, to employee health and safety, to diversity and inclusion, conduct of ethical business, production of high quality and safe product, online security for employees and customers and competitive behaviour'. ESG helps to improve regulatory compliance, reduce operating costs, and improve shareholder's return, employee engagement and customer loyalty.

The categorisation and sub-themes considered under ESG pillars are provided in Table 7.1.

As far as regulations on ESG is concerned, there is no mandatory regulation for ESG in the US.

TABLE 7.1

Themes under ESG Pillars

Pillars	*Categories*	*Sub-themes*
Environmental	Emissions Reduction	GHG emissions; Waste management; Water management; Biodiversity; Environmental management systems
	Innovation	Product innovation; Green revenues, research and development, and capital expenditures
	Resource Use	Water; Energy; Sustainable packaging; Environmental supply chain, green products
Social	Community	Public health; Business ethics
	Human Rights	Respect for fundamental human rights conventions
	Product Responsibility	Responsible marketing; Stakeholder management and product quality; data privacy, customer satisfaction
	Workforce	Employee and worker management; Diversity and inclusion; Career development and training; Working conditions; Health and safety
Governance	CSR Strategy	Corporate Social Responsibility (CSR) strategy; ESG reporting and transparency; Disclosure practices
	Management	Board Composition, structure (independence, diversity, committees, functioning); Management track record; Compensation
	Shareholders	Shareholders relations; Shareholder rights; Takeover defences

Source: Ehlers et al. (2022).

1. The author is grateful to G. Bharankumar and Arindam Bandyopadhyay for valuable comments and suggestions. The usual disclaimer applies.

2. Swiss Federal Department of Foreign Affairs and United Nations, *Who Cares Wins: Connecting Financial Markets to a Changing World*, December 2004.

In contrast European Union has issued Green Taxonomies and Non-Financial Reporting Directive (NFRD) for ESG reporting. According to a study by MSCI, '90 percent of ESG Regulations come from Government agencies'. The Central Bank, financial regulators, and statutory bodies also have role to play. ESG reporting in India was initiated in the year 2009, with the issue of CSR circular by the Ministry of Corporate Affairs. In May 2021, SEBI mandated filing under Business Responsibility and Sustainability Reporting (BRSR) by 1000 listed companies by market cap from the year 2022-23. In addition, banks have to develop their strategies to manage ESG risk, in accordance with (i) Framework issued by RBI on Green Fixed Deposit, (ii) Principles for Responsible Banking (PRB) developed by United Nations Environment Programme (UNEP) Finance Initiative, and (iii) Taskforce on Climate-related Financial Disclosures (TCFD).

CRISIL, a rating agency in India, assigns ESG score to 1000 companies, as per the SEBI mandate. Considering the scope of this chapter, the ESG score assigned by CRISIL to banks and development finance institutions (DFIs) is presented below (Table 7.2), which is clearly reflecting on 'Strong' ESG score of 62% banks, out of 39, on the basis of their environmental, social and governance commitment. Interestingly, only Axis and HDFC Bank have 'Leadership' Score as per ESG pillars, representing a score between 71 to 100; not even a single bank is with 'Weak' ESG Score, as per CRISIL.

Moreover, it has been argued since a long time whether ESG has any impact on an institution's performance. The researchers, however, have mixed opinion about interlinkage between ESG risk and firm performance. Study by Miralles-Quiros et al. (2019) and Ielasi et al. (2021), observed a positive relationship between ESG performance and firm's share price, which is reflecting on market, valuing positively the firm with good ESG performance. Furthermore, the study by Broadstock et al. (2021); El Khoury et al. (2022); and Li et al. (2022) found good ESG performance as a mitigant against the firm's financial risk during the Covid-19 pandemic and Xie et al. (2019) found it as a tool to add to a firm's value. In contrast, no such relationship between a firm's profitability and ESG performance was advocated by Atan et al. (2018); Landi et al. (2022); or Lennox et al. (2012). They even treated extra investment in ESG as a burden on total cost of a firm, as viewed by Ng and Rezaee (2015). The studies by Apergis et al. (2022); Eliwa et al. (2021); El Khoury et al. (2022) opined that external financing is less costly for a listed company with ESG rating.

Alongside, there is a regulatory push on institutions to integrate climate change risk and ESG risk into the risk management system of the bank. The study by Capelle-Blancard et al. (2019) and He et al. (2022), captured the impact of ESG performance on risk. Shakil (2021) pointed out that a firm has lower risk with a good ESG performance. Alvarez et al. (2020) opined that climate change affects all the risk the financial markets are exposed to. Many studies have focused on the impact of ESG practices on firms' default risk; however, impact of the same on the operational risk is unexplored. The president of Federal Reserve Bank of St. Louis, James Bullard once said, 'operational risk will someday equal or exceed credit risk for many community banks'[3]. BCBS (2021) pointed towards 'very limited focus' on the impact of climate change risk on operational risk, whereas in contrast, European Banking Authority emphasized that operational risk is highly affected by ESG risks. BCBS (2022), in response, accentuated the need of considering ESG risk in risk management system of the banks, covering credit, market, liquidity, and operational risk. The Principle 11, i.e., principle for the effective management and supervision of climate-related financial risks, sight the need for the banks to understand the impact of climate change on the operational risk of a bank. Operational risk is typically stated as idiosyncratic (firm-specific) in nature in the paper by Lopez (2002) and Chernobai et al. (2012). In contrast, Afonso et al. (2019) and Abdymomunov et al. (2019) opined that this risk has systemic implications. To date, there has been limited research on systemic risk consequence

3. Federal Reserve Bank of St. Louis: "Welcoming Remarks"at the Sixth Annual Community Banking in the 21st Century Research and Policy Conference by J. Bullard (October 3, 2018).

TABLE 7.2

ESG Score of Banks and Development Finance Institutions in India

Company Name	*Environmental Score*	*Social Score*	*Governance Score*	*ESG Score*	*Category*	*Scoring Period*
AU Small Finance Bank Limited	61	61	79	68	Strong	Mar-23
Axis Bank Limited	70	61	77	71	Leadership	Mar-23
Bandhan Bank Limited	57	67	76	67	Strong	Mar-23
Bank of Baroda	59	66	61	62	Strong	Mar-23
Bank of India	47	56	61	55	Adequate	Mar-23
Bank of Maharashtra	49	62	61	57	Adequate	Mar-23
Canara Bank	51	68	68	62	Strong	Mar-23
Central Bank of India	55	65	63	61	Strong	Mar-23
City Union Bank Limited	53	61	80	66	Strong	Mar-23
CSB Bank Limited	58	57	77	65	Strong	Mar-23
DCB Bank Limited	57	57	77	65	Strong	Mar-23
Equitas Small Finance Bank Limited	53	60	78	65	Strong	Mar-23
Export Import Bank of India	64	43	40	49	Adequate	Mar-22
FINO Payments Bank Limited	39	51	72	55	Adequate	Mar-22
HDFC Bank Limited	68	61	79	71	Leadership	Mar-23
ICICI Bank Limited	63	61	77	68	Strong	Mar-23
IDBI Bank Limited	53	62	70	62	Strong	Mar-23
IDFC FIRST Bank Limited	64	56	77	67	Strong	Mar-23
Indian Bank	55	64	60	59	Adequate	Mar-23
Indian Overseas Bank	54	63	58	58	Adequate	Mar-23
IndusInd Bank Limited	64	55	71	65	Strong	Mar-23
Kotak Mahindra Bank Limited	64	58	78	68	Strong	Mar-23
National Bank for Agriculture and Rural Development	64	53	41	52	Adequate	Mar-22
National Housing Bank	56	46	47	50	Adequate	Jun-22
Punjab and Sind Bank	53	58	61	58	Adequate	Mar-23
Punjab National Bank	49	64	62	58	Adequate	Mar-23
RBL Bank Limited	60	53	69	62	Strong	Mar-23
Small Industries Development Bank of India	57	48	56	54	Adequate	Mar-22
State Bank of India	60	68	67	65	Strong	Mar-23
Suryoday Small Finance Bank Limited	58	54	78	65	Strong	Mar-23
The Federal Bank Limited	56	64	72	65	Strong	Mar-23
The Jammu and Kashmir Bank Limited	53	59	68	61	Strong	Mar-23
The Karnataka Bank Limited	57	59	74	64	Strong	Mar-23
The Karur Vysya Bank Limited	59	61	75	66	Strong	Mar-23
The South Indian Bank Limited	51	62	74	63	Strong	Mar-23
UCO Bank	52	62	63	59	Adequate	Mar-23
Ujjivan Small Finance Bank Limited	60	56	76	65	Strong	Mar-23
Union Bank of India	51	64	65	60	Adequate	Mar-23
YES Bank Limited	63	58	68	64	Strong	Mar-23

Note: Range of CRISIL ESG score from FY2023 onwards: 0-40 Weak, 41-50 Below average, 51-60 Adequate, 61-70 Strong, 71-100 Leadership.

Source: crisil.com

of operational risk, which is obvious, with the presence of both pandemic and climate change risk. Given this, this chapter makes a unique attempt to explore and analyse this missing link, and study the relationship between ESG and operational risk, with a focus on public sector banks in the country.

Operational risk is '*the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. This definition includes legal risk, but excludes strategic and reputational risk*' (RBI, 2024). This definition focuses on 'malfunction or breakdown of the technology or support systems, including cases of employee frauds and errors' (Jarrow, 2008). Operational risk is growing in banks, as they partner with fintech firms and cyber threat is surpassing the growth, according to Santucci (2020). Alvarez et al. (2020), viewed that 'Climate change has had a clear impact on operational risk, as extreme weather may force office closures or damage crucial resources such as data centres'. ORX is considering 'climate as a causal factor for a range of operational risk'[4] an organisation is exposed to. For identification of operational risk and for conducting the root cause analysis, it becomes important for a bank to identify the cause, event and effect (impact) relationship. For example: the root cause of a loss due to down-grading in ESG rating may be changing environment conditions; the events will be employment practices and workplace safety; and the loss (effect) may be financial liability resulting from damage to building or social risks for the employee concerned. Manal Azzi, OSH Team Lead at the International Labour Organisation, emphasized the need for policies and urgent actions for 'occupational safety and health considerations', considering hazardous impact of changing climate on more than 70% of the global workforce (ILO, 2024). The recent case of Wells Fargo, in the year 2016, of losing institutional and retail clients after creating unauthorised customer accounts calls for integration of ESG risk into operational risk management framework of a bank in order to avoid down-grading in an institution rating.

Given the above background, a discussion on ESG pillars and operational risk management becomes important. The same is detailed below:

(a) *Operational Risk Management and Environmental (E) Pillar*

The first Pillar of the ESG framework, 'E', focuses on improving a firm's environmental performance. It is important to integrate ESG into the operational risk management framework of an organisation, as it helps to identify suitable controls and effectiveness of the controls to mitigate the impact of environment risk. For example: water and waste management system and reduction of greenhouse gas (GHG) emissions.

(b) *Operational Risk Management and Social (S) Pillar*

The second Pillar of the ESG framework, 'S', focuses on impact of the business on its employees, customers, and the community, at large. It emphasizes on an organisation's internal sustainability. It provides coverage on health and safety of the employee concerned and fosters a positive work environment. Physical risk gets reduced with controlled environmental risk, resulting in reduced workplace accidents or injuries and improved social contributions. It helps to increase employee engagement, improve productivity and reduce work-related stress.

(c) *Operational Risk Management and Governance (G) Pillar*

The third pillar of ESG is 'G', with a focus on business leadership and structure. Keeping the stakeholders informed of a strong operational risk management architecture with adequate data collection and effective control mechanism is a reflection of a strong governance in an organisation.

Integrating ESG performance into operational risk reporting helps in better top management decision making. The literature suggests that ESG data has real value in understanding the operational resilience of an institution. Reserve Bank of India, Guidance Note on Operational

4. See https://orx.org/resource/climate-operational-risk-orx-approach (accessed on 8 October 2024).

Risk Management and Operational Resilience (2024), defines operational resilience as ‘the ability of a regulatory entity or bank to deliver critical operations through disruption’. Being proactive in having a strong operational risk management in this changing business environment and climate conditions is the need of the hour. That is why understanding an organisation’s climate risk and taking proactive actions to mitigate this risk is the core focus of the ESG framework. Incorporating ESG risk into the Operational Risk Framework is thus important for long-term sustainability of an organisation and provides a competitive edge. However, lack of sufficient data on E, i.e., environmental risk of ESG pillars, makes the analysis difficult. ORX[5] is of the view that historical data may not be the best representative of future, as climate-related losses are expected to rise in the coming decade. Climate change broadly captures losses on account of losses from Transition Risk and Physical Risk. According to BCBS (2023),

> Transition risks include the societal changes arising from a transition to a low-carbon economy and arise through changes in public sector policies, innovation and changes in the affordability of existing technologies or investor and consumer sentiment towards sustainable consumption and production practices. Physical risks result from acute and/or chronic climatic trends or events, such as rising sea levels, wildfires, storms, floods and droughts.

This chapter is divided into four sections. Section 7.1 presents an introduction to ESG risk and operational risk management, followed by regulatory guidelines on integrating ESG into operational risk management system. Section 7.2 covers the climate change risk-transition risk and physical risk-related operational loss event taxonomies, as provided in BCBS (2017) and RBI (2024) to show the impact of climate change risk on Banks. Section 7.3 presents the analysis of ESG data collected from Bank’s BRSR to reflect on bank’s operational risk. Section 7.4 concludes.

5. See https://www.eba.europa.eu/eba-response/ 37079?destination=/publications-and-media/events/discussion-paper-role-environmental-risk-prudential-framework (accessed on 8 October 2024).

7.2. Loss Event Taxonomies

7.2.1. Internal Fraud

‘Losses due to acts of a type intended to defraud, misappropriate property or circumvent regulations, the law or company policy, excluding diversity/discrimination events, which involve at least one internal party’ (BCBS, 2017).

Loss Event Category Level 2	*Activity Examples*
Unauthorized Activity	Transition Risk – Greenwashing, reflect conduct risk, mis-advice to clients on green portfolio selection, corruption in carbon credit market and in permitting renewal energy projects Employee divert the funds of climate projects for personal gain
Theft and Fraud	Evasion of taxes intentionally Bribe to sanction loans to project which are harmful to climate

7.2.2. External Fraud

‘Losses due to acts of a type intended to defraud, misappropriate property or circumvent the law, by a third party’ (BCBS, 2017).

Loss Event Category Level 2	*Activity Examples*
Theft and Fraud and Systems Security	Criminal networks exploited the carbon trading system by creating fake companies with which to purchase emission allowances, or carbon credits

Figure 7.1 further points to possibilities of internal and external fraud-related risk in changing climate conditions, which may account to lowering of ESG rating of an institution.

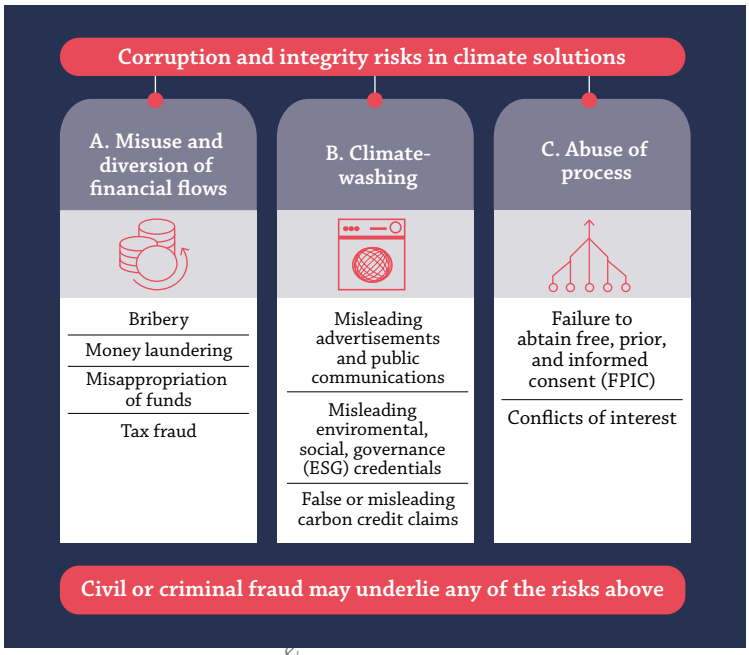
7.2.3. Employment Practices and Workplace Safety

‘Losses arising from acts inconsistent with employment, health or safety laws or agreements, from payment of personal injury claims, or from diversity/discrimination events’ (BCBS, 2017).

Loss Event Category Level 2	*Activity Examples*
Employee Relations	Bottlenecks in operations due to shortage of staff Temporary/permanent loss of employees, e.g., due to illness Physical Risk: Failure of staff to reach offices/places of employment at times of unexpectedly high business volumes
Safe Environment	Personal injury or health impairment of employees/ customers/business partners/ suppliers and vendors due to the non-adherence to health and safety regulations Transition Risk: Inadequate policies for employees given changing climate conditions Physical Risk: Critical employees were not able to reach the workplace due to wildfire

FIGURE 7.1

Corruption and Integrity Risk in Climate Solutions



Source: Graphic taken from 'Corruption and integrity risks in climate solutions: An emerging global challenge', The London School of Economics and Political Science, policy publication on 18 October, 2023 Available at https://www.lse.ac.uk/granthaminstitute/publication/corruption-and-integrity-risks-in-climate-solutions/ (accessed on 8 October 2024).

7.2.4. *Clients, Products and Business Practices*

'Losses arising from an unintentional or negligent failure to meet a professional obligation to specific clients (including fiduciary and suitability requirements), or from the nature or design of a product' (BCBS, 2017).

Loss Event Category Level 2	*Activity Examples*
Suitability, Disclosure and Fiduciary	Transition Risk: Abrupt approval and adoption of climate and environment policy Procedural lapses due to implementation of a scheme in an aggressive manner or financing non-environment friendly products
Improper Business or Market Practices	Transition Risk: Misconduct in selling (Mis-selling) green products Penalty imposed by Consumer Forum/Ombudsman, Civil Courts/other courts. Transition Risk: Failure to comply with regulatory guidelines on climate or environment
Product Flaws	Transition Risk: Failure to take climate change into account Underreporting emissions in order to avoid surrendering emission allowances
Selection, Sponsorship and Exposure	Deliberately unlicensed business activity with customers/adversaries, with products, on markets and in countries Transition Risk: Improper market practices in divesting of carbon and brown assets
Advisory Activities	Wrongly labelled financial products as sustainable investments Dispute with the consultants who have given wrong advice causing losses

7.2.5. Damage to Physical Assets

'Losses arising from loss or damage to physical assets from natural disaster or other events'. 'There should be clear demarcation in bank policy relating to rainfall between normal weather events and climate risk' (BCBS, 2017).

Loss Event Category Level 2	*Activity Examples*
Disasters and other events Natural disaster losses	Damage of records/documents/stationary items etc. due to fire/flood/other disasters Physical Risk: Destruction to property and other assets, due to severe storm on account of climate change Personal injury, disruption of operations and destruction of the institution's assets due to earthquakes, floods, hail, volcanic eruption, storms and hurricanes, environmental damage such as polluted/radioactively contaminated properties and premises or unintentionally set fires

7.2.6. Business Disruption and System Failure

'Losses arising from disruption of business or system failures' (BCBS, 2017).

Loss Event Category Level 2	*Activity Examples*
Systems	Failure of building services caused by internal system malfunction, e.g., by a short-circuit (not including IT network) Physical Risk: (i) Failure of utility infrastructure (power grid) to cope with climate change (ii) IT failure caused by failure of data centre due to extreme weather conditions Loss of business due to connectivity problem Utility outage/disruptions

7.2.7. Execution, Delivery and Process Management

'Losses from failed transaction processing or process management, from relations with trade counterparties and vendors' (BCBS, 2017).

Loss Event Category Level 2	*Activity Examples*
Transaction Capture, Execution and Maintenance	Processing of transactions delayed, inadequate or omitted Error in entering, maintaining, or saving data Failures in database processing Non-deliberately inadequate use of relevant models for transactions Risk of losses due to insufficient or inefficient in-house communication
Monitoring and Reporting	False or misleading carbon credit claims Incomplete or incorrect reporting to the central bank and auditors Misleading environmental, social, governance (ESG) credentials
Customer Intake and Documentation	Incomplete procurement of customer data and business records (including legal documents) required for business deals
Customer / Client Account Management	Incorrect customer data and business records (including legal documents)
Trade Counterparties	Failure of suppliers to comply or flawed compliance with their contractual obligations (non-deliberate)
Vendors and Suppliers	Failure of cooperating partners to comply or flawed compliance with the contractual obligations (non-deliberate) Dispute with vendors for not complying with terms and conditions in the agreement Physical Risk: Failure to provide critical services, including business continuity

7.3. ESG Risk and Operational Risk - Analysis

This chapter further present the disclosures relating to ESG pillars for public sector banks in India. As mentioned above, SEBI has made it mandatory for an institution to publish their BRSR report with their annual report, to comment on their financial performance and ESG disclosures.

> The disclosures (financial and non-financial) provides a clear picture of a company's operations. The International Financial Reporting Standards Foundation (IFRS) recently consolidated with the Value Reporting Foundation (VRF) and the Climate Disclosure Standards Board (CDSB) to form the first ever International Sustainability Standards Board (ISSB). The goal of the ISSB is to create a set of global ESG disclosure standards.

Same is presented below for the public sector banks for the year 2023, with an exception of Indian Overseas Bank and Union Bank of India. For Indian Bank, BRSR was not available for the year 2023.

7.3.1. Environment Pillar

The themes covered under Environmental pillar are presented in Table 7.1 of the chapter. Many of the parameters listed in BRSR do not belong to banks as they do not do manufacturing activities, which is the case with companies. However, the increasing focus on digital banking is resulting in decline in paper work as a move towards sustainability. However, they are focusing on sustainability by lending to renewal energy, solar power and green financing. In addition to this, PNB does rainwater harvesting. Banks disclose 'Total Energy Consumption' in their BRSR, but not even a single public sector bank is disclosing their GHG emissions. However, the parameter 'energy intensity per rupee of turnover' (i.e., total energy consumption/ turnover in rupees) is disclosed by three public sector banks only. Only two banks disclose information about risk and opportunity as far as climate-related risks are concerned, which is one of the important regulatory requirements.

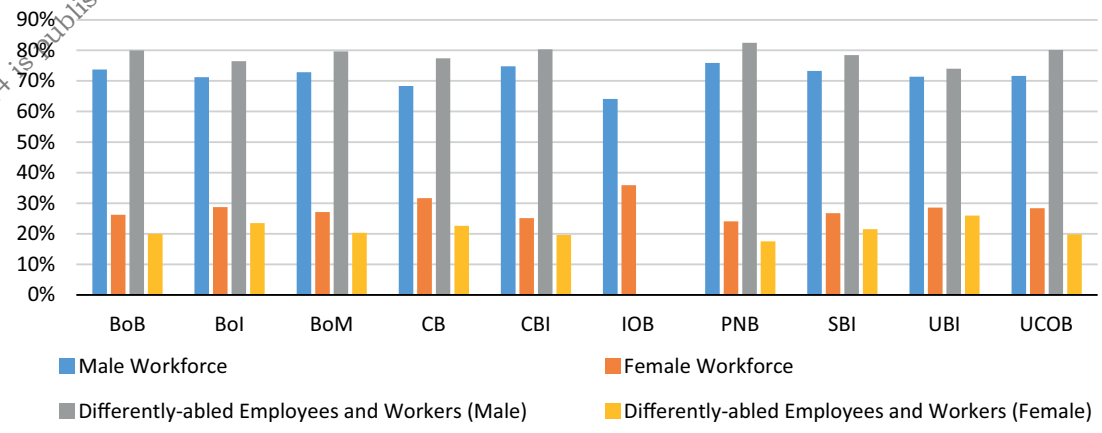
7.3.2. Social Pillar

The themes of the Social pillar are listed in Table 7.1. This pillar focuses on human rights, workforce and working conditions, data privacy, and customer satisfaction parameters.

It is important to note from Figure 7.2 that other than Canara Bank and Indian Overseas Bank, males constitute 70% of the workforce in the banks and the same increased to 75% in the case of employees with disability. There is a special mention about the appointment of a transgender employee in Canara Bank. The parameter which requires top management attention is 'Turnover Rate' (Figure 7.3) in banks, which is more than 3.5%, with an exception of Bank of Baroda, Central Bank of India

FIGURE 7.2

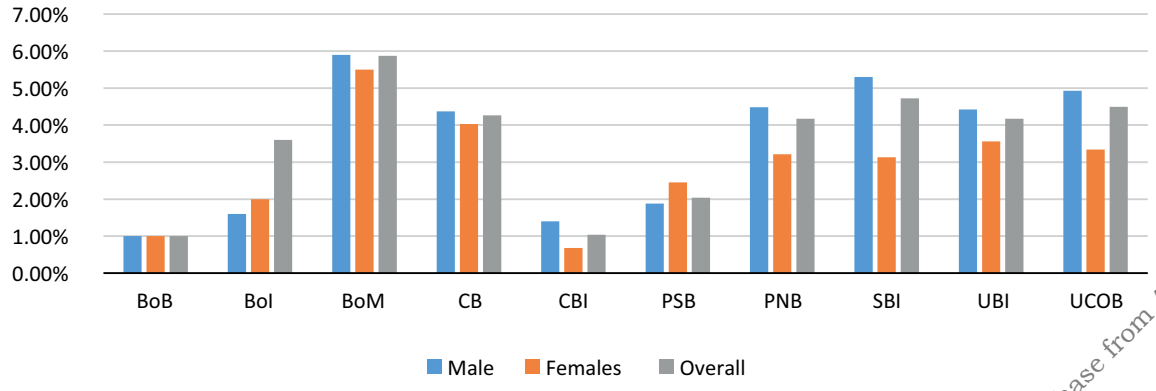
Workforce in Banks in India



Source: Banks' BRSR.

FIGURE 7.3

Turnover Rate in Public Sector Banks in India



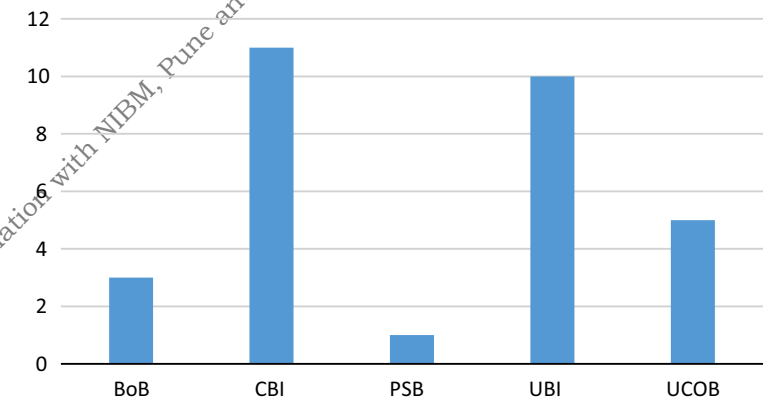
Source: Banks' BRSR.

and Punjab and Sind Bank. M K Jain, deputy governor, Reserve Bank of India, in the year 2022 pointed to the RBI's concern that 'high attrition and employee turnover' pose 'significant operational risks', including disruption in customer services and ethical issues for banks. He also shared the concern that attrition and high employee turnover lead to loss of institutional knowledge and increase recruitment costs. Figure 7.4 further represents disciplinary actions against ten or more employees in Central and Union Bank of India.

Figure 7.5 presents the measures taken by the banks for the well-being of their employees like, health and accident insurance, maternity

FIGURE 7.4

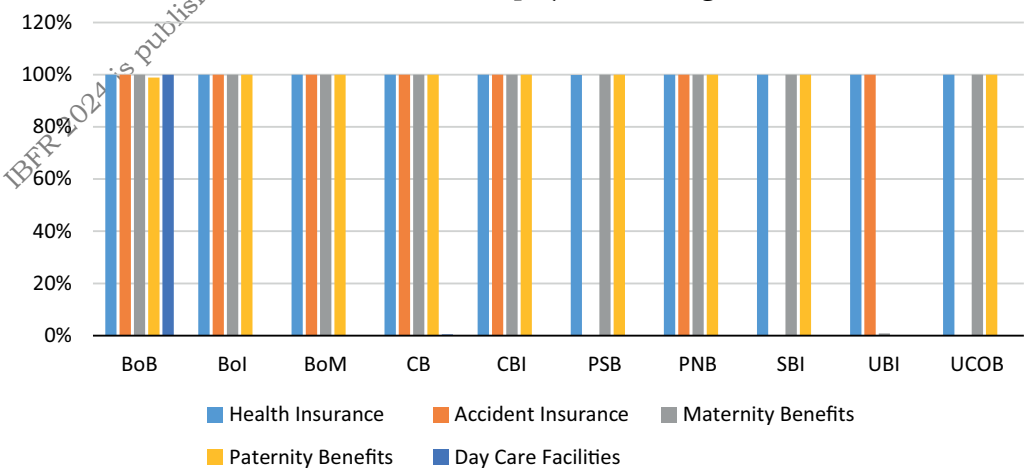
Disciplinary Action by Law Enforcement Agency on Employees



Source: Banks' BRSR.

FIGURE 7.5

Measures for Employee Wellbeing



Source: Banks' BRSR.

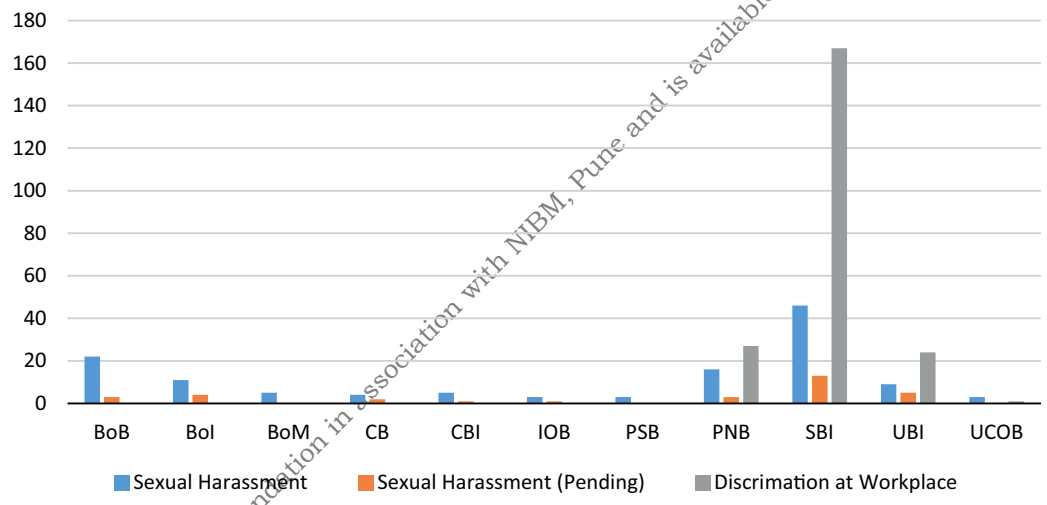
and paternity benefits. Here, 100% denotes availability of benefits to all employees of the banks. The information about 'Accident Insurance' is not available in BRSR for Punjab and Sind Bank, State Bank of India, Union Bank of India and UCO Bank. Bank of Baroda, in addition, provides day care facility to the employees concerned.

Not only this, the data in Table 7.3 shows that the banks provide many retirement benefits to their employees. Moreover, proper arrangements for workplace accessibility for differently abled employees and workers have been done in all offices of the banks, in line with Rights of Persons with Disabilities Act, 2016. Same holds true for more than 80% branches in case of UCO Bank. As per the Act, the banks in public sector also have an equal opportunity policy in place. The table also present interesting data on Retention Rate and Return to Work, as disclosed in the BRSR.

Figure 7.6 further present the number of complaints by employees regarding sexual harassment and discrimination at workplace. Inter-

FIGURE 7.6

No. of Complaints by Employees



Source: Banks' BRSR.

TABLE 7.3

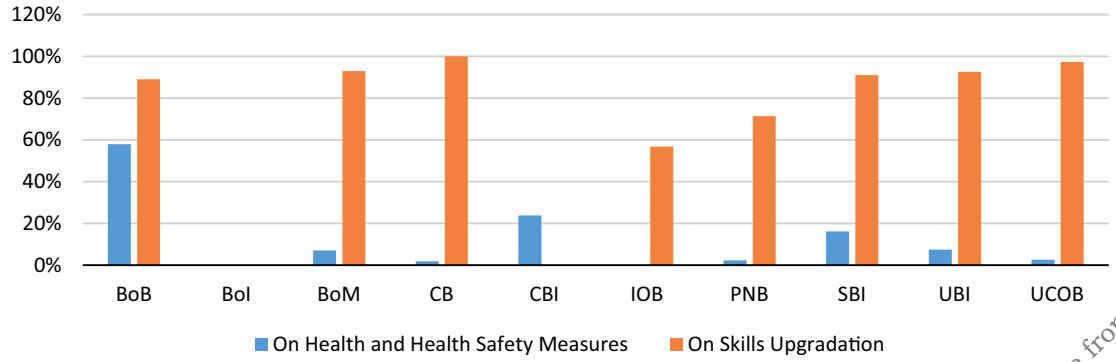
Social Pillar of ESG

	BoB	*BoI*	*BoM*	*CB*	*CBI*	*IOB*	*PSB*	*PNB*	*SBI*	*UBI*	*UCOB*
Details of Retirement Benefits											
PF	24.53	0.16 (82 employees)	30.71	22	31.79			0.23	100	32.06	19.85
Gratuity	100		100	100	100			100	100	100	100
ESI	100										
Others (Pension/NPS)	75.47	99.84 (52127 employees)	69.29	78	Pension - 31.52, NPS - 68.21			Pension - 24.43, NPS - 75.34	Pension - 42.67 NPS - 57.33		80.15
Return to Work	99.96	100	95.87	100	100		100	100	99.96	100	100
Of which: Female	99.89	100	91.77	100	100			100	99.83	100	100
Retention Rate	99.84		100.00	100	99.45			95.07			

Source: Banks' BRSR.

FIGURE 7.7

Details of Training Given to Employees



Source: Banks' BRSR.

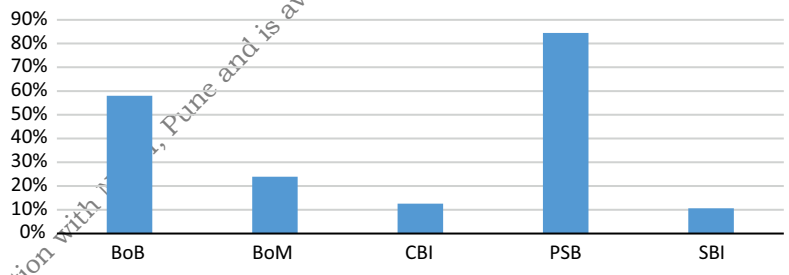
estingly, there is not even a single complaint relating to poor working conditions and health and safety by employees in public sector banks in India, except for SBI. In SBI, 60 and 47 employees in 2023 raised complaints regarding poor working conditions and concerns relating to their health and safety, respectively, as per BRSR. It is interesting to note that only 45% of banks have initiated this training and have redressal mechanisms in place to deal with sexual harassment (Figure 7.6). The bank also conducts meetings with Workmen's/Unions/ Officers' Association and Welfare Associations of the SC/ST employees and OBC employees. To prevent sexual harassment of women at work-place, the banks have an Internal Complaints Committee (ICC) which is assessed through HR Audit. To deal with these issues, Bank of Maharashtra has SC, ST, OBC grievances cell with liaising officers at HO and zonal offices. A sexual harassment redressal committee is also available at HO and zonal offices. Employees can express their grievances through the Whistle Blower Policy. In Punjab and Sind Bank, there are internal policies, the Women Cell, and an Internal Grievance Redressal Committee for SC and ST in place to deal with these issues.

However, banks have given required training on Health and Safety to their employees, as shown in Figure 7.7. Bank of Baroda put this as part of 'Injury While on Duty Scheme'. In fact to ensure health and safety of the employees, banks have taken Group Insurance Policies.

The next parameter, which comes as a part of 'S' of ESG, is Human Rights. The public sector

FIGURE 7.8

Training on Human Rights Issues and Policies



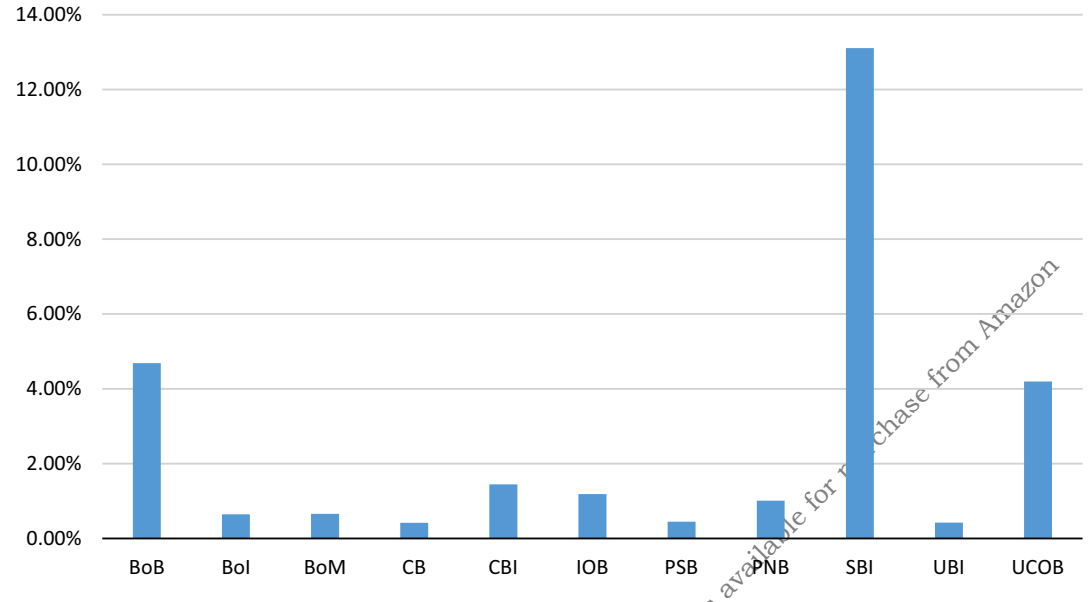
Source: Bank's BRSR.

banks in India disclose information relating to the parameter on 'training on Human Rights issues and policies' in their BRSR, and this is presented through Figure 7.8.

The next parameter examined under social risk is customer satisfaction. The banks as a part of BRSR disclose customer complaints, as presented in Figure 7.9. It is interesting to observe that the highest number of customer complaints is in SBI followed by Bank of Baroda, and this may be because of their size. The customer complaints are further sub-categorized as issues related to ATM/Debit Cards, Account Opening/Difficulty in Operations in Accounts, Internet/mobile/electronics Banking, Loans and Advances, Pension and Other Facility for Senior Citizens, Delivery of Essential Services and Others. Punjab National Banks is the only public sector bank which provides information on all the above points in BRSR. However, the analysis clearly indicates that complaints are particularly relating to 'Delivery of Essential

FIGURE 7.9

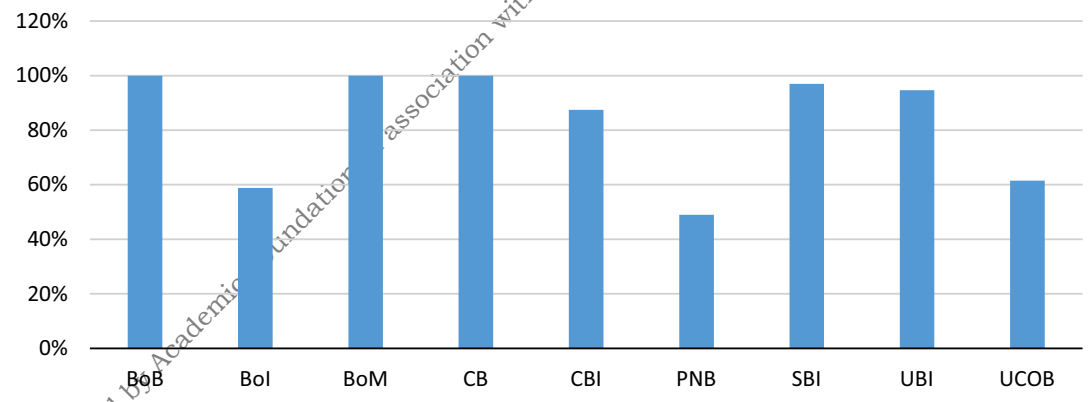
Customer Complaints (Others)



Source: Banks' BRSR

FIGURE 7.10

Details of Performance and Career Development Review of Employees



Source: Banks' BRSR.

Services' and broadly under 'Others'. The banks have a Grievance Redressal Mechanism and a Grievance Redressal Policy in place to respond to consumer complaints.

Figure 7.10 presents the details of employees' performance and career development.

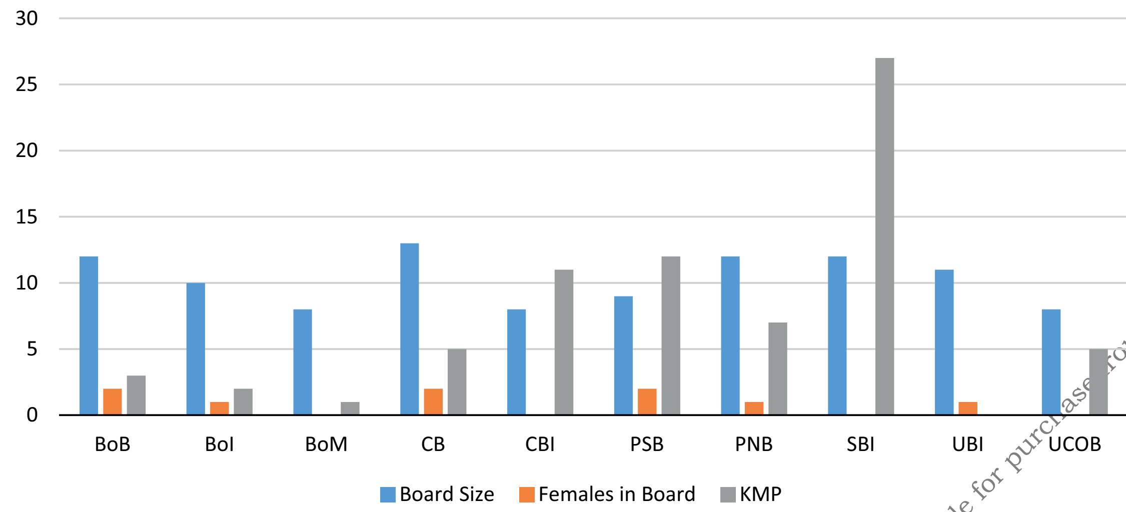
The issues highlighted above are indicating employee-related issues, which require urgent top management attention. The operational issues at workplace must be dealt with to improve the ESG rating of a bank.

7.3.3. Governance Pillar

Next, the chapter looks at the governance pillar of ESG. The variables considered to assess this pillar is presented in Table 7.4. This pillar considers the Board composition and structure, training of the Board and Key Management Personnel, the wage structure, policies design by the Board, etc. Since 'CSR is not applicable to bank, as per Section 135 of Companies Act 2013', only two banks are disclosing their CSR spending. Further, Figure 7.11 presents the data relating to Board Size and composition.

FIGURE 7.11

Composition of Board



Source: Banks' BRSR.

TABLE 7.4

Governance Pillar of ESG

	BoB	*BoI*	*BoM*	*CB*	*CBI*	*IOB*	*PSB*	*PNB*	*SBI*	*UBI*	*UCOB*
Training and Awareness Programme											
Board	100	2,100	88	61.53	87.50		54	6	83.33	100	25
KMP			100	60	100			1	85.56		62
Employees	68.55	446	24.90	76.60	86.75		84.45	61.59	96.00		54

Source: Banks' BRSR.

According to the eighth edition of the Deloitte[6] Global Study titled Women in the Boardroom: A Global Perspective, women hold less than one-quarter (23.3) of the world's board seats'. It is interesting to observe from Figure 7.11 that Bank of Maharashtra, Central Bank of India, SBI and UCO Bank have not even a single female in their board as per 2023, BRSR. However, this percentage is around 15% for other public sector banks in the country, which is much lower than the global average.

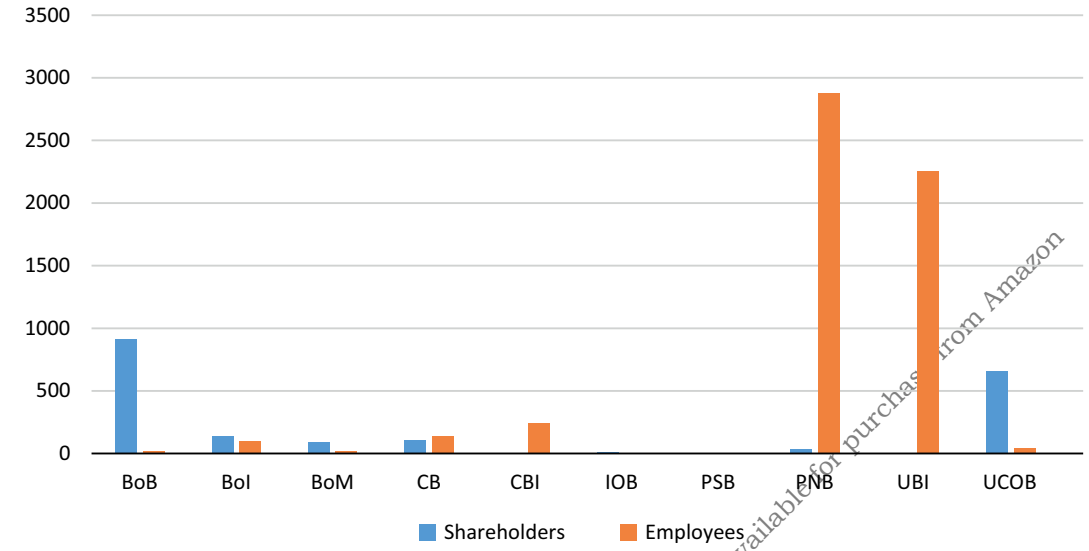
Further, a look at Table 7.4 indicates insufficient training coverage and awareness programme for board and senior management, which is not in line with the Principles of Sound Management of Operational Risk (BCBS, 2021). The presence of whistle blowers' complaints is an indicator of unethical behaviour in the firm. The cause may be the age-old incentive system or outdated ethical policies in an organisation, and the same need to be changed on urgent basis. However, the public sector banks in India have a Whistle Blower policy in place and some have created 'Anti-Corruption' and 'Anti-Bribery' policy and for some it forms a part of the whistle blower policy itself. In addition, banks have a code of conduct policy in place. Interestingly, seven banks pay wages to employees that are more than the minimum levels.

Next, the transparency and disclosure compliance, as part of BRSR, was looked at. It is an important mechanism to view the complaints profile by shareholder, employees and customers and plan corrective action, with improved governance. The data is presented through Figures 7.12 and 7.13.

6. See https://www2.deloitte.com/us/en/insights/topics/leadership/women-in-the-boardroom.html (accessed on 9 October 2024).

FIGURE 7.12

Transparency and Disclosure Compliance: Complaints (Filed) by Shareholders and Employees

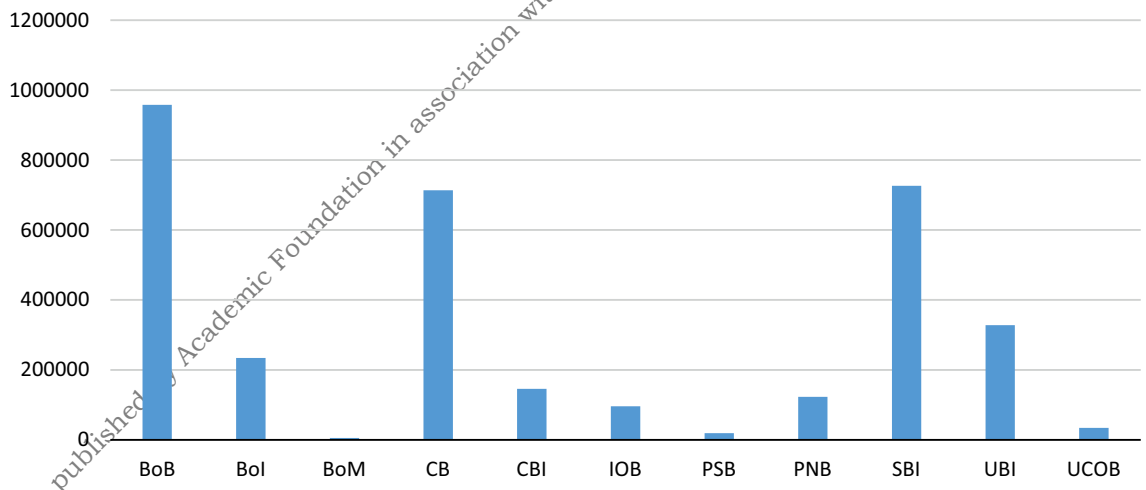


Note: The BRSR of SBI states that "In FY23, 22,505 complaints were filed by employees on Sanjeevni portal of which 93 are pending at the end of the current year" (not shown in the graph above since the number is much higher).

Source: Banks' BRSR.

FIGURE 7.13

Transparency and Disclosure Compliance: Complaints (Filed) by Customers



Source: Banks' BRSR.

On the parameter relating to Data and Privacy, almost all banks have a cyber risk policy and information security policy in place. The banks have also established a strong business continuity and disaster recovery policy for operational resilience. The issues highlighted in this section are indicating governance-related issues. These include inadequate representation of women on boards, complaints filed against shareholders and employees and insufficient training of personnel. It is important for the banks to deal with these operational issues to improve the ESG rating of bank.

7.4. Conclusions

In line with RBI and Basel directives, it is important for banks to integrate the impact of climate change risk and ESG risk in their risk management system. This chapter is an attempt to gauge the impact of climate change

risk particularly on operational risk in public sector banks in India. The development of operational risk taxonomies, in line with Basel and RBI directives, considering climate change risk, is the major highlight of this chapter. The Business Responsibility and Sustainability Reports (BRSR) of the year 2023 (and for two banks for 2022) forms the basis of analysis of ESG pillars for Public Sector Banks operating in the country. Operational risk is an area of risk where ESG factors can be applied easily to emphasise their importance in a firm. The statistics presented in the paper demands urgent regulatory attention particularly on themes relating to the Social and Governance pillars. It is observed from the BRSR disclosures that there is no data on the Environmental pillar for the purpose of analysis. ESG issues listed above can be used as the key risk drivers and indicators by a bank as a forward-looking mechanism to deal with rising operational risk in banks. Banks thus, need to have a strong ESG framework integrated in the risk management system of the banks to remain resilient and sustainable.

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Annexure

Bank Names	
BoB	Bank of Baroda
BoI	Bank of India
BoM	Bank of Maharashtra
CB	Canara Bank
CBI	Central Bank of India
IB	Indian Bank
IOB	Indian Overseas Bank
PNB	Punjab National Bank
PSB	Punjab and Sind Bank
SBI	State Bank of India
UBI	Union Bank of India
UCO	UCO Bank

8

Dynamics of Expected Credit Loss Provisioning by NBFCs

Tasneem Chherawala | Dipali Krishnakumar[1]

8.1. Introduction

The Ministry of Corporate Affairs announced the roadmap for adoption of Indian Accounting Standards (Ind AS) in 2015, which were closely aligned to the International Financial Reporting standards (IFRS), while considering the Indian legal and economic context. Non-Banking Finance Companies (NBFCs), including Housing Finance Companies (HFCs) were slated to migrate to Ind AS from financial year (FY) ending 2019, starting with larger entities whose standalone net worth exceeded ₹500 crores, followed by listed NBFCs and those with a standalone net worth above ₹250 crores. Indian commercial banks were also slated to move to Ind AS reporting in FY 2019, but this was deferred indefinitely by the Reserve Bank of India (RBI)[2].

A key impact area of the new standards by Indian NBFCs pertains to the application of loan loss allowances. Maintaining adequate and timely provisions to buffer for credit losses on financial assets is a prudent financial requirement for banks and Financial Institutions (FIs), whose business of loans is subject to defaults and credit impairment. Before the adoption of Ind AS, NBFCs made bad debt provisions as per the prudential guidelines on Income Recognition, Asset Classification and Provisioning (IRACP) of the Reserve Bank of India[3]. These norms were uniformly applied across financial entities, wherein, impairment was identified only after loans had remained overdue for 90 days or more and provisioning rates increased substantially only after credit was impaired. This method, also followed by banking regulators the world over prior to the global financial crisis, is often referred to as the “incurred loss” approach.

The incurred loss approach was severely criticized in the aftermath of the global financial crisis for being ‘too little, too late’. In the G20 summit in London, the leaders called upon the accounting standard setters to improve provisioning norms (G20, 2009), supported by prudential authorities and market participants. Subsequently, the International Accounting Standards Board introduced the Expected Credit Loss (ECL) approach under IFRS 9 (implemented as Ind AS 109 for Indian entities), which became applicable globally from 2018 onwards. This approach requires entities to proactively recognize potential credit impairment status of financial assets and apply forward-looking ECL-based allowance over their lifecycle. The classification and provisioning methods under this approach rely entirely on entities’ internal models and assumptions and are a significant departure from the regulator prescribed norms.

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1. The authors are grateful to Onkar Shivraj Swami and Arindam Bandyopadhyay for valuable comments and suggestions. The usual disclaimer applies.

2. See 'Deferral of Implementation of Indian Accounting Standards (Ind AS)', available at https://rbi.org.in/scripts/NotificationUser.aspx?Mode=0&Id=11506 (accessed on 5 October 2024).

3. See 'Master Circular - Prudential Norms on Income Recognition, Asset Classification and Provisioning Pertaining to Advances', available at https://www.rbi.org.in/Scripts/BS_ViewMasCirculardetails.aspx?id=9908 (accessed on 5 October 2024).

Cohen and Edwards (2017) advocated that early recognition of losses, as per the new standards, accelerates the process of cleaning up the balance sheet and strengthens banks' resilience. They highlighted that provisioning under the new standards was countercyclical. They also indicated that through supervisory impetus, global banks had become well capitalized post the financial crisis, and were in a good position to make forward-looking ECL provisions.

With migration to Ind AS, NBFCs in India shifted to the ECL approach for provisioning. Initially, NBFCs' managements determined the credit loss provisions without any regulatory backstops. However, in March 2020, RBI introduced a prudential floor, whereby any shortfall in the ECL provision as compared to the IRACP requirement would be transferred from the Profit After Tax to an impairment reserve. RBI also directed NBFCs to disclose detailed information on ECL provisions along with the corresponding regulatory provisions in their annual report from FY 2021 onwards.

A recent related development in the Indian banking sector is the release of a discussion paper by RBI (RBI, 2023) that proposes the introduction of ECL-based provisioning for commercial banks, even prior to their adoption of Ind AS. Subsequently a Working Group has been constituted to seek inputs from various stakeholders and to finalise the framework and timelines. This clearly signals that ECL implementation and subsequent migration to Ind AS is imminent for commercial banks in India.

In light of the developments described above, our chapter examines the dynamics of ECL provisioning across a sample of NBFCs over the period 2021-23. In Section 8.2, we highlight the relevant academic literature and regulatory guidelines pertaining to ECL provisioning. In Section 8.3, we elaborate the ECL framework of Ind AS 109 and define the formulae for measurement of ECL. The data and methodology adopted for our study on NBFCs is described in Section 8.4, followed by the stylized facts and trends that emerge from the data in Section 8.5. Section 8.6 depicts the results of the econometric analysis and Section 8.7 concludes with policy and best practice recommendations.

8.2. Literature Review

The ECL framework under IFRS addressed a number of weaknesses identified in the earlier provisioning approaches and strengthened the accounting recognition of loan loss provisions. Subsequently, a large body of academic and policy literature has emerged which focusses on different aspects of this critical prudential requirement, particularly for FIs. The Basel Committee on Banking Supervision (BCBS, 2015) lays down eleven principles of supervisory guidance on sound credit risk practices affecting the implementation and application of the framework. These include eight principles that discuss the responsibility of bank boards and senior management for ensuing appropriate credit practices, policies and procedures, tools and methods for estimation and validation of models and to ensure that banks disclosures are transparent and relevant. The last three principles discuss the role of banking supervisors to periodically evaluate the effectiveness of the bank's credit risk practices; assess whether the method employed by a bank leads to appropriate measurement of ECL and also take the credit practices into consideration while assessing a bank's capital adequacy.

Khan and Damyanova (2018) discover that the impact on capital levels for most big European banks was fairly small for first-time implementation. However, they highlight concerns about poor disclosures in initial reporting and future trends in provisioning. In contrast, Boscia et al. (2022) empirically assess the effect of ECL on regulatory capital and find that capital buffers fell significantly for European banks when IFRS 9 was first adopted. Additionally, the capital erosion effect was more pronounced for banks which followed the Standardized Approach for Basel capital charge than those which used the Internal Ratings Based approach. Studying the impact of ECL implementation in 666 banks across 61 countries, Kyiu and Tawiah (2023) observe a reduction in bank risk after implementation of ECL provisioning as reflected in reduction in stock volatility and equity beta. They suggest that a higher level of transparency under the new provisioning approach increases investor confidence in the risk management and financial stability of the bank.

In another study of European banks, Salazar et al. (2023) too observe that the loan loss provisioning under ECL provides more transparency as compared to the incurred loss approach. They find that stage 2 allowance is a significant indicator of future risk. They however suggest that application of moratoriums of provisions such as during the Covid-19 pandemic may dampen its explanatory power.

ESRB (2017) and Pérez Rodríguez (2021) emphasize that the accounting standard on ECL establishes broad principles for modelling of ECL and requires significant application of discretion by management of reporting entities. This may result in the heterogeneity in reporting by individual entities even if they have similar positions. Furthermore, some banks may use their discretion to minimize impairment allowance or undertake income smoothening.

In the context of ECL modelling, Kulkarni (2014) emphasizes that the determination of the risk of default or probability of default is one of the most important factors to be considered. Given that IFRS 9 does not prescribe an explicit quantitative model for estimating parameters for ECL modeling, Engelmann (2021) propose a model which they reason provides accurate formulas for lifetime expected credit loss estimation.

In the Indian context, Kulkarni (2014) highlights that the ECL framework under Ind AS 109 is broadly identical to IFRS 9. Based on the data of 48 NBFCs, including 13 HFCs, KPMG (2020) has found significant variations in the ECL provisions applied at the time of first-time implementation. For instance, 6 NBFCs provided for loan losses using the provisions using RBI IRACP norms instead of the ECL provisions. Also, loan provision as a percentage of gross loans ranged from 0.50% to 39.00% across the sample. Analyzing the Ind AS financial statements of 51 NBFCs (including 17 HFCs), an Ernst and Young (2020) study observes an increase in ECL provisions by 19.44% in NBFCs and 9.51% in HFCs as compared with the earlier standards. Our article is an addition to the body of empirical literature on ECL implementation in the Indian context.

8.3. Expected Credit Loss (ECL) Based Provisioning Framework

Ind AS 109 requires entities to apply forward-looking ECL-based allowance at origination and for all subsequent reporting periods to financial assets, till derecognition. The basic premise of ECL rests on estimating the current expected value of probable future loss that may arise due to default by a counterparty and non-recovery of dues on the impaired financial asset. In this section, we describe the ECL framework of Ind AS 109 in terms of scope of application, classification of exposures and the ECL methodology. We also highlight the key differences between ECL-based provisioning under Ind AS and the RBI's IRACP norms.

8.3.1. Scope of ECL Application and Staging of Assets

Under Ind AS, ECL encompasses those financial assets which are investments in debt instruments classified as Amortized Cost and Fair Valued Through Other Comprehensive Income. For FIs, this scope covers their entire loan book and also their non-trading book positions in debt instruments which are held till maturity or available for sale. ECL is also applicable to off-balance sheet exposures like loan commitments and financial guarantee contracts. For eligible exposures, a General Approach needs to be adopted, under which 12-Month ECL or Lifetime ECL needs to be estimated based on the FI's internal models.

To determine whether 12-Month or Lifetime ECL will be applied, the exposures have to be first bucketed into one of three stages on each reporting date (Table 8.1). Stage 3 exposures are those which are already impaired or are non-performing assets (NPA). Stage 2 exposures are those which have faced a 'Significant Increase in Credit Risk' (SICR) since initial recognition. Stage 1 is the residual bucket which includes performing assets which have low credit risk on reporting date and those which are neither impaired, nor have seen a significant increase in credit risk. Explicit backstop measures in terms of number of days past due (DPD) are prescribed for classifying assets in Stage 3 (exceeding 90 DPD) and Stage 2 (exceeding 30

TABLE 8.1

Classification by Stage for ECL Recognitions as per General Approach

Bucketing	*Stage 1: Performing*	*Stage 2: Underperforming*	*Stage 3: Impaired*
Description of Bucket	• Assets on initial recognition • Assets which have "low" credit risk on reporting date • Assets which have not had a "SICR" since initial recognition	• Assets which have had a "Significant Increase in Credit Risk" (SICR) since initial recognition • Backstop: 30+ DPD on reporting date	• Non-Performing Assets /Credit Impaired Assets /Assets with objective evidence of impairment at reporting date • Backstop: 90+ DPD on reporting date
Recognition of ECL	• 12-month ECL Allowance	• Lifetime ECL Allowance	• Lifetime ECL Allowance

Source: Authors' compilation from Ind AS 109.

DPD). However, entities are expected to use in-house qualitative and quantitative tests over and above the backstop measures for impairment and SICR identification. A 12-Month ECL allowance has to be recognized for Stage 1 assets, and a Lifetime ECL allowance is applied to Stage 2 and 3 assets.

8.3.2. Definition of ECL

ECL is defined as the weighted average of credit losses (cash shortfall) with the respective risks of a default occurring as the weights. Furthermore, ECL estimation has to also reflect the following:

a. An unbiased and probability-weighted loss amount that is determined by evaluating a range of possible outcomes

b. The time value of money

c. Reasonable and supportable information that is available without undue cost or effort at the reporting date about past events, current conditions and forecasts of future economic conditions.

The "risk of default" is typically measured by the probability of default (PD) associated with the counterparty in the financial instrument. Cash shortfall is estimated as the net loss (amount due net of amount that can be recovered), if the counterparty defaults. It is therefore dependent upon the projected amount owed by the counterparty at the time of default (also known as exposure at default or EAD) and the proportion of the EAD that may not be recovered (also known as loss given default or LGD). EAD estimation takes into consideration any future repayments or drawdowns by the counterparty as per the credit contract. LGD is measured as 1 – Recovery Rate (RR), where RR is the proportion of EAD which can be recovered by the entity through workout processes, liquidation of security, legal mechanisms, and settlement.

A simplified expression for ECL can be:

$$ECL = PD \times EAD \times LGD$$

The above formula however, needs to be appropriately modified to accommodate the distinction between 12-Month ECL and Lifetime ECL and also to consider time value of money and forward-looking scenarios.

12-Month ECL is the expected loss that may result from default events on a financial instrument within the 12 months after the reporting date. To compute it, the risk of default has to be captured as a 1-Year PD (PD_1) which reflects recent or point-in-time (PIT) conditions. The EAD and LGD also have to respectively indicate the exposure and loss that would arise if default took place within 1 year (thus EAD_1 and LGD_1). Furthermore, since the probability weighted losses are forecast for a future date, they have to be discounted back to the reporting period using the effective interest rate (*EIR*) associated with the instrument so as to account for the time value of money. The 12-Month ECL for Stage 1 exposures can be summarized as:

$$12-Month\ ECI_{S1} = \frac{PD_1 \times EAD_1 \times LGD_1}{(1+\mathrm{EIR})^1}$$

Stage 2 assets require measurement of Lifetime ECL. "Lifetime" under Ind AS is explained as the effective contractual life of the credit facility, taking into consideration the tenor and other pre-payment and extension options embedded in the facility. Lifetime ECL is that which results from all possible default events over the effective life of the financial instrument. It is based on the marginal PDs, EADs and LGDs that are forecast for over the loan life (t) and discounting of the losses to the reporting date. Lifetime ECL for Stage 2 assets can be expressed as:

$$Lifetime\ ECL_{S2} = \frac{PD_1 \times EAD_1 \times LGD_1}{(1+\text{EIR})^1} + \frac{PD_2 \times EAD_2 \times LGD_2}{(1+\text{EIR})^2} + .. + \frac{PD_t \times EAD_t \times LGD_t}{(1+\text{EIR})^t}$$

For Stage 3 instruments, since default has already occurred and the asset is treated as impaired, PD = 1 and Lifetime ECL depends primarily on the outstanding amount on the defaulted facility (the ex-poste EAD) and the estimated LGD and can be represented as:

$$Lifetime\ ECL_{S3} = EAD \times LGD$$

Finally, to conform to the Ind AS requirement, forward-looking information has to be built into the ECL estimates in an unbiased way by considering a range of PD, LGD and EAD values associated with different macroeconomic scenarios and aggregating with probability weights related to the scenarios.

Ind AS is not prescriptive about how the components of ECL should be estimated and what types of macro-scenarios should be considered. It provides some principles-based guidance, but leaves it largely to entities to use their internal approaches. In doing to, entities may also incorporate qualitative inputs and management overlays which create some scope for discretion. It is also clear that there are major differences between RBI's IRACP norms and Ind AS in terms of asset classification and provisioning. The two provisioning approaches are compared in Table 8.2.

TABLE 8.2

Provisioning under Ind As 109 versus RBI IRACP

Asset Classification	**RBI IRACP**	**Standard**	**Special Mention Accounts (SMA) based on Days Past Due (DPD)**			**Non - Performing Assets (NPA)**			**Off Balance Sheet**
		0 DPD	SMA 0 1-30 DPD	SMA 1 31 – 60 DPD	SMA 2 61- 90 DPD	Sub-Standard 90 + DPD – 1 year	Doubtful NPA > 1 year	Loss Deemed Uncollectable	Non Fund Based Facilities & Loan Commitments
	Ind AS 109	**Stage 1**		**Stage 2**		**Stage 3**			**Off Balance Sheet**
		Asset Originated/ Purchased Low Credit Risk No Significant Increase in Credit Risk		Credit Risk has Increased Significantly since Original Recognition		Asset is Credit Impaired			As per Staging Criteria
Provisioning	**RBI IRACP**	RBI Prescribed Provision Rates as % of Funded Outstanding Amounts (0.40% - 2.00%)				15% - 25% of Outstanding	25% - 100% of Outstanding	100% of Outstanding	Not Applicable
	Ind AS 109	12 Month ECL		Lifetime ECL		Lifetime ECL			As per Staging Criteria

Source: Authors' compilation from RBI IRACP Norms and Ind AS 109.

8.4. Data and Methodology

We use financial and non-financial data of 40 NBFCs reporting under Ind AS over the period of three years (2021-23). These include 20 HFCs and 20 Other NBFCs. Our sample represents 24% of the total asset size of NBFCs that have implemented Ind AS. Although NBFCs in India have adopted Ind AS since financial year 2019 onwards, we restrict our study to the period from 2021 to 2023 during which comparison between reported ECL provisions and the corresponding IRACP provisions is possible based on the NBFCs' disclosures. The financial data is extracted directly from published annual reports. Data on date of incorporation of companies, group ownership, name of auditors is taken from the CMIE Prowess data base.

8.4.1. Methodology for Model-based ECL

Our Model-Based ECL is estimated by deriving point-in-time PD and Recovery Rate (RR) for each NBFC, using historical Gross Non-Performing Asset (GNPA) movements. The EAD for each Stage is taken as the Gross Carrying Amount (GCA) reported for that Stage.

For Stage 1, the formula for 12-Month ECL for year t is constructed as:

$$12-Month\ ECL_t^{S1} = GCA_t^{S1} \times 1yrPD_t \times LGD_t \quad (1)$$

Where,

$$1yrPD_t = \frac{Additions\ to\ GNPA_t}{Total\ Performing\ Assets_{t-1}} \quad (2)$$

$$RR_t = \frac{Reductions\ in\ GNPA_t - Write-of\ f_t}{GNPA_t} \quad (3)$$

$$LGD_t = 1 - RR_t \quad (4)$$

For Stage 2, the Lifetime ECL for year t is derived as:

$$Lifetime\ ECL_t^{S2} = GCA_t^{S2} \times Cumulative\ PD_t \times LGD_t \quad (5)$$

To estimate the Cumulative PD, we assume an average loan lifetime of 2.5 years (which is what is specified under the Basel credit risk capital charge framework) and use an exponential function to extrapolate the Cumulative PD from the 1-Year PD as follows:

$$Cumulative\ PD_t = 1-(1-1yrPD_t)^{2.5} \quad (6)$$

For Stage 3, the Lifetime ECL is taken as:

$$Lifetime\ ECL_t^{S3} = GCA_t^{S3} \times LGD_t \quad (7)$$

The above formulae for ECL do not conform exactly with the requirements under Ind AS for two reasons. First, in the absence of a long time series of default and recovery data to establish macro-linkage, the ECL has been estimated purely as a point-in-time measure which represents only current information and does not consider future macro scenarios. Second, we do not discount the probability weighted credit loss and as such, ignore the effect of time value of money, which would otherwise generate marginally smaller estimates as compared to our model.

In presenting our stylised facts (Section 8.5), we distinguish between the stage-wise model ECL estimates. However, for the purpose of our econometric model (Section 8.4.2) we use only the 1-year ECL percentage measured as the product of 1-Year PD and LGD as an independent variable as:

$$Model\ ECL\%_t = 1yr\ PD_t \times LGD_t \quad (8)$$

8.4.2. Methodology for Regression Analysis

Our econometric analysis tries to explain the variations in reported ECLs across NBFCs on the basis of various quantitative and governance-linked variables. Our basic premise is that reported ECL percentages should be dependent upon the NBFCs' credit risk profile measured in terms of PD, LGD, and ECL derived from reported defaults and recovery performance. Additionally, with the IRACP provisions being introduced as a floor, we can expect the same to influence reported ECL. Additionally, we include control variables in terms of type of NBFC, firm size, age, whether it is part of a Group, and whether it has strong auditors.

We perform two pooled regressions using the following equation:

$$ECL_{total} = \alpha + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \text{-----} \beta_n X_n + \varepsilon \quad (8.1)$$

Where,

ECL_{total} is the total reported ECL as a percentage of total Gross Carrying Amount (GCA);

X_1, X_2, X_3...., X_n are the explanatory variables;

α is the intercept term;

β_1, β_2, β_3,...., β_n are the estimated regression coefficients; and

ε is the error term.

Model 1 uses the explanatory variables: PD%, LGD%, Ln Total Assets, Age, Group Ownership, IRAC Total %, and NBFC Type. Model 2 uses the explanatory variables: Model based ECL%, Log of Total Assets, Age, Group Ownership, IRAC Total %, and NBFC Type. The variable definitions are provided in Table 8.3.

8.5. Stylized Facts

In this section, we present some interesting results pertaining to the changing dynamics of ECL-based provisioning across Indian NBFCs. Wherever relevant, we contrast the performance of HFCs with other NBFCs. Figure 8.1 depicts that for NBFCs as a whole, the share of Stage 1 gross carrying amount (GCA) has increased from 86.39% in FY 2021 to 91.88% in FY 2023. Over the same period, the proportion of Stage 2 and Stage 3 has declined, with the former category share falling faster (from 9.42% to 4.61%). The changing profile of expo-

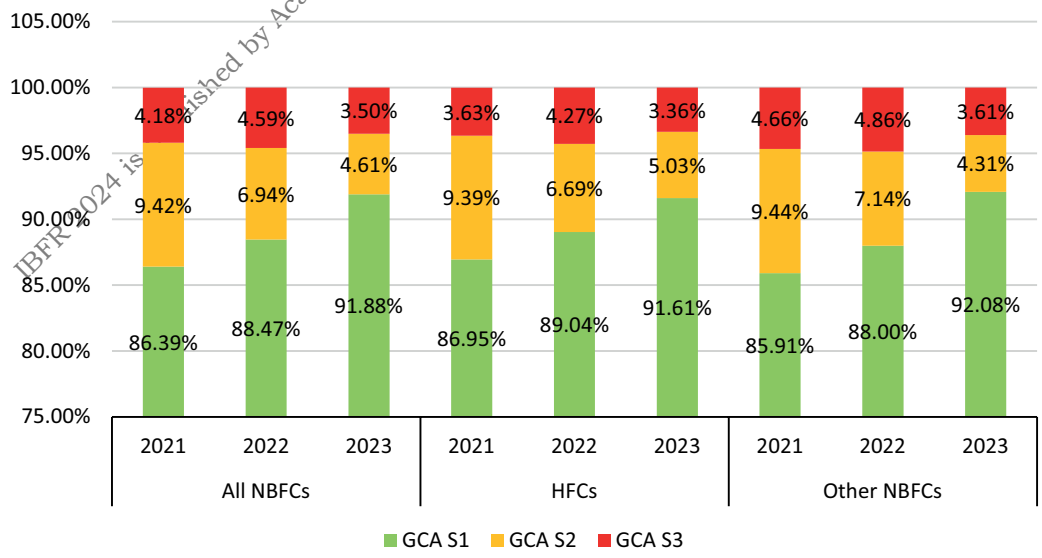
TABLE 8.3

Variable Definitions

Variable Name	*Definition*
Age	Current year – year of incorporation
Ln Total Assets	Natural Log of Total Assets
Big 4 Audit Firm	Coded 1 if the auditor includes a Big 4 audit firm or affiliate, else 0
NBFC Category	Coded 1 if the company is HFC, else 0
Group	Code 1 if the company belongs to an ownership group as per CMIE Prowess, else 0
ECL Total %	Total reported ECL provision for on-balance sheet loans as a percentage of total gross carrying
IRAC Total %	Total reported provisions as per IRACP norms as percentage of total gross carrying amount of loans
PD %	Probability of Default derived from authors' estimates as per Equation 1
LGD %	Loss Given Default derived from authors' estimates as per Equations 3 and 4
Model-Based ECL %	Derived from authors' estimates as per Equation 8

FIGURE 8.1

Stage-wise Distribution of Gross Carrying Amount



Source: Authors' own estimation.

sures has been similar for HFC and Other NBFC categories and is also aligned to the trend of shrinking GNPA, SMA1, and SMA2 accounts of NBFCs (Table 8.4). Furthermore, it is interesting to note that the proportion of Stage 2 exposures in our sample is higher than the aggregate proportion of SMA1 and SMA2 reported for all NBFCs over the last three years. This suggests that NBFCs may have likely gone beyond the Ind AS backstop measure of 30+ days past due, and conservatively applied other SICR criteria for identification of Stage 2 assets.

TABLE 8.4

Asset Quality of All NBFCs

Year	*GNPA (%)*	*SMA-1 + SMA-2 (%)*
Mar-21	6.10%	5.30%
Mar-22	5.80%	4.80%
Mar-23	3.80%	2.60%

Source: Financial Stability Report (RBI, June 2023).

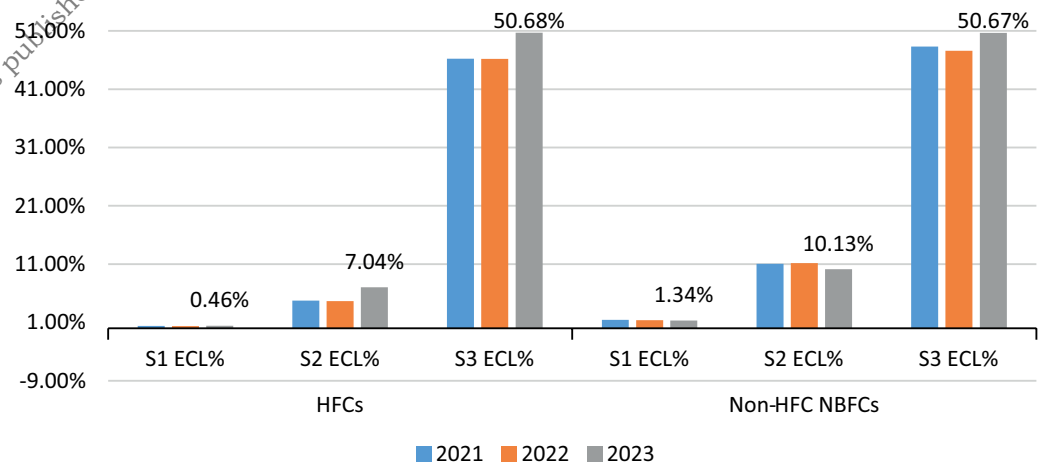
The Stage-wise ECL as a percentage of the GCA of each stage (Figure 8.2) shows that there is a monotonic and exponential increase in reported ECL percentages from the least risky to the most risky stage. Also, over the last three years, the ECL rates have gone up. HFCs in aggregate have maintained lower Stage 1 and 2 ECL relative to other NBFCs. This is likely to be a reflection of the lower inherent risk of their secured housing loans portfolios. However, it is curious to note that the Stage 3 ECL is very similar for both the categories of NBFCs (at around 50%), raising some doubts about the underlying LGD models used by the NBFCs, which are the primary drivers of the ECL for Stage 3 accounts.

When reported ECL and IRACP provision percentage are compared (Figure 8.3), we see that the overall ECL-based provisions have been higher than the IRACP provisions for each of the stages, with the difference narrowing from 1.77% in FY 2021 to 1.28% in FY 2023. The positive gap has been largest for Stage 3. HFCs however, show some deviant behavior. Their Stage 1 gap was negative for the years 2021 and 2022, turning marginally positive (0.04%) in 2023, whereas their Stage 3 gap was highly positive for the years 2021 and 2022, turning marginally negative (-0.12%) in 2023. This hints at a potential provisioning arbitrage across stages, to ensure that their ECL-based provisions converge to the IRACP requirements.

On contrasting the reported ECL figures of our sample of NBFCs with our model ECL estimates (Figure 8.4A and 8.4B), we find a number of noteworthy results. First, the reported Stage 1 ECL for all NBFCs have been lower than the model outputs, whereas Stage 2 ECL is higher. The stage 2 effect is likely because our model assumes 2.5 years effective maturity to derive cumulative PDs, whereas the actual effective maturity of Stage 2 accounts may be longer and

FIGURE 8.2

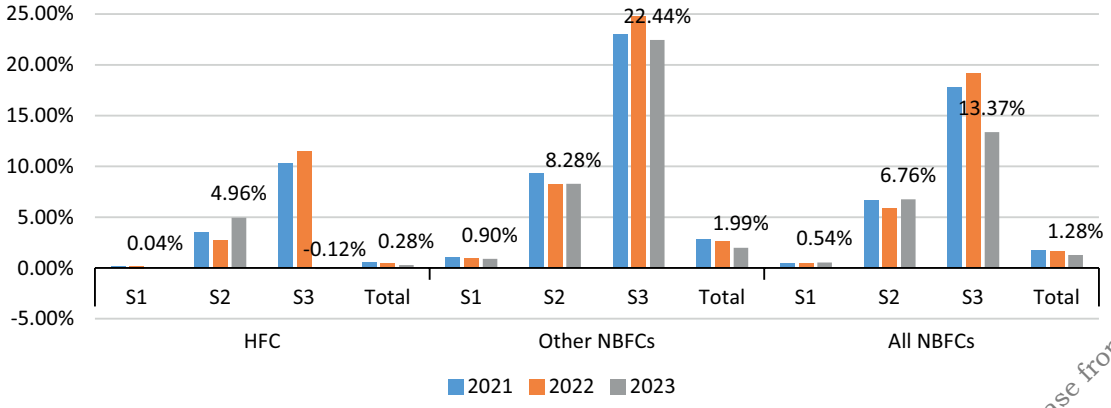
Stage-wise ECL as a Percentage of Gross Carrying Amount



Source: Authors' own estimation.

FIGURE 8.3

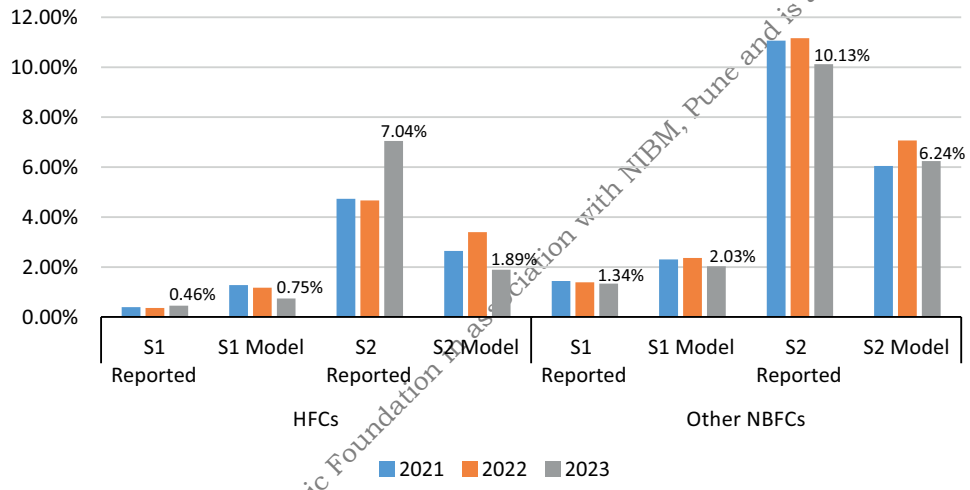
Stage-wise Difference in Reported ECL and IRACP Provisions



Source: Authors' own estimation.

FIGURE 8.4A

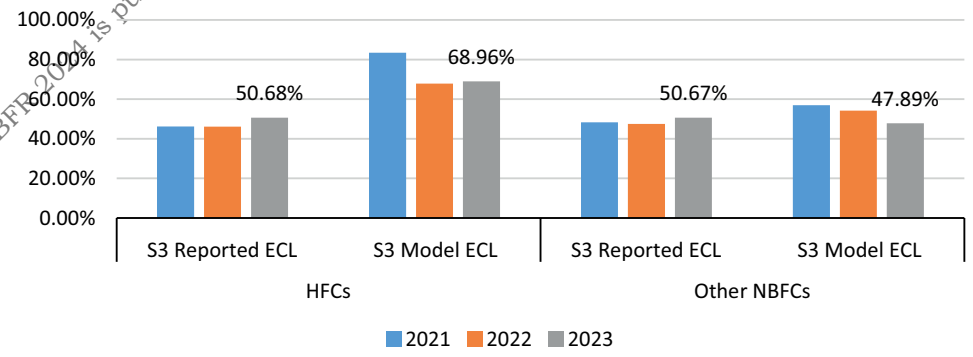
Reported vs Model-based ECL for Stage 1 and Stage 2



Source: Authors' own estimation.

FIGURE 8.4B

Reported vs Model-based ECL for Stage 3



Source: Authors' own estimation.

TABLE 8.5

Off-Balance Sheet ECL Metrics

	Off B/S Amount as % of GCA			*Off B/S ECL as % of Off B/S Amount*			*Off B/S ECL as % B/S ECL*		
	HFCs	*Other NBFCs*	*All NBFCs*	*HFCs*	*Other NBFCs*	*All NBFCs*	*HFCs*	*Other NBFCs*	*All NBFCs*
2021	4.72%	1.63%	2.71%	0.46%	1.77%	0.97%	0.64%	0.63%	0.63%
2022	6.21%	1.79%	3.29%	0.38%	1.01%	0.61%	0.68%	0.38%	0.46%
2023	6.93%	2.16%	3.64%	0.39%	0.84%	0.58%	1.45%	0.51%	0.69%

Source: Authors' own estimation.

call for higher lifetime ECL. Second, for HFCs in particular, model-based ECLs have been declining for Stage 1 and Stage 2, driven by the historical point-in-time improvements in PDs and LGDs. However, HFCs' reported Stage 1 and Stage 2 ECL have actually gone up over time, implying that their own models may be incorporating some forward-looking adverse macroeconomic scenarios to capture future stress in their performing assets. Third, for other NBFCs, there is very close co-movement over time of their reported ECLs and model-based ECLs, suggesting that their models may have built in a lower impact of future macro developments and be more point-in-time. Finally, in Figure 8.4B, we see that HFCs have significantly under-reported their ECL for Stage 3 as compared to the estimated LGDs of their portfolios, although the gap has narrowed in FY 2023. For other NBFCs, the difference has been much smaller, and in fact, for FY 2023, the reported Stage 3 ECL was higher than the model estimate, suggesting increasing conservatism.

ECL provisions under Ind AS have to be maintained for off-balance sheet credit exposures. However, not all NBFCs in our sample have reported these amounts, or have disclosed incomplete data. For the available data, the off-balance sheet ECL is summarized in Table 8.5. First, the proportion of off-balance sheet (B/S) amounts to GCA has increased over three years and is at 3.64% in 2023. HFCs have reported a higher share of off-balance sheet amounts vis-à-vis other NBFCs. Second, both cross-sectionally and temporally, the off-balance sheet ECL percentages are aligned to on-balance sheet ECL for Stage 1. This is expected, given that such exposures are primarily classified into Stage 1. Finally, this enhanced coverage increases the provisioning requirements by 0.69% overall in 2023, with the impact being higher for HFCs as compared to other NBFCs.

8.6. Results of Regression Analysis

Our pooled regression aims to explain the variations in reported ECL percentages based on a number of quantitative and qualitative parameters, which have cleared the tests for multicollinearity. We use robust standard errors in the regression equations to address the problem of heteroscedasticity. Results are presented in Table 8.6.

As per Model 1, both PD% and LGD% have a significant positive impact on reported ECL%; the former at 1% and the latter at 5% level of significance. This is in line with our expectation that the NBFCs' credit risk profile drives their ECL provisions under the new accounting standards. The higher coefficient for PD% suggests that NBFCs' internal ECL estimation is likely to be more sensitive to default rates in their credit portfolios as compared to historically estimated recovery rates. However, none of the other variables are statistically significant.

Model 2 replaces the PD% and LGD% with their product, which captures model-based ECL% as the key explanatory variable. The results indicate that reported ECL% is strongly influenced by model-based ECL% – the coefficient is positive and highly significant at 1% level. However, the coefficient is less than one, implying that a change in the model-based ECL by 1% changes the reported ECL by only 0.415%. The lower sensitivity of the actual provisions to modelled

TABLE 8.6

Results of the Regression Models

Dependent Variable: ECL Total %		
Explanatory Variables	*Model 1*	*Model 2*
PD %	0.346***	
	(0.066)	
LGD %	0.012**	
	(0.005)	
Model-Based ECL %		0.415***
		(0.086)
IRAC Total %	0.126	0.154
	(0.143)	(0.174)
Ln Total Assets	0.000	0.001
	(0.002)	(0.002)
Age	0.000	0.000
	(0.000)	(0.000)
Group	0.010	0.011*
	(0.006)	(0.006)
NBF Category	-0.002	-0.005*
	(0.003)	(0.003)
Big 4 Audit Firm	0.002	0.001
	(0.004)	(0.004)
Constant	-0.012	-0.005
	(0.010)	(0.009)
Observations	120	120
Adjusted R-squared	.378	.328

Source: Author's own calculation

Note: Robust standard errors in parentheses

*** p<0.01, ** p<0.05, *p<0.1

estimates is indicative of a smoothening effect on the procyclicality of ECL. During a period of improving asset quality, as in our study, this moderation is a good sign and implies that provisions will not fall as sharply as the reducing credit risk. The regulatory IRACP is likely to be one of the factors contributing to the control. The other factor may be the NBFCs' internal forward-looking scenarios which may build in conservative PDs and LGDs based on future expected downturns. This is apparent in the increasing Stage 1 and 2 provisions of HFCs (Figure 8.4A) and Stage 3 provisions of other NBFCs (Figure 8.4B) despite the marginal decline in estimated PDs and LGDs. However, during downturns, this temperance may leave FIs underprovided vis-a-vis the point-in-time worsening of credit risk.

Model 2 also identifies two other significant variables, albeit at 10% level of statistical significance, viz. group ownership and NBFC type. The positive coefficient for group ownership suggests that for group-owned firms, the reported ECL percentages are likely to be higher. The negative coefficient for NBFC category implies that HFCs are likely to apply lower provisioning percentages as compared to other NBFCs. This last result is also supported by our stylized facts (Figure 8.2). It is also important to note that firm size and age are not significant in explaining the variations in ECL provisions. Alternate models which include Capital Adequacy Ratio (CAR) are not reported, since the overall results do not change much and CAR itself remains insignificant.

A non-parametric regression for the two models presented above has been run to check for robustness of the results. The non-parametric regression model does not require the assumption of normal distribution of the error terms and also addresses issues related to sample size. In line with Model 2, the model-based ECL% continues to show a positive and significant impact on reported ECL, while individually, PD% and LGD % become non-significant. Interestingly, the non-parametric model also throws up IRACP Provisioning % as a significant explanatory variable with a positive coefficient. This suggests that NBFCs not just link their ECL provisions to their credit risk profile, but also align them closely to the regulatory requirements.

8.7. Conclusion

The adoption of Ind AS by Indian NBFCs has transformed provisioning methodology from a prescriptive regulatory method to the risk-sensitive ECL approach. By introducing IRACP provision as a backstop measure to ECL allowance at an aggregate portfolio level, RBI has tried to discourage injudicious provisions minimization and earnings management by NBFCs, which may otherwise occur due to discretionary elements of internal credit risk models and forecasted macro linkages. In this chapter, we analyse the data across a sample of large NBFCs over a period of three years, when simultaneously, ECL and IRACP provisions have been

reported. We also model ECL from granular NPA movements at individual entity level. Our study captures the nuances of loan loss provisioning practices by FIs in India and derives important policy and management implications.

We highlight a few encouraging results to start with. First, classification of assets by NBFCs across ECL stages has been broadly aligned to regulatory norms. Where discretion is allowed, especially in identification of Stage 2 assets, NBFCs have been conservative. Second, there is a strong linkage between the reported ECL numbers and the model-based ECL estimates derived from the default and recovery rates. This association holds cross-sectionally, over time and across ECL Stages, such that it is clear that to a large extent ECL provisioning by NBFCs is risk-sensitive. Third, with the improving risk profile of the credit business of NBFCs, ECL provisions have come down. This reduction however has not led to a breach of the regulatory floor for the overall portfolio, and also for the riskier Stage 2 and 3 assets.

There are a number of pertinent issues for FIs and regulators that emerge from our study. Firstly, there are wide divergences in ECL estimates across the NBFCs in our sample, which are expected to some extent due to variations in the credit profile of each NBFC business. They are also likely to be driven by differences in internal models and the incorporation of subjective macro scenarios. Regulators will need to ensure rigorous model validation, despite which the provisioning numbers may not be sufficiently amenable to consistent comparison. This problem is currently a key issue faced by supervisors in regions like European Union, where the Internal Rating Based (IRB) Approach has been permitted for credit risk capital charge computation. As a consequence, the Basel III revised version has introduced a floor to the capital charge based on the rule-based Standardized Approach. RBI's IRACP floor on NBFCs' ECL provisions, and the proposal of a similar limit to be applied for commercial banks when they adopt the ECL framework, is thus an effective downside control on the cross-sectional ECL disparities.

While imposition of IRACP provisions as a floor may imbibe regulatory prudence and create countercyclical provisioning buffers, it may also be implicitly treated as a cap by banks and FIs for converging their overall ECL based provisions rather than reflecting the true risk profile across asset classification stages. This premise is more likely to be tested during downturn periods when ECL starts rising, but not regulatory provisions requirements. Such behavior seems apparent for HFCs in our sample, whose data suggests a potential offsetting of ECL provisions across stages, while converging to the regulatory floor at the aggregate level. Greater supervisory and auditor oversight will be required to keep such actions in check.

Third, the enhanced coverage of off-balance sheet exposures within the ECL framework increases NBFCs' provisioning by around 70 basis points, despite such non-fund-based business representing a relatively small proportion of their credit portfolios. Commercial banks, with their larger off-balance sheet credit exposures, will thus need to be prepared for a much bigger impact when they transition to the ECL-based provisioning framework proposed by RBI.

Finally, the current reporting of ECL outputs and model parameters by NBFCs is quite idiosyncratic, even within regulator-specified templates. It falls short of international best practices in terms of rigour and granularity. Policy makers will need to mandate greater transparency and uniformity in the ECL disclosures provided by Indian banks and FIs. This will go a long way in improving investors' and regulators' ability to interpret and compare the ECL numbers and for assessing the adequacy of loan loss buffers against inherent business risks.

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9

Emerging Regulatory Contours after the Collapse of Silicon Valley Bank

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9.1. Introduction

On March 10, 2023, Silicon Valley Bank (SVB) was closed down by financial authorities in California. The previous day, around USD 40 billion of deposits had been withdrawn and another USD 100 billion outflow was imminent. The bank had lost 85% of its deposits in two days. The collapse of SVB was followed by the shutdown of Silvergate Bank, Signature Bank and First Republic Bank, in quick succession. The final straw was the takeover of Credit Suisse by UBS, in mid-March 2023, with massive liquidity support from the Swiss Central Bank. The crisis had spilled over from US to Europe in less than a week (BIS, 2023a).

The story of SVB is reminiscent of the Orange County disaster in 1994. This municipality in California invested USD 7.5 billion of short-term public deposits in long-term government bonds and structured products called inverse floaters (in which coupons fall as rates rise), in the early 1990s. When the Fed raised its policy rates by 2.5% in 1994, cost of funds increased and bond prices crashed. On December 1, 1994, Orange County filed for bankruptcy with a loss of around USD 1.6 billion. The event also evokes memories of the bond market collapse in India, from April 2004 onwards. Between 2001 and 2004, Indian banks built up a portfolio of long-term bonds, as interest rates declined. When rates began to rise, they made large mark-to-market losses on these traded securities. A substantial relaxation in HTM limits was needed to bail them out.

The collapse of SVB has raised several fundamental questions on risk management at banks and financial institutions, as well as its regulation and supervision, across the globe. Insightful review reports have been released (FRB, 2023, BIS, 2023a). The Interest Rate Risk and Liquidity Risk standards may also be modified by the Basel Committee and national regulators (ET, 2023, RBI, 2024b), in the near future. In this chapter, we focus on the potential regulatory repercussions of the failure of SVB. Instead of the changes proposed in the recent literature which aim to strengthen existing guidelines (e.g., tweaks in LCR and NSFR weights on assets and liabilities), we emphasize on improvements in the process of risk management, i.e., on Pillar II issues. Hence, we discuss why global implementation of Internal Liquidity Adequacy Assessment Process (ILAAP) and Funds Transfer Pricing (FTP) methods is necessary. No capital or liquidity buffer may be immune to the quantum of shocks faced by SVB. However, prudent risk management ensures that the composition of assets and liabilities is not distorted to such an extent that the bank is vulnerable to extreme events. This also places greater burden on the supervisory process.

This chapter is structured as follows. In Section 9.2, we describe the journey of SVB, from boom to bust, within a few years. Section 9.3 argues in

1. The authors are grateful to R. Shashikala and Tasneem Chherawala for their valuable comments and suggestions. The usual disclaimer applies.

favour of uniform regulation of banks and FIs, regardless of portfolio size and composition. In Section 9.4, we explain why it is important to bring Interest Rate Risk in the Banking Book under Pillar I. Section 9.5 discusses the need for adoption of ILAAP. In Section 9.6, we highlight the significance of FTP and Liquidity Transfer Pricing Methods. Section 9.7 concludes.

9.2. The SVB Story

Silicon Valley Bank Financial Group (SVBFG) was founded in 1983 and was headquartered in Santa Clara, California. At the end of 2022, its total assets were around USD 212 billion, of which its principal subsidiary Silicon Valley Bank (SVB) owned around USD 209 billion. The main clients of SVB were companies in the technology and life sciences sectors. These companies were the primary source of its deposits as well (FRB, 2023). In 2018, SVB was classified as a Category IV bank by the Federal Reserve after the passage of the Economic Growth, Regulatory Relief and Consumer Protection Act (better known as S.2155). As a non-G-SIB under S. 2155, with an asset size of less than USD 250 billion, it was exempted from Basel III Liquidity standards. However, it was still subject to internal liquidity stress tests and continuous Fed supervision (Russo, 2023). During 2021 and 2022, supervisory reviews flagged off serious concerns about its risk oversight, control and governance, as well as its stability and solvency. However, no concrete action was taken by either the bank or the Fed. On March 8, 2023, the bank announced that it had made losses of around USD 1.8 billion, on sales of its entire AFS bond portfolio worth USD 21 billion. Its failure to raise equity capital worth USD 1.25 billion, to absorb the losses, triggered the sharp deposit withdrawal and sudden collapse, as discussed, within two days (SVB, 2023, BIS, 2023a).

Let us understand the SVB crisis in terms of Table 9.1.

The first row captures the change in Economic Value of Equity (Market Value of Assets – Market Value of Liabilities), for the hypothetical 2% rate hike suggested by Basel II. If long-term, fixed rate, assets are funded by short-term liabilities, such a rate shock will erode Economic Value of Equity (EVE). As market rate increases, cost of funds (on short-term liabilities) responds sooner, while yields on assets rise later. As a result, future net worth will decline. The market value-weighted average maturity of an asset or liability is known as its duration. It is easy to show that the bigger the positive duration gap (i.e., asset duration > liability duration), the sharper the percentage erosion in EVE. Hence, the first row suggests that, between 2017 and 2021, duration gap had widened.

The increase in duration gap was driven by two factors. On the asset side, SVB increased its exposure to long-maturity government bonds and agency issued mortgage-backed securities. At the end of FY 2022, its Credit-Deposit ratio

TABLE 9.1

Select Balance Sheet and P&L Data for SVB (USD Million)

	2017	*2018*	*2019*	*2020*	*2021*	*2022*
EVE Impact - 2% rise	11.10%	5.70%	-2.50%	-15.40%	-27.70%	NA
Trading P/L	64.6	88.09	134.7	420.8	761	-285
Zero-cost Deposit	36,656	39,103	40,841	66,519	1,25,851	80,753
Deposits with Intt	7598.6	10225.5	20916.2	35462.5	63352	92356
Short-Term Borrowing	1033.7	631.4	17.4	20.5	121	13565
Long-Term Debt	696	697	348	844	2570	5370

Note: NA: Not Available.

Source: SVB Annual Reports, various issues.

was 43%. Around 62% of its assets consisted of bonds (SVB, 2023). The duration of its bond portfolio (AFS and HTM combined) increased from 3.97 years in 2021 to 5.7 years in 2022 (Vo and Le, 2023). On the other hand, Table 9.1 shows that the volume of deposits and other liabilities more than tripled between 2019 and 2021. Total outsider liabilities jumped from USD 62 billion in 2019 to around USD 190 billion in 2021. The rapid business growth was funded at low cost, to enhance profitability. Much of the spike in outsider liabilities came from zero-cost deposits. About 94% of its deposits were uninsured (FRB, 2023). Hence, its liability duration was low because low-cost and uninsured deposits tend to be unstable.

Table 9.1 also depicts that trading profits and zero-cost deposits accelerated between 2019 and 2021. This means that market rates declined during this period. Lower interest rates made long-term bonds more attractive to SVB, and no-cost deposits acceptable to its customers. As market rates spiked in 2022, driven by sustained Fed policy rate hikes, bond prices crashed and zero-cost deposits were drawn down. Mark-to-market losses in the trading book amounted to USD 285 million – from a profit of USD 761 million in 2021 – and more than USD 45 billion worth of zero-cost deposits (125.8 bn. – 80.7 bn.) were withdrawn. Interest rate risk led to both asset and liability-side liquidity risk, as the MTM values of bonds crashed, during a phase of severe deposit outflows. At this point, the bank had an opportunity to issue long-term bonds and secure itself against both interest rate and liquidity shocks in future. However, it replaced these no-cost, volatile deposits with short-term funds (+USD 13.5 bn.) and interest-bearing deposits (+USD 29 bn.) which were subject to premature withdrawal. Liquidity pressure also increased interest cost for SVB, since the fresh short-term debt and interest-bearing deposits were more expensive than zero-cost deposits. The accretion to long-term debt was miniscule (less than USD 3 bn.).

In sum, the strategy of funding long-term bonds with unstable, zero-cost, deposits worked well for SVB as long as market rates were low. But it backfired when rates shot up in 2022. As the liquidity pressure worsened over time, SVB felt an urgent need to encash its traded assets. Hence, it tried to sell its entire AFS portfolio worth USD 21 billion and made irreparable losses worth USD 1.8 billion. The substitution of zero-cost deposits with short-term liabilities in 2022, rather than long-term debt, hastened the closure of the bank. Whether SVB preferred more short-term debt, at that juncture, or could not raise long-term liabilities due to an erosion in its creditworthiness, we will never know.

The sudden demise of SVB sent shockwaves through global financial markets. Bank equity prices crashed by 20% to 30% in US and Europe. CDS spreads spiked by 30 bp – 40 bp in March 2023. CP and interbank funding spreads rose by 80 bp – 120 bp. Investors exhibited *flight to safety* symptoms as yields on 10-year US treasuries and German Bunds fell by 100 bp, within a week. The Swiss G-SIB Credit Suisse was also swept away by the market turbulence (IMF, 2023).

Implications for Banks and FIs

The failure of SVB has several important implications for the BFSI sector. These are:

a. Risk management is not regulatory compliance: Risk management is essential to maintain bank solvency and stability. SVB did not hold enough liquid assets or long-term liabilities because it is not subject to the Basel III Liquidity standards – Liquidity Coverage Ratio and Net Stable Funding Ratio. Hence, it was exposed to sharp drawdown of volatile, no-cost, deposits when rates spiked. It should have created these safeguards, on its own, without regulatory compulsion. Nor (by its own admission) has it conducted stress tests on interest rate risk. These tests are part of the Basel III toolkit for almost a decade.

b. Risk management is futuristic: The EVE Scenario analysis (with 2% rate hike) continued to flash that wider duration mismatches could wipe out a large fraction of the net worth, if there was a spike in market rates. But SVB did not change its

asset-liability profile when interest rates were low. Large positive duration gaps increased its profitability, during an easy money regime. After the crisis, it tried to focus on shorter-maturity investments, derivative products with floating-rate income and longer-tenor liabilities, in future. In a similar vein, SVB tried to raise equity capital only after it incurred large losses on bonds. It should have strengthened the buffer, in anticipation of the loss, when rates started to rise. The bank attempted to improve its portfolio composition and capital adequacy after the horse had bolted.

c. Asset-Liability mismatches can be hazardous: SVB had a low credit-deposit ratio (43%) compared to peers. Its loan portfolio was also concentrated in low-risk assets. Likewise, its bond portfolio consisted of government and high-grade corporate paper. In other words, it was exposed to low credit risk. But, its failure was caused and aggravated by wide duration mismatches between assets and liabilities. As a result, it was caught up in a vicious cycle of interest rate and liquidity shocks.

9.3. Regulatory Implications of SVB Collapse

The failure of SVB may have widespread regulatory ramifications for financial risk management. The closure of an anonymous bank in the US triggered the demise of a large global bank in Europe within a week. In July 2024, RBI modified LCR guidelines, through introduction of haircuts on government bonds and higher run-off factors on deposits with mobile and internet banking facilities, in light of the SVB collapse (RBI, 2024b). The Basel Committee and the Fed Reserve have also underlined the need for regulatory reforms (BIS, 2023a, FRB, 2023), after the crash of SVB. In this section, we discuss why banks, FIs and NBFCs should be subject to uniform regulation.

No Bank is Too Small to Fail

Any institution that behaves like a bank (i.e. takes deposits and makes loans and investments) should be treated (i.e. regulated) like one. There should be no discrimination in terms of business models or volumes. As we have seen, for most organizations, risk management is a matter of regulatory compliance. Financial institutions are more vigilant if they are under the purview of Basel guidelines. Otherwise, they assume unacceptable levels of risk. For instance, SVB was the 16th largest bank in the US. Its balance sheet size was less than USD 250 billion. As indicated, it was exempted from Basel III Liquidity and Interest Rate Risk standards, in 2018. Hence, it was not serious about ALM. It continued to widen duration gaps, as long as interest rates were low, to maximize short-term profitability. In short, smaller banks may pose higher systemic risk, due to structural weaknesses. Larger banks may have better risk management systems and processes. It follows that uniform risk management standards should be applied to all banks, regardless of asset size.

That is why, in the recent past, RBI has tried to harmonize the risk management standards of NBFCs with those of banks. As a result, the large (Upper Layer) NBFCs in India exhibit capital and liquidity ratios, which are far above the regulatory thresholds (Basu, 2023). Better risk management, governance and oversight will also enhance the reputation and creditworthiness of the NBFC sector and enable it to borrow at low cost from market sources without excessive dependence on bank credit. RBI has already increased risk weights on bank credit to NBFCs, in order to constrain interconnectedness and the chance of contagion in the financial sector (RBI, 2023a). This regulatory initiative should slow down the explosive bank credit growth to NBFCs, which followed the ILFS crisis and the pandemic. It is expected that with the gradual withdrawal of banks, NBFCs will be able to raise funds from the market if they are well-regulated and governed.

The banking sector in the US faces a similar problem. Credit exposure of banks to non-bank financial firms experienced rapid growth

after the global financial crisis. Since 2013, it has more than doubled, with approximately half of this amount consisting of off-balance sheet undrawn credit lines. In comparison, the cumulative growth in credit lines extended to nonfinancial firms during the same period was approximately 40%. The significant amount of undrawn credit lines to the nonbank financial sector represents a substantial exposure when measured as a percentage of total bank assets. While all bank groups have increased their credit line exposures to nonbanks, the majority of undrawn credit lines are concentrated at the largest banks subject to the standard LCR (FRB, 2020).

These banks have doubled their holdings of liquid assets while nonbank financial firms have reduced their cash and cash equivalents, offset by increased reliance on bank credit lines. This shift poses implications for financial stability, especially during market turmoil when securing financing becomes challenging. Financial firms, reliant on short-term debt for long-term assets, face heightened risks during such periods. Government-backed liquidity facilities, established during the global financial crisis, aimed to stabilize nonbank financial firms. The higher reliance on credit lines and reduced liquidity positions increase the likelihood of nonbanks drawing on credit lines during market turmoil. The upshot is that if nonbanks are subject to similar risk management guidelines as banks, they would have better access to financial markets and need not depend on bank credit. They may even sell their high-quality liquid assets to tide over stress episodes (FRB, 2020, IMF, 2023).

Hence, RBI has also nudged co-operative banks to migrate from Basel I to Basel III, in a calibrated manner. The recent guidelines on Fraud Risk Management and Prompt Corrective Action (PCA) framework for co-operative banks (RBI, 2024a, 2024c) are important steps in the right direction.

9.4. IRRBB under Pillar I

This is not a new idea. After the global financial crisis, a number of attempts have been made to incorporate Interest Rate Risk in the Banking Book (IRRBB) under Pillar I of Basel III. In June 2015, the Basel Committee introduced draft guidelines, which proposed the inclusion of IRRBB under Pillar I (BIS, 2015). However, the suggestion faced severe backlash from the global banking community. Hence, the final Basel standards, issued in April 2016 (modified and adopted by RBI in February 2023), retained IRRBB under Pillar II of Basel III. In a recent interview, Agustin Carstens (General Manager, BIS) observed that the argument for treatment of IRRBB as a Pillar I item merited some attention (ET, 2023).

The first reason for the treatment of IRRBB as a Pillar I item is that it would account for the losses in the HTM portfolio when rates are expected to rise. The spike in Duration Gap at SVB, between 2019 and 2021, was triggered by a sharp rise in duration of HTM bonds. The portfolio duration of the HTM segment shot up from 4.1 years in 2021 to 6.2 years in 2022. In other words, as market rates jumped in FY 2022, longer-maturity bonds were shifted to the HTM portfolio, to avoid MTM losses. Since 2004, Indian banks have also transferred large amounts of bonds from the AFS and HFT segments to HTM, under similar circumstances, to contain Market Risk Capital Charges. The Fundamental Review of the Trading Book (FRTB), finalized in 2019, precludes such transfers from one accounting category to another. Accumulation of bonds in the HTM segment not only hides the true interest rate risk of a bank, but also worsens its liquidity risk profile. These long-term bonds cannot be sold, at short notice, to meet volatile deposit outflows. The large duration gap at SVB is a marker of its liquidity mismatch as well. Imposition of mandatory (i.e., Pillar I) capital charge for IRRBB would reduce the incentives for concealment of interest rate and liquidity risks through large-scale transfer of long-term bonds to HTM.

The second reason is that banks would be encouraged to fix risk capacity and risk appetite for IRRBB. They would be forced to set Duration Gap Limits, in order to protect their regulatory and economic capital buffers. The Financial Stability Board defines Risk Capacity as *the maximum level of risk the financial institu-*

tion can assume given its current level of resources before breaching constraints determined by regulatory capital and liquidity needs (FSB, 2013). In other words, the bank can never incur losses which erode its regulatory capital buffer. Its portfolio duration gap must be tailored to fit this constraint. Let us illustrate with an example. For instance, if the Tier I capital of a bank is ₹2400 crores, the EVE loss can never exceed 15%, i.e., ₹360 crores, under the recent Basel guidelines (RBI, 2023a). Let the hypothetical rate rise be 200 basis points, market value of assets ₹15000 crores, market value of liabilities ₹12000 crores and the weighted average portfolio yield (on assets and liabilities) is 6%. The formula for EVE loss would be

$$\Delta EVE = -(D_A - (MVL/MVA) \times D_L) \times MVA \times \Delta R/(1+R)$$
$$= -(D_A - kD_L) \times MVA \times \Delta R/(1+R) \quad \text{Equation 9.1}$$

Where D_A is portfolio asset duration, D_L is portfolio liability duration, MVA is Market Value of Assets and MVL is Market Value of Liabilities. ΔR denotes the rate shock.

Substituting the values in the formula, the maximum duration gap which corresponds to an EVE loss of ₹360 crores – the 15% Tier I threshold – is 1.27 years. However, the internal EVE loss limit cannot be as high as the IRRBB risk capacity of ₹360 crores. It is determined by the Risk Appetite of the bank, which is defined by FSB as *the aggregate level and types of risk a financial institution is willing to assume within its risk capacity to achieve its strategic objectives and business plans* (FSB, 2013). The exact linkage between risk capacity and risk appetite is beyond the scope of this chapter. Let us assume, for simplicity, that the EVE Risk Appetite is ₹300 Cr. Hence, the duration gap limit must be such that the maximum EVE loss is ₹300 Cr. It turns out to be 1.06 years. In other words, the asset and liability portfolios should be adjusted in a manner that the positive duration gap is at most 1.06 years. This implies dependence on more short-term or floating-rate assets and longer-term liabilities or stable CASA. Suitable revisions should also be made in product pricing and FTP strategies.

The same logic holds for the April 2016 BIS guidelines (RBI 2023 standards) as well. This document advises banks to capture EVE losses from regulatory nonparallel yield curve shifts. For such losses, it is easy to work out the implicit duration gap limits. Hence, asset-liability duration gap can be used as a strategic tool to design optimal bank portfolios. In fact, we can go one step further and stipulate duration gap limits under normal and stressed conditions. The rate shock scenarios for the April 2016 guidelines were based on interest rate data between January 2000 and December 2015 (BIS, 2023b). However, interest rates were either low or on the decline, during much of this phase, for a number of reasons. Hence, such a sample may not capture spikes in interest rates during stressed periods. It should be extended till December 2023 (to capture the rate hike phase since late 2021) and divided into two subsets: normal and stressed. The shocks from the former should be used to compute EVE losses under Pillar I, while the latter can be employed to estimate additional Pillar II IRRBB capital charges. This suggestion is in the spirit of June 2015 Basel guidelines which not only proposed Pillar I capital charges, but also an enhanced Pillar II treatment for IRRBB. The final BIS guidelines, on rate shock calibration, do stretch the sample to December 2023 (BIS, 2024).

The fixation and monitoring of duration gap limits, after inclusion of IRRBB under Pillar I, becomes more important as the easy money regime drags on. Recent research suggests that the longer market rates remain depressed, the higher the risk of financial crisis after a sudden rate hike (Jimenez et al., 2023). We have seen the global impact of a rate hike after a two-decade lull. It follows that duration gaps should be more stringent, not relaxed, if the low-rate regime is protracted. Banks should avoid short-term profit opportunities and reduce their positive duration gaps, in a countercyclical manner, even when interest rates continue to decline. A fall in asset duration and rise in liability duration will immunize them against both interest rate and liquidity risks, with a sudden spike in policy and market rates.

After the collapse of SVB, there has been a demand for mandatory disclosure of Duration

Gap statements (Golding and Lucas, 2024). Unlike Structural Liquidity Statements, duration gap statements need not be disclosed, in bank annual reports, under the Basel accords. While such a proposal is welcome, mere disclosure is not enough. For instance, the implicit duration gaps at SVB can be calculated from the data on EVE erosion (in Table 9.1). But, it did not try to restrict bigger duration gaps between 2019 and 2021, because there were no associated capital charges. Banks will be serious about Duration Gap management only when they are hit with Pillar I capital charges for IRRBB.

9.5. Introduction of ILAAP

The Internal Liquidity Adequacy Assessment Process (ILAAP) is part of Pillar 2 in the Basel II Accord, dedicated to the supervisory review process. It comprises a clear assessment of the risks to liquidity, supported by well-structured risk governance and risk escalation systems. The objective of the ILAAP is to identify, analyse and wherever possible, quantify the liquidity risks faced by a bank or FI. The exercise enables the firm to reduce stakeholder uncertainty about its continuity with a combination of high-quality liquidity buffers, stable funds, liquidity risk limits and control systems (BOE, 2019). It is vital for regulators to implement ILAAP worldwide.

Since SVB was exempted from Basel III liquidity standards, the natural presumption is that compliance with LCR could have saved the bank. Such a conjecture may not be correct, because SVB had faced a 'black swan' event, a hundred-year flood as it were. Almost 85% of its deposits (i.e., around USD 140 billion) was withdrawn in two days. For comparison, the maximum drawdown on non-financial corporate deposits, as per LCR guidelines, is 40% over a 30-day horizon. Research has shown that the severe outflow at SVB is a zero-probability event – it would need 200% LCR to stave off the bank run (Russo, 2023). Instead, it could have introduced ILAAP to fortify its liquidity risk management systems over the years. Its liability profile would have been more balanced, it would have more liquid assets in the trading book rather than HTM portfolio for ease of encashment and its liquidity deficit estimates, for short-term buckets, would have been more conservative, in anticipation of stress scenarios.

ILAAP was carved out of ICAAP in the US and Europe, in the wake of the global financial crisis. However, it is at a nascent stage in most countries. Its widespread usage will allow a bank to derive the following benefits:

1. Describe the roles and responsibilities of the firm hierarchy, in liquidity risk management: Often the division of labour, among the various committees involved with liquidity risk management is not clear. For instance, it is not always evident from the ALM Policy who fixes liquidity risk limits and who authorizes the breaches.
2. Create a liquidity adequacy statement, which contains the drivers and threats to liquidity buffers, ILAAP parameters, inputs, outputs and business strategies: Interest rates, equity prices, exchange rates and the ratings on loans and bonds often determine the demand and supply of bank-specific and systemic liquidity. The bank may use these factors as early warning signals, under normal and stressed conditions, to assess whether it has enough cash or near-cash assets.
3. Assess material risks, project internal liquidity needs and compare with available buffers: Liquidity risk may arise for a variety of reasons – sudden default by borrowers, sharp fall in value of bonds or drawdown on credit lines. The ILAAP must explore their likelihood, severity and interactions, in normal and stressed markets. The consequent liquidity requirements should be compatible with the available and planned stock of HQLA.
4. Forecast business growth, conduct stress tests, formulate liquidity plans and strategies to raise it: ILAAP is a Pillar II requirement which considers changes in macroeconomic scenarios and portfolio size and composition. Stress tests should include increase in HQLA haircuts and deposit run-off factors based on Monte Carlo simulation or Extreme Value Theory, to

capture unprecedented shocks. The resultant Contingency Funding Plans (CFPs) should be executed based on bank-specific and systemic triggers while liquidity conditions are comfortable enough for the institution. SVB failed to implement its CFPs because it tried to raise liquidity during a crisis. Since CFPs are futuristic, a bank should be farsighted enough to raise liquidity while it can, not when it must.

5. Revise limits, pricing decisions and liquidity allocation to optimize risk-adjusted performance: With the introduction of more stringent liquidity risk limits, long-term loans should become more expensive while stable CASA and term deposits should be preferred by banks. The cost of a liquidity buffer like LCR, in terms of foregone yields, should also be loaded on other products like term loans. As a result of ILAAP, the optimal portfolio composition and NIM may change.

9.6. Funds Transfer Pricing (FTP) Methods

FTP is a management accounting technique used to calculate the true net interest income component of business units, products, and market segments. FTP helps build the income statement by calculating the cost of funding assets and the credit for funds provided as deposits. A good FTP system helps the treasury to:

1. Divide the total NII into different components attributable to various units so that the contribution from business lines to bank level margins is taken into account.
2. Transfer liquidity and interest rate risks to the ALM unit to make the performance of business lines (e.g., branches) independent of risks that are beyond their control.
3. Define economic benchmarks for pricing and performance measurement.
4. Drive pricing policies of the business units in line with market prices.
5. Provide incentives or penalties to trigger expected performance from business units to align them with commercial policy.

In short, in an environment of high volatility in interest rates and bank liquidity, maturity or reset mismatches (leading to interest rate and liquidity risks) can be dangerous for banks. The rates on loans and deposits should respond to these mismatches by making customers choose those products which the bank wants them to. However, in the process, a business unit (e.g. branch) which does not control these risks (or determine the bank's appetite for them) should not be penalized.

FTP Methods

Single Pool: The FTP rate used for pricing all balance sheet items is a single rate. The same pool is used for funding the assets and rewarding the sources. The rate represents the portfolio yield at which each asset is funded and each liability is invested. While it enables the computation of NII at any level, it does not remove IRR from business lines. Once the FTP rate is frozen, to protect business units from interest rate risk, branches have an incentive to make longest tenor loans and take shortest tenor deposits to maximize their own profits. This method is still prevalent in many British banks (BOE, 2019).

Split Pool: More than one pool is used, typically one for assets and the other for liabilities. The total cost of funds is used as the funding rate for assets and the total yield on earning assets as the sourcing rate for deposits. The disadvantage of not being able to remove IRR from any business line remains as before. At present, most Indian banks follow the split pool method.

Matched Maturity FTP (MMFTP): In this method, a yield curve is used instead of pools. The yield curve is based on the maturity or reset dates of assets and liabilities. For instance, an interest paying fixed-rate 3-year term deposit would be credited with a 3-year rate from the yield curve chosen on the date of opening of the deposit and the transfer rate would stay with the account till its maturity. However, a 5-year floating-rate term loan with 3-month reset would be given a 3-month rate on the date of disbursement of the loan. This rate would be revised on the basis of FTP rates prevailing on each reset date.

Floating rate products also carry funding liquidity risk. For instance, while a one-year loan is funded at the appropriate one-year FTP rate, a 20-year loan which resets every year should be charged a higher FTP rate, because it blocks liquidity over a much longer horizon. It should attract a liquidity charge, over and above the one-year FTP rate. Likewise, a deposit that is renewed should receive a liquidity credit, because it is a stable source of funds. This is known as Liquidity Transfer Pricing. Various techniques for computation of liquidity charges and credits are described in Grant (2011)[2].

The FTP method chosen by a bank should be in line with the complexity of its portfolio and its skill levels. However, at a minimum, every bank should implement the MMFTP approach at the earliest possible. This will not only align branch objectives with the goals of the head office, but also help measure the risk-adjusted performance of business units.

9.7. Conclusion

The SVB meltdown shows how liability concentration – in no-cost bulk deposits – and asset concentration – in long-term bonds – can aggravate ALM mismatches and trigger systemic risk. In the last decade, the Indian financial sector has also witnessed similar problems at several banks and NBFCs due to asset-liability mismanagement[3]. The implementation of the regulatory reforms, proposed in this chapter, should redress the benign neglect of the global financial community towards interest risk and liquidity risk management.

George Santayana, the famous 19th century Spanish philosopher, wrote, 'Those who cannot remember the past are condemned to repeat it.' We must heed the grim lessons from the long history of financial crises, replete with tales of repetitive blunders, for short-term profitability and business growth. Bankers and regulators should be vigilant during booms to escape unscathed during crashes. That is the essence of financial risk management.

2. The bank may face competitive pressure in pricing of corporate as well as retail (housing and educational) loans. Agricultural loans may carry regulatory caps. Hence, it may not always be possible to charge appropriate FTP and credit spreads. We are thankful to R. Shashikala for this important point.

3. We are thankful to Tasneem Chherawala for this point.

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10

Role of Deposit Insurance in Indian Banking

Current Status and the Way Ahead

Partha Ray[1]

10.1. Introduction

Deposit insurance has a long history in India. India was the second country to introduce deposit insurance in 1962, the first being the US which introduced it in 1933. In fact, the genesis of deposit insurance in India can be traced in the failure of Laxmi Bank and the Palai Central Bank in early 1960s. The Deposit Insurance Corporation (DIC) Bill was introduced in the Parliament on August 21, 1961 and the Deposit Insurance Corporation (DIC) commenced functioning on January 1, 1962.

Around the same time, the Government of India introduced a Credit Guarantee Scheme in July 1960. After a gap of ten years, the Reserve Bank of India promoted a public limited company on January 14, 1971, named the Credit Guarantee Corporation of India Ltd (CGCI). Later, the above two organizations (DIC and CGCI) were merged and the present Deposit Insurance and Credit Guarantee Corporation (DICGC) came into existence on July 15, 1978. Consequently, the title of Deposit Insurance Act, 1961 was changed to 'The Deposit Insurance and Credit Guarantee Corporation Act, 1961'.

With the financial sector reforms initiated in the 1990s, credit guarantees have been gradually phased out and the focus of the DICGC came back to its core function of Deposit Insurance with twin objectives of depositors' protection and ensuring financial stability. In fact, the credit guarantee function was discontinued in April 2003 and deposit insurance became and remains the principal function of the DICGC (Patra, 2024).

While DICGC paying close to ₹16,000 crore involving over 400 urban co-operative banks and recent amendments (Section 18A) requiring DICGC to make time-bound repayment to depositors of AID banks has made operations challenging, perhaps, significant public ownership of banks has made the functioning of deposit insurance comparatively less demanding insofar as commercial banks are concerned. Nevertheless, like any other live institution, the functioning of the DICGC and deposit insurance in India had undergone a Darwinian evolutionary process over the years.[2]

Against this backdrop this chapter looks into the trends, status, and way ahead of deposit insurance in India. This chapter is organized as follows. The next two sections are devoted to theoretical rationale and global trends of deposit insurance. Sections 10.4 and 10.5 discuss the genesis and evolution of deposit insurance in India and its recent trends. Instead of presenting any concluding observations, Section 10.6 speculates on the shape of things to come in resolution of bank distress and deposit insurance.

1. The chapter reflects personal views of the author and does not reflect the views of the DICGC or its Board. The author is indebted to Anup Kumar, B V Chaubal and Rupa Rege Nisure for their comments on an earlier draft of this chapter. The usual disclaimer applies.

2. See Raravikar, Joarder and Kumar (2024) for a discussion on the evolution of deposit insurance in India.

10.2. Role of Deposit Insurance: What Do We Know from the Theory?

To begin with, it may be appropriate to start with a relevant digression on the theory of deposit insurance. The fact that banks are fragile and are prone to depositor runs is well-known. Moreover, by virtue of their capability of issuing deposit contracts and high capability of leveraging, banks are distinctly different from real sector firms. After all, it is almost impossible to describe the production technology of a bank in terms of a traditional production function relating inputs to output.

Initial theoretical research on bank runs comes prominently from the works of two Nobel laureate economists, Douglas Diamond and Philip Dybvig. Diamond and Dybvig (1983) demonstrated that with an uncertain future, bank run could emerge as a rational Nash equilibrium. In the Diamond-Dybvig (1983) model, investors face privately observed risks leading to a demand for liquidity. In fact, it has been shown that the Diamond-Dybvig model has three basic elements: (a) long-term investments that are more productive than short-term investments; (b) a random need for liquidity on the part of an individual; and (c) private information about an individual's need for liquidity.

In such a set-up, traditional demand deposit contracts that are capable of providing liquidity, could lead to multiple equilibria. Interestingly, one such an equilibrium is a bank run, that is capable of causing real economic damage. Diamond and Dybvig indicated several mechanisms for eliminating the bank-run equilibrium. These include deposit insurance, suspension mechanisms, and central bank lending. Specifically, their analysis further shows that there are circumstances when government provision of deposit insurance can produce superior contracts. However, such provision of deposit insurance does involve the unwarranted outcome of moral hazard. Thus, Calomiris and Jaremski (2016) aptly commented:

> Government-provided deposit insurance eliminates liquidity risk in this model. Depositors' payoffs from early withdrawal are now independent of what other depositors do, and this removes the incentive for depositors to run on the bank in anticipation of one another's doing so. In the Diamond-Dybvig model, not only does deposit insurance remove all liquidity risk, it does so costlessly (p. 4).

Contemporary theories on deposit insurance are couched in terms of a design of a multiparty principal-agent problem with the following counterparties, viz., banks, depositors, supervisors, politicians, and taxpayers. Technically, "Events that generate losses for insured institutions obligate taxpayers to supply risk capital only when weaknesses in supervisory efforts at loss control allow an institution's losses to surpass the value of its stockholder contributed net worth" (Demirgüç-Kunt and Kane, 2001). Thus, for reducing the chances of future taxpayer losses, risk-based capital standards have been imposed all over the world.

What does deposit insurance do? Its mandate often goes beyond plain vanilla deposit insurance. The US Federal Deposit Insurance Corporation (FDIC) mentions in its preamble:

> FDIC … is an independent agency created by the Congress to maintain stability and public confidence in the nation's financial system. The FDIC insures deposits; examines and supervises financial institutions for safety, soundness, and consumer protection; makes large and complex financial institutions resolvable; and manages receiverships.[3]

Specifically, deposits are automatically insured to at least $250,000 at each FDIC-insured bank.

The solution to the problem of bank runs, in terms of deposit insurance, in the Diamond-Dybvig (1983) model has been criticized in subsequent literature. Illustratively, Jacklin and Bhattacharya (1988) demonstrated that under the optimal contract in Diamond-Dybvig model, banks could issue long-term or equity claims to fund their investments without any cost, "provided so long as depositors who need to consume early are able to sell their claims on the bank in a secondary market to fund their early consumption". Hence the necessity of

3. See https://www.fdic.gov/ (accessed on 4 October 2024).

deposit insurance is ruled out under such a setting.

Since deposit contracts could be subject to the twin problem of moral hazard and adverse selection, the theoretical literature seeks to probe into the question whether government deposit insurance can avoid these problems. To sum up,

> Deposit insurance can increase moral hazard and make financial systems more vulnerable to crises during good times, but it can also enhance depositor confidence and reduce the likelihood of bank runs during crises. The net effect of deposit insurance on bank risk and stability depends on whether the benefits of deposit insurance outweigh its costs (World Bank, 2020).

10.3. Global Trends

Deposit insurance has a chequered history in the advanced countries. While the first formal system of deposit insurance in the US was established in 1829, in the State of New York, to guarantee both banknotes and deposits, by the end of the 1800s, all of the deposit insurance schemes had disappeared (McCarthy, 1980). Later, in view of large numbers of bank runs and associated banking panics, a nationwide deposit insurance scheme was passed in the US in 1933. In fact, Friedman and Schwartz (1963) have claimed that "federal insurance of bank deposits was the most important structural change in the banking system to result from the 1933 panic, and, indeed in our view, the structural change most conducive to monetary policy since . . . immediately after the Civil War."

Over the years, the deposit insurance has evolved in different countries in different ways. International Association of Deposit Insurers (IADI) does an annual survey covering different countries in the world. Table 10.1 reports the nature of deposit insurance in select advanced countries in 2022 as revealed from this survey.[4]

A number of interesting traits come out from the survey. First, in some countries, there are options of multiple insurance. Illustratively, Germany has three types of deposit insurance, viz., (a) Statutory Deposit Guarantee System of German Cooperative Banks; (b) Institutional Protection Scheme of the National Association of German Cooperative Banks (BVR); and (c) Deposit Protection Fund of German Banks - Association of German Banks. The US too has two types of deposit insurance, viz., (a) Federal Deposit Insurance Corporation; and (b) National Credit Union Administration. Second, there is no optimal worldwide blueprint for deposit insurance. For example, account coverage tends to vary from unlimited guarantees to tight coverage limits. Third, most schemes exclude interbank deposits. Fourth, in some countries there are provisions for account holders to "coinsure" a proportion of their deposit balances. Fifth, there are two types of frameworks that tend to govern the bankruptcy of banks, viz., (a) Bankruptcy/Insolvency law; and (b) Special resolution regime.

In the recent past, deposit insurance came into focus during the global financial crisis. Looking into the effect of deposit insurance on banks' standalone and systemic risk before and after the global financial crisis, Anginer, Demirgüç-Kunt, and Zhu (2014) found that more generous deposit insurance schemes tend to increase bank risk and reduce systemic stability in non-crisis years. In particular, the overall effect of deposit insurance over the full sample remains negative "because the destabilizing effect during normal times is greater in magnitude than the stabilizing effect during global turbulence".[5]

Narrating the post-global financial crisis experience, Iyer and Puri (2008) found that deposit insurance was only partially effective in preventing bank runs. More importantly, while depositors who are over the deposit insurance limit are more likely to run, even if accounts below the deposit insurance limit are considered, they found that account balance positively influences the likelihood of a withdrawal.

4. We have taken select countries. The original Survey covers nearly 100 countries.

5. The study sample consists of "4,109 publicly traded banks in 96 countries, and the study period includes the crisis years 2007–09 and the three years, 2004–06, leading up to the crisis." (Anginer, Demirgüç-Kunt, and Zhu, 2014)

TABLE 10.1

Nature of Deposit Insurance in Select Advanced Countries 2022 Annual Survey (as of year-end 2021): Select Features

	Jurisdiction	*Canada*	*France*	*Germany (1)*	*Germany (2)*	*Germany (3)*	*Germany (4)*	*Japan (1)*	*Japan (2)*	*United States (1)*	*United States (2)*	*India*
	Name of Deposit Insurer	*Canada Deposit Insurance Corporation*	*Fonds de Garantie des Dépôts et de Résolution (FGDR)*	*Statutory Deposit Guarantee System of German Cooperative Banks*	*Institutional Protection Scheme of the National Association of German Cooperative Banks (BVR)*	*Deposit Protection Fund of German Banks - Association of German Banks*	*Compensation Scheme of German Banks*	*Deposit Insurance Corporation of Japan (DICJ)*	*Agricultural and Fishery Cooperatives Savings Insurance Corporation*	*Federal Deposit Insurance Corporation*	*National Credit Union Administration*	*Deposit Insurance and Credit Guarantee Corporation*
1	Year of introduction	1967	1980/1999	2015	1934	1976	1998	1971	1973	1933	1970	1962
2	Type of Deposit Insurance System (DIS)											
2(i)	Government legislated and administered	1	0	0	0	0	0	0	0	1	1	1
2(ii)	Government legislated and administered by Central Bank	0	0	0	0	0	0	0	0	0	0	0
2(iii)	Government legislated and privately administered	0	1	0	0	0	1	1	1	0	0	0
2(iv)	Privately established and administered	0	0	1	1	1	0	0	0	0	0	0
3	Number of deposit-taking institutions insured by DIA	85	0	776	777	124	180	540	674	4848	4942	2040

contd...

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	Jurisdiction	*Canada*	*France*	*Germany (1)*	*Germany (2)*	*Germany (3)*	*Germany (4)*	*Japan (1)*	*Japan (2)*	*United States (1)*	*United States (2)*	*India*
	Name of Deposit Insurer	*Canada Deposit Insurance Corporation*	*Fonds de Garantie des Dépôts et de Résolution (FGDR)*	*Statutory Deposit Guarantee System of German Cooperative Banks*	*Institutional Protection Scheme of the National Association of German Cooperative Banks (BVR)*	*Deposit Protection Fund of German Banks - Association of German Banks*	*Compensation Scheme of German Banks*	*Deposit Insurance Corporation of Japan (DICJ)*	*Agricultural and Fishery Cooperatives Savings Insurance Corporation*	*Federal Deposit Insurance Corporation*	*National Credit Union Administration*	*Deposit Insurance and Credit Guarantee Corporation*
4	Types of deposit products eligible for coverage by DIA											
4(i)	Savings account	1	1	0	0	1	1	1	1	1	1	1
4(ii)	Checking account	1	1	0	0	1	1	1	1	1	1	1
4(iii)	Annuity contracts	0	0	0	0	1	1	0	0	0	0	0
4(iv)	Certificates of deposit	1	0	0	0	0	0	0	0	1	1	1
4(v)	Guaranteed investment certificate	1	0	0	0	0	0	0	0	0	0	0
4(vi)	Travelers cheques	0	0	0	0	0	0	0	0	1	0	0
4(vii)	Money orders	1	0	0	0	0	0	0	0	1	0	0
4(viii)	Certified drafts of cheques	1	1	0	0	0	0	0	0	1	1	0
4(ix)	Foreign currency deposits	1	1	0	0	1	1	0	0	1	0	1
4(x)	Inter-bank deposits	0	0	0	0	0	0	0	0	1	1	0
4(xi)	Government deposits	0	0	0	0	0	0	1	1	1	1	0

contd...

...contd...

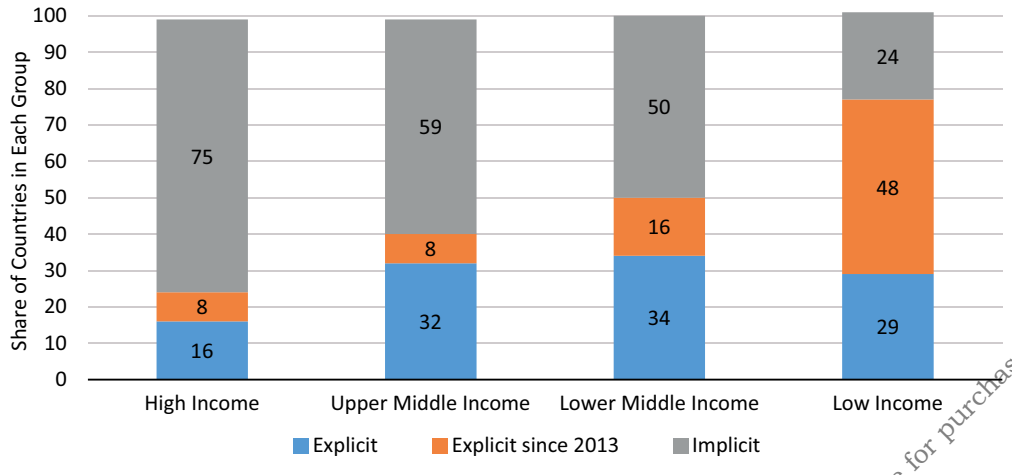
	Jurisdiction	*Canada*	*France*	*Germany (1)*	*Germany (2)*	*Germany (3)*	*Germany (4)*	*Japan (1)*	*Japan (2)*	*United States (1)*	*United States (2)*	*India*
	Name of Deposit Insurer	*Canada Deposit Insurance Corporation*	*Fonds de Garantie des Dépôts et de Résolution (FGDR)*	*Statutory Deposit Guarantee System of German Cooperative Banks*	*Institutional Protection Scheme of the National Association of German Cooperative Banks (BVR)*	*Deposit Protection Fund of German Banks - Association of German Banks*	*Compensation Scheme of German Banks*	*Deposit Insurance Corporation of Japan (DICJ)*	*Agricultural and Fishery Cooperatives Savings Insurance Corporation*	*Federal Deposit Insurance Corporation*	*National Credit Union Administration*	*Deposit Insurance and Credit Guarantee Corporation*
5	Maximum coverage limit											
5(i)	Per depositor per institution (local currency)		100,000	100,000		750,000	100,000	10,000,000	10,000,000		250,000	500,000
5(ii)	Per depositor per institution (USD)		113,714	113,714		852,854	113,714	86,878	86,878		250,000	6,710
5(iii)	Other limits (local currency)	100,000			0							
5(iv)	Other limits (USD)	79,120			0							
6	Resolution framework governed by											
6(i)	Bankruptcy/ Insolvency law	1	0	0	0	1	1	1	1	0	0	1
6(ii)	Special resolution regime	1	1	1	1	1	1	1	1	1	1	0

Note: 1 and 0 indicate presence and absence of the relevant attribute.

Source: Deposit Insurance Surveys, 2022, International Association of Despoil Insurers, available at https://www.iadi.org/en/research/data-warehouse/deposit-insurance-surveys/ (accessed on 4 October 2024).

FIGURE 10.1

Expansion of Deposit Insurance since the Global Financial Crisis: by Country Income Group



Source: World Bank (2020).

A World Bank study found that during the global financial crisis, a number of countries introduced new deposit insurance or extended the scope and coverage of existing schemes of deposit insurance (World Bank, 2020) (Figure 10.1). Illustratively, countries like Australia and Singapore introduced explicit deposit insurance schemes for the first time, while the United States and Spain, substantially increased the limit on deposits covered by deposit insurance. Interestingly, faced with a financial crisis, a blanket guarantee for most liabilities of its banks was introduced in Ireland. The increased coverage amounted to about 200% of Ireland's GDP.

10.4. Genesis and Evolution of Deposit Insurance in India

While the idea of deposit insurance first cropped up in India in the late 1940s in the context of the banking crisis in Bengal, and again in the early 1950s, the Deposit Insurance Corporation, and the consequent insurance of bank deposits, came into existence in 1962. As already indicated, its birth can be traced to the crash of the Palai Central Bank (Balachandran, 1998).[6] While the commercial banks were brought under the jurisdiction of the deposit insurance, co-operative banks were brought under its jurisdiction much later in 1968.

As far as the purview of deposit insurance is concerned, all commercial banks (including branches of foreign banks functioning in India, local area banks and regional rural banks) as well as all co-operative banks are covered by the DICGC. Primary co-operative societies are, however, not insured by the DICGC. While the DICGC insures all deposits (e.g., savings, fixed, current, recurring, and other type of deposits), some of the deposits that are excluded from its purview are: (a) deposits of foreign Governments; (b) deposits of Central/State Governments; (c) Inter-bank deposits; (d) any amount due on account of and deposit received outside India.

In recent times, there has been significant expansion of deposit insurance. Two announcements in the recent Union Budgets deserve special mention.

6. When the Deposit Insurance Corporation came into existence, all 293 banks which were then in existence were registered as insured banks; of these 219 banks were unlicensed, twenty-one of whom, accounting for a total deposit liability of ₹67 crores, had faced some erosion of their deposits.

First, in her Budget Speech for the Union Budget 2020-21, honourable Finance Minister announced, "...The Deposit Insurance and Credit Guarantee Corporation (DICGC) has been permitted to increase Deposit Insurance Coverage for a depositor, which is now ₹ one lakh to ₹ five lakh per depositor."

Second, next year, in her Budget Speech for the Union Budget 2021-22 on February 1, 2021, honourable Finance Minister announced,

> Last year, Government had approved an increase in the Deposit Insurance cover from ₹1 lakh to ₹5 lakhs for bank customers. I shall be moving amendments to the DICGC Act, 1961 in this Session itself to streamline the provisions, so that if a bank is temporarily unable to fulfil its obligations, the depositors of such a bank can get easy and time-bound access to their deposits to the extent of the deposit insurance cover. This would help depositors of banks that are currently under stress (GoI, 2021, p. 16).

Consequently, the Deposit Insurance and Credit Guarantee Corporation (Amendment) Bill, 2021 was introduced in the Parliament on July 30, 2021. The salient features of the Bill were as follows:

- Amendment of Section 15: The DICGC was enabled to raise the ceiling on the amount of premium with previous approval of the Reserve Bank of India.
- Insertion of a new Section 18A: The DICGC was enabled to make interim time-bound payment to depositors in those banks for whom any direction or prohibition or order or scheme under any of the provisions of the Banking Regulation Act, 1949 has been issued and on whom restrictions were imposed on depositors in the banks from accessing their deposits.
- Amendment of Section 21: Two new subsections (3) and (4) were inserted so as to provide that the DICGC may defer or vary the receipt of repayments due to it from the insured bank and to empower the Corporation to charge penal interest in case of delay in repayment by the banks to DICGC.

Insofar as deposit insurance is concerned, the following major changes took place in recent times.

First, as already indicated, the limit of insurance cover for depositors in insured banks was raised from the earlier level of ₹1 lakh to ₹5 lakh per depositor. Accordingly, the number of fully protected accounts at end-March 2022 constituted nearly 98% of the total number of accounts. In terms of amount, the total insured deposits at end-March 2022 constituted 49% of assessable deposits. It is important to note that these numbers are higher than the guidance of International Association for Deposit Insurance (IADI), recommending coverage of number of accounts up to 80% and 20% to 30% in value terms (Patra, 2022).[7] The deposit insurance cover of ₹5 lakh is applicable uniformly to all insured banks and their depositors, and is payable to any depositor in respect of deposits held by him/her in the same right and same capacity at all the branches of an insured bank taken together, in case of liquidation/failure of a bank. Effectively, the balances in all these accounts are aggregated and insurance cover is available up to ₹ five lakhs in maximum.[8] Thus, over the years, the limits of deposit insurance have undergone substantial revision (Table 10.2).

Second, these amendments to the Act enabled depositors to get easy and time-bound access to their deposits to the extent of deposit insurance cover through interim payments by DICGC, in cases of imposition of restrictions on banks under the Banking Regulation Act, 1949 such as when banks are placed under 'All Inclusive Directions' (AID) by RBI. In such cases, DICGC

7. As per core principle of effective deposit insurance, cover should be limited, credible, cover a vast majority of deposits, and be subject to market discipline. The cover given by DICGC is in sync with this principle.

8. RBI Deputy Governor, Michael D Patra mentioned, "The hike in deposit insurance cover to ₹5 lakh with effect from February 4, 2020 from the earlier level of ₹1 lakh after a gap of 27 years is a major achievement. As a result, about half the total assessable deposits of the banking system are insured, up from only 29 per cent when the insurance cover was ₹1 lakh. 98 per cent of all accounts in the banking system are fully protected with deposit insurance. These ratios far exceed the global norms of 20-30 per cent of assessable deposits and 80 per cent of accounts" (Patra, 2022).

is liable to make interim payments to depositors up to the deposit insurance cover of ₹5 lakh within 90 days of imposition of such directions. The time-bound payment to depositors of banks placed under AID has paved the way for improving public confidence in the banking system and has also helped in strengthening financial stability.

TABLE 10.2

Deposit Insurance Limit in India

Effective from	*Insurance Limit (₹)*
January 1, 1962	1,500
January 1, 1968	5,000
April 1, 1970	10,000
January 1, 1976	20,000
July 1, 1980	30,000
May 1, 1993	1,00,000
February 4, 2020	5,00,000

Source: Raravikar, Joarder and Kumar, 2024.

10.5 Trends in Deposit Insurance in India

In order to understand trends in deposit insurance in India, it is important to recognize that on account of prevalence of government ownership of a number of banks, there is an implicit /perceived sovereign guarantee on a large part of Indian banking system. Even insofar as the private banks are concerned, instead of allowing bank runs to take place, the preferred mode of resolution in India has always been some sort of guided mergers. Illustratively, when a new private sector bank, Global Trust Bank, faced bankruptcy-like situation in 2004 on account of its erosion of net worth, instead of allowing any run on the bank, it was merged with Oriental Bank of Commerce, a public sector bank.

In recent history, five cases of amalgamations can be flagged: (i) the Benares State Bank (BSB) amalgamated with Bank of Baroda on 19 June 2002; (ii) Nedungadi Bank amalgamated with Punjab National Bank on 1 February 2003; (iii) Global Trust Bank merged with Oriental Bank of Commerce on 14 August 2004; (iv) Ganesh Bank of Kurundwad amalgamated with the Federal Bank Limited on 2 September 2006; and (v) United Western Bank amalgamated with Industrial Development Bank of India (IDBI) on 3 October 2006 (Bose, 2018). Only one commercial bank has faced liquidation—the Bank of Karad in 1992. Voluntary amalgamation also played a crucial role in case of a number of other banks.

This apart, Government of India has injected substantial capital in public sector banks whenever these banks faced some difficulty in terms of accumulation of non-performing assets. Illustratively, the Central Government infused ₹3.1 trillion to recapitalize public sector banks during the five-year period i.e., from 2016-17 to 2020-21; out of this ₹349 billion were sourced through budgetary allocations and about ₹2.8 trillion through issuance of recapitalization bonds to these banks[9]. Besides, there were write-offs of bad debt.

Effectively, thus, Indian deposit insurance system did not face the challenges that any quasi *laissez faire* banking system would have faced. Notwithstanding this implicit protection of government guarantees arising out of government ownership, there has been significant developments in deposit protection cover. In terms of stylized facts, following trends deserve special mention.

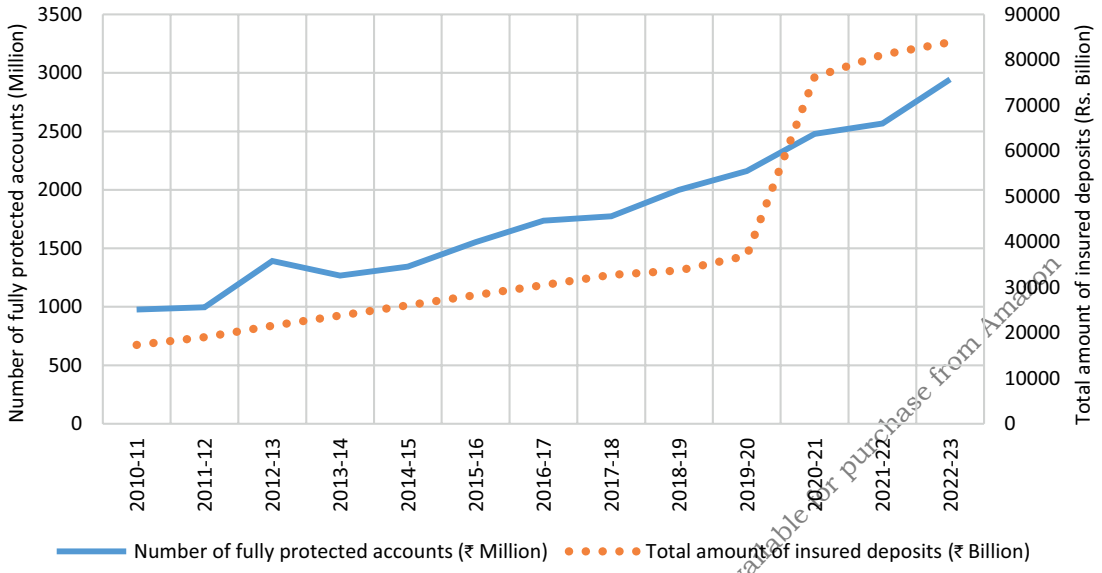
First, there has been significant increase in coverage of deposit insurance. In absolute terms, number of accounts fully protected stood at 2.8 billion in 2023-24 (Figure 10.2; DICGC, 2024). In terms of percentage to total also, the numbers are impressive and had experienced a spurt since 2020-21 (Figure 10.3).

Second, insofar as insurance premiums are concerned, the minimum premium that banks pay to the DICGC is increased from 10 paise to 12–15 paise per ₹100. This is reflected in the

9. In case of recapitalisation bonds, government's capital infusion goes to the banks in the form of equity capital as government increases its share of equity holding, thereby shoring up banks' capital reserves. The money invested by banks in recapitalisation bonds is, thus, classified as an investment which earns them an interest. It is, thus, fiscal neutral.

FIGURE 10.2

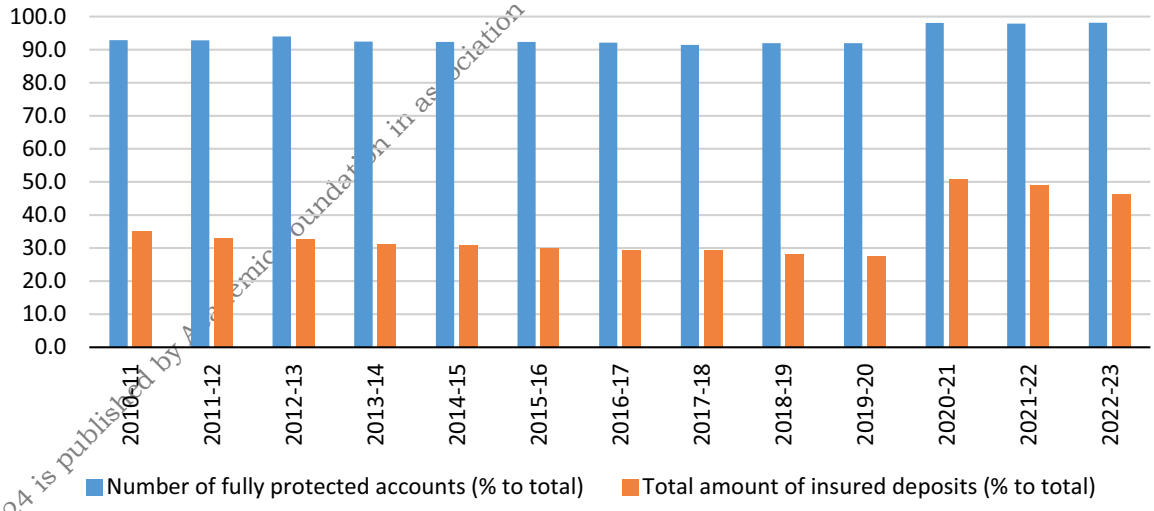
Trends in Number of Fully Protected Accounts and Amount of Insured Deposits



Source: Handbook on Indian Economy, RBI, 2024.

FIGURE 10.3

Trends in Coverage of Deposit Insurance in India (% of Total)



Source: Handbook on Indian Economy, RBI, 2024.

sharp increase in the amount of deposit insurance received by DICGC from banks (Table 10.3).

On a cumulative basis, as of March 31, 2023, against an amount received of ₹4,114 crore, claims worth of ₹10,928 crore were settled – an amount of ₹64 crore was written off (Table 10.4).[10]

10. Since 22 February 1994, credit institutions have been delegated powers to take decisions in matters like change/release of security/surety, waiver of legal action, compromise and scaling down of dues and write-off and they are not required to obtain the DICGC's prior approval. The proposals involving staff accountability, frauds, misappropriation etc., have, however, to be referred to the DICGC for its prior approval.

TABLE 10.3

DICGC Insurance Premium Received

	DICGC - Insurance Premium Received (₹ Billion)			*Aggregate Deposits (₹ Billion)*	*Insurance Premium as % of Aggregate Deposits*
	Commercial Banks	*Co-operative Banks*	*All Banks*		
2000-01	4.5	0.7	5.2	11,000.4	0.047
2001-02	5.6	0.8	6.4	12,547.1	0.051
2002-03	6.2	0.8	7.1	14,431.4	0.049
2003-04	6.8	0.9	7.7	16,855.9	0.046
2004-05	12.1	1.4	13.6	18,828.9	0.072
2005-06	17.8	1.9	19.7	23,005.3	0.086
2006-07	21.2	2.1	23.2	28,197.2	0.082
2007-08	26.2	2.2	28.4	34,404.2	0.083
2008-09	31.7	2.9	34.5	41,237.9	0.084
2009-10	38.6	3.0	41.6	48,314.0	0.086
2010-11	44.9	3.6	48.4	55,886.3	0.087
2011-12	52.6	3.8	56.4	63,583.4	0.089
2012-13	53.0	4.2	57.2	72,455.2	0.079
2013-14	68.0	5.1	73.1	82,696.0	0.088
2014-15	76.5	5.8	82.3	91,494.0	0.090
2015-16	85.5	6.5	92.0	100,049.1	0.092
2016-17	93.9	7.3	101.2	115,067.2	0.088
2017-18	103.5	7.8	111.3	121,789.7	0.091
2018-19	111.9	8.5	120.4	133,481.2	0.090
2019-20	123.1	9.2	132.3	144,117.1	0.092
2020-21	163.4	11.8	175.2	160,454.0	0.109
2021-22	182.5	12.4	194.9	173,996.0	0.112
2022-23	201.0	12.8	213.8	189,895.6	0.113

Source: Deposit Insurance and Credit Guarantee Corporation.

Clearly co-operative banks dominated, in terms of claims settled, accounting for more than 95% of the amount settled. The incidence of failure and resolution of distress in commercial banks are, however, much less on account of reasons discussed earlier. Illustratively, a major achievement of the DICGC was "the financial assistance of ₹3,791 crore it provided to Unity Small Finance Bank for making payments to depositors of the much-sensationalised Punjab and Maharashtra Cooperative Bank Ltd or PMC Bank" (Patra, 2022).

10.6. In Lieu of Conclusions: Way Ahead

Despite the protected stature of commercial banking, deposit insurance has worked well in India, particularly for the co-operative banking sector where the need of resolution was present. Going forward, how does one perceive the future of deposit insurance in India? Without being exhaustive we raise a few issues.[11]

Aligning with the Core Principles

The International Association of Deposit Insurers (IADI) Core Principles for Effective Deposit Insurance Systems (CP, henceforth) were originally published in 2009. Subsequently, in 2014, in response to lessons learnt from the

11. Patra (2022) discusses a number of other issues, such as, (a) targeting the reserve ratio through enabling legislation or through Board resolutions; (b) period of settlement; and (c) information security requirements.

TABLE 10.4

DICGC - Insurance Claims Settled and Repayment Received - Cumulative Basis
(Amount in ₹ Crore)

March 31 of	*Bank Groups*	*No. of Banks*	*Claims Settled*	*Repayment Received*	*Written-off*
2014	Commercial Banks	27	296	149	32
	Co-operative Banks	323	4,312	1,063	1
	All Banks	350	4,608	1,212	33
2015	Commercial Banks	27	296	149	32
	Co-operative Banks	328	4,633	1,210	1
	All Banks	355	4,929	1,359	33
2016	Commercial Banks	27	296	149	32
	Co-operative Banks	332	4,680	1,827	1
	All Banks	359	4,976	1,976	33
2017	Commercial Banks	27	296	149	32
	Co-operative Banks	336	4,739	2,017	1
	All Banks	363	5,035	2,166	33
2018	Commercial Banks	27	296	149	32
	Co-operative Banks	345	4,782	2,515	1
	All Banks	372	5,078	2,664	33
2019	Commercial Banks	27	296	151	32
	Co-operative Banks	351	4,822	2,607	1
	All Banks	378	5,118	2,758	33
2020	Commercial Banks	27	296	151	32
	Co-operative Banks	357	4,903	2,715	1
	All Banks	384	5,199	2,867	33
2021	Commercial Banks	27	296	153	63
	Co-operative Banks	365	5,467	3,282	1
	All Banks	392	5,763	3,435	64
2022	Commercial Banks	27	296	156	63
	Co-operative Banks	374	10,524	3,689	1
	All Banks	401	10,820	3,845	64
2023	Commercial Banks	27	296	158	63
	Co-operative Banks	374	10,632	3,956	2
	All Banks	401	10,928	4,114	65

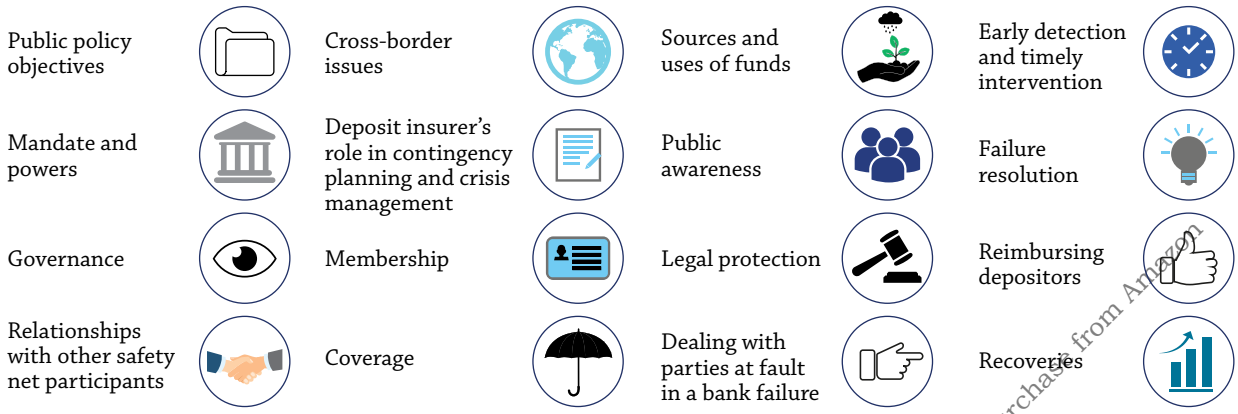
Source: Deposit Insurance and Credit Guarantee Corporation.

global financial crisis, IADI issued the Revised Core Principles for Effective Deposit Insurance Systems. Apart from strengthening deposit insurance standards, the revised CPs ensured consistency with Key Attributes of Effective Resolution Regimes for Financial Institutions of the Financial Stability Board (FSB) (Figure 10.4). The Indian system and DICGC need to align themselves with these revised core principles. As Patra (2022) has mentioned it categorically,

> The DICGC needs to be completely aligned with the IADI's 16 core principles that define global standards today. This may require some substantive legislative changes... Currently, there are gaps in this desired alignment which your own internal assessment has revealed.

FIGURE 10.4

Core Principles for Effective Deposit Insurance Systems



Source: BIS (available at https://www.bis.org/fsi/fsisummaries/iadi_core_principles.htm, accessed on 4 October 2024.)

What If Commercial Banking in India Were More Fragile?

We have already argued that the commercial banks in India are extremely stable and that this stability emanates *inter alia* from the public ownership and the preferred resolution mechanism of the authorities. What happens if such protection covers of public ownership or the preferred resolution via the mergers and acquisition route were withdrawn? While such counterfactuals are difficult to conceptualize, we have, at least, a possible framework to think though, viz., (a) the proposal of the Committee to Draft the Code on the Resolution of Financial Firms (2016) to set up a "Financial Resolution and Deposit Insurance Corporation" (FRDIC), to resolve financial firms; and (b) the draft Financial Resolution and Deposit Insurance Bill, 2017 (FRDI Bill). While the FDRI Bill attempted to consolidate India's existing scattered regulatory framework on bank resolution, later this bill was abandoned on account of various larger considerations. It is important to note that the FRDL Bill, 2017 was introduced in the Lok Sabha on August 10, 2017 and aimed to address the issue of insolvency of financial firms. The Bill proposed to establish a Resolution Corporation and a comprehensive resolution regime to enable timely and orderly resolution of a failing financial firm.[12] It was referred to the Joint Committee of Parliament for examination and report. The bill was withdrawn in August 2018 due to a controversial provision that was considered to be of concern for the safety of depositors. Later the Central Government clarified that the Government has not taken any decision to reintroduce the FRDI Bill.[13]

In fact, the Report of the Working Group on Resolution Regime for Financial Institutions (RBI, 2014) mentioned categorically:

> Resolution of a failed financial institution is a complex process that requires specialised skills and expertise. Prevention of contagion and preserving stability will require timely intervention and speedy implementation of resolution tools. The Group concluded that such a function is best implemented by a specialised institution, the Financial Resolution Authority (FRA). The FRA would be responsible for the resolution of all financial institutions, regardless of size or of sector. This FRA should be institutionally independent and an equal player with other

12. See https://dea.gov.in/sites/default/files/FRDI%20Bill%20as%20introduced%20in%20Lok%20Sabha_Eng_0.pdf (accessed on 4 October 2024).

13. https://pib.gov.in/PressReleaseIframePage.aspx?PRID=1641568 (accessed on 4 October 2024).

> safety net agencies. The kind of experience and expertise, even if limited, available with the Deposit Insurance and Credit Guarantee Corporation (DICGC) in dealing with failures of banks could be leveraged. The FRA as a separate entity can be set by either transforming the present DICGC into FRA or by setting up a new authority namely FRA that will subsume DICGC.[14]

As already pointed out, such drastic reform of the deposit insurance system did not take place in India, in absence of the necessary legal reforms and associated welfare implications for average/small depositors.

Usage of Public Fund

Globally, the ongoing deliberations of the UNIDROIT (formerly, the International Institute for the Unification of Private Law) Working Group on Bank Insolvency is aiming at developing an international soft law instrument covering the key features of bank liquidation proceedings. This Guide is scheduled to be adopted by 2024. Once adopted, this will address gaps in the international legal architecture on bank insolvency, especially vis-a-vis small and medium-sized banks. UNIDROIT in its September 2021 report mentioned,

> In the absence of efficient insolvency options to deal with small and medium-sized banks, there is a risk that governments return to public 'bailouts' with the associated moral hazard, while the use of public funds is what policy makers intended to avoid following the recent financial crisis. This risk might in turn increase market fragmentation, since jurisdictions might react differently depending on their domestic laws, political considerations, and fiscal positions.[15]

As and when such guidance is made available, hopefully the contours of deposit insurance globally is going to be influenced by it.

How do we see the future of deposit insurance (DI)? Major challenges will emanate from concerns of environmental, social, and governance (ESG) policies. We can do no better than to turn to a recent speech by RBI Deputy Governor Michael Patra, who said:

> Looking ahead, the evolution of the deposit insurance function is likely to confront more complex challenges amidst heightened uncertainty. For instance, climate change is emerging as an overarching risk to the global economy and financial systems. According to the IADI's surveys, 60 per cent of DIs have formalised ...ESG policies and some are members of the Network for Greening the Financial System (NGFS). This is what is keeping us awake in India – framing a comprehensive ESG policy incorporating elements of climate sustainability, investment in sovereign green bonds, measuring the impact of climate change on default risk and contingency planning for climate related extreme events via actuarial analysis (Patra, 2024).

To conclude, globally, the state of deposit insurance is still in the process of being and becoming. In the ultimate analysis, when it comes to deposit insurance, there is a trade-off between financial stability, moral hazard, and efficiency of public policy. Such trade-offs could only be settled in the larger context of political economy. Going by the policy indications, it seems that India is prepared to withstand the onslaught of a Schumpeterian process of creative destruction. But those issues are beyond the scope of the present chapter.

14. The FSLRC has recommended the creation of a resolution fund by the resolution corporation, funded through premium from covered service providers that would be proportional to their financial position, for the purpose of resolution-related expenses including administrative expenses, payment of compensations to creditors, etc; see Government of India (2013).

15. See https://www.unidroit.org/english/governments/councildocuments/2021session/cd-100-b/cd-100-b-04-e.pdf (accessed on 4 October 2024).

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11

Monetary Penalties on Banks

Perspectives Towards Evolving a Scale-Based Approach

Anjan Roy[1]

11.1. Introduction

In November 2023, various news reports informed that the Reserve Bank of India (RBI) would undertake a comprehensive review of its framework for penalties on regulated entities, leading to a scale-based approach to enforcement of regulatory provisions. It was highlighted that the size of the penalties levied on banks were small and may need to be rationalized. Additionally, clawback for payments made to key management personnel, as well as independent directors and shareholder' s directors on the board, and imposition of additional capital charge for regulated entities were also proposed. Earlier in January 2020, the regulator had announced the framework for imposing monetary penalty on authorised payment system operators and banks under the Payment and Settlement Systems Act, 2007, which superseded the extant framework announced in October 2016.

Between the years 2018-19 and 2022-23, the RBI imposed penalties on 549 occasions for a total amount of ₹2630.7 million. In the year 2018-19, RBI had imposed penalties on 36 banks for a total amount of ₹710 million only for non-compliance with various directions issued on time-bound implementation and strengthening of SWIFT-related operational controls. In 2022-23, while the number of instances of penalties increased significantly, the total amount penalties was only ₹403.9 million. Table 11.1 presents the incidences of penalties and the total amounts imposed by the banking regulator in India[2]. Das (2023) has provided detailed data and incisive analysis on penalties imposed by the RBI on Indian commercial banks.

TABLE 11.1

Trends of Imposition of Penalties by the RBI

Year	*Number of Instances of Penalties*	*Total Amount (₹ Million)*
2018-19	36	710.0
2019-20	52	550.0
2020-21	61	313.6
2021-22	189	653.2
2022-23	211	403.9

Source: Report on Trend and Progress of Banking in India, RBI, various issues.

The above table indicates that monetary penalties imposed upon Indian banks and financial institutions seem to involve small amounts, which is also reducing over the years on per instance basis. In comparison, enforcement actions in other countries may carry much higher imposition of financial fines. As per the Annual Financial Fines Analysis published in the Fenergo Report (2022), monetary penalties totalled to USD 6.6 billion in 2023, preceded by USD 4.2 billion, USD 5.4 billion, USD 10.4

1. The author would like to thank Deepak Narang and Bazil Shaikh for their very helpful comments and suggestions. All errors in the chapter are, however, solely the responsibility of the author.

2. Report on Trend and Progress of Banking in India, RBI, 2022-23, 2021-22, 2020-21, 2019-20.

billion and USD 10.0 billion in the four previous years (Bleach, 2024). In January 2024, the Bank of England fined HSBC with GBP 57.4 million for inadequacies in its measures relating to protection of customer deposits (BBC News, 2024). In March 2024, the Federal Reserve fined JPMorgan Chase an amount of USD 348.2 million for inadequacies in monitoring of firm and client trading activities for market misconduct (Bohannon, 2024).

The sizing of the financial penalties to deter bad behaviour of banks is indeed a matter to be given serious consideration. There is much public opinion that penalties on banks are so trivial that banks may find it in their financial interest to repeatedly violate the law (Knowledge at Wharton, 2015) or may be able to arrive at settlement agreement with the regulator to discount the amount under penalty (Watts, 2017). Banks are special entities that provide invaluable public goods for functioning of the economy, particularly deposits, loans, liquidity and transaction services. Therefore, while undertaking enforcement actions, regulators face the challenge for calibrating them appropriately, keeping in mind that the intended objectives are met without imposing overbearing conditions that impair the competitiveness and ability of banks to function well.

This study aims at developing some potential leads towards developing the perspective on sizing and application of monetary penalties by banking regulators. In this regard, it is hypothesized that the amount of monetary penalties imposed on banks has relationship with operational risk capital of banks. To test this, data of monetary penalties for a ten-year period between 2011-12 to 2022-23, of 14 new and old generation private banks in India have been analysed. Section 11.2 discusses the regulatory enforcement actions of banks, their objectives and challenges, and achievement of intended outcomes. Section 11.3 describes the recent events in the evolution of monetary penalties by the banking regulator in India. Section 11.4 reports the observed impacts of the penalties on operational risk capital of banks. Section 11.5 concludes with suggestions.

11.2. Regulatory Enforcement Actions on Banks

Bank regulators elicit good behaviour from the regulated entities through various administrative actions such as instructions to cease and desist from certain operations, enhance the weights and capital levels of risk exposures or imposition of monetary penalties. These actions of regulators could be by way of issuing enforcement orders, corrections or control (Asser, 2001). Enforcement actions are taken ex-ante to prevent any imminent or potential failures before the occurrence of a major adverse event. Regulatory penalties are examples of such actions which impinge upon banks' loss of reputation risk (Armour et al., 2017). Corrective actions are interventions taken ex-post for repairing any damage caused by bank misbehaviour leading to return back to regulatory health. An example of such action is the prompt corrective action (PCA) imposed following any serious decline in structural parameters and performance of banks. Control actions could lead to replacement of management and placement of the bank under a custodial entity or receivership.

Regulators need to ensure that their actions conform to the principle of proportionality keeping in view the nature of non-compliance, the likelihood of occurrence (and re-occurrence) and the severity of the impact. Accordingly, some may attempt to arrive at the sense of proportionality by applying a few basic principles, which are as follows:

(i) Penalties imposed must be benchmarked to assessment of gains or benefits made, or the cost avoided by the banks, or the risk posed to the stakeholders and the financial sector, by violating the rules.

(ii) If the gains or benefits made, or the cost avoided cannot be quantified, then the penalty amount will be based on the seriousness of the violations based on the nature of the violation, whether the same was wilful and deliberate, and whether there are likely to be mitigating or aggravating factors.

(iii) While each incident of breach of rule are to be treated as standalone violation, any

past breach remaining undetected may be subject to penalties as and when they are detected.

In the U.S., the Federal Deposit Insurance Corporation (FDIC) applies a matrix comprising 13 assessment factors to determine the amount of civil monetary penalties on banks depending upon the level or tier of violation (Tavares, 2024). These factors include "violations" which refer to any violation of law, rule, regulation, order, condition imposed in writing, or written agreement, and any reckless, unsafe or unsound practice or breach of fiduciary duty, and "mitigations" which refer to remedial or corrective action, restitution, etc.

Thus, regulatory interventions attempt to enforce internalization of the external costs caused by banks due to their misconduct (Gotz and Troger, 2017). Koster and Pelster (2018) show that financial penalties increase banks' systemic risk exposure, the link being weaker in regulatory and supervisory systems with more prompt corrective power, and stronger where supervisory authorities' have stronger power to declare insolvency. They observe that penalties must be set at a specific amount that offsets the damages of misconduct but does not threaten systemic stability. Similarly, Broz and Kocenda (2022) too found that bank penalties lead to an increase in systemic risk over the long term.

Enforcement actions and penalties may not impact a bank's financial performance, such as its short-term profitability, in a significant way (Zeidan, 2012). Koster and Pelster (2017) observed that financial penalties have a negative relation with pre-tax profitability of banks but have no relation with after-tax profitability. However, over the long term they detect a decline in income as a result of damaged reputation. Financial penalties are found to have a large impact on Euro Area bank's expected equity returns (Busetto, Gardo and Klaus, 2019). While Koster and Pelster (2017) found positive abnormal returns upon the announcement of financial penalty on banks, Gowin et al. (2021) show that a civil money penalty impose on banks adversely affects their value in the very next quarter. Mayer, Polo and Armour (2017) argue that fines and penalties are only a small component of the sanctions available with the regulators. Reputational sanctions have far more impact than direct penalties. Overall, Gotz and Troger (2017) found that banks become safer once regulators intervene. In a recent study by Ke, Xu, and He (2024) on Chinese commercial banks reveal that regulatory penalties significantly reduce bank risk taking, and has an effect on improving corporate governance and market discipline.

Further, Koster and Pelster (2018) have commented that penalties against institutions may be complemented by financial penalties against upper management to induce a more responsible culture in banks. On the latter finding, Jing and Yaqin (2023) also observe that penalties work better when these are imposed both on the institution as well as the persons involved.

11.3. Monetary Penalties Imposed on Banks in India

The RBI has moved from its earlier stance of depending on 'moral suasion' (Ghosh, 2024) by pointing out the irregularities to banks, to the imposition of monetary penalties signifying financial consequences. It imposes penalties based on powers vested under six Acts – the Reserve Bank of India Act, 1934; the Banking Regulation Act, 1949; Securitisation and Reconstruction of Financial Assets and Enforcement of Security Interest Act, 2002; Credit Information Companies (Regulation) Act, 2005; Payment and Settlement Systems Act, 2007; and Factoring Regulation Act, 2011. Besides, the regulator also has powers to penalize other regulated entities such as Non-Bank Finance Companies (NBFC) and cooperative banks under provisions of other Acts.

In April 2017, the Enforcement Department was set up at the RBI[3] in order to focus upon enforcement action as separate from regulation and supervision functions, and thereby speed up regulatory compliance by commercial banks. The approach of the new department would be to follow a structured rule-based framework for enforcement based on prevalence and severity of violations. In following, a large number

3. See https://pib.gov.in/newsite/PrintRelease.aspx?relid=168581 (accessed on 3 October 2024).

of penal actions were taken upon banks over the last few years. The key areas of regulatory violations that have emerged relate to know-your-customer (KYC) norms, fraud reporting and classification, loans to directors and relatives, information exchange with banks, non-adherence with customer service standards, loan restructuring and anti-money laundering. These are detected through various statutory audits and inspection reports, risk assessment reports, scrutiny reports, customer complaints, etc.

Monetary penalties have been set up for various violations such as charge on counterfeit notes in currency chests and remittances, cash-out of ATMs for more than ten hours in a month, etc. The regulator has revised the framework for imposing monetary penalty on authorised payment system operators and banks under the Payment and Settlement Systems Act, 2007, whereby the maximum amount of penalty for a single contravention has been set at ₹0.5 million or double the measurable amount of contravention, whichever is higher. For contraventions that are not measurable, the maximum amount of penalty was limited to ₹0.5 million. The amount of penalty to be imposed were to be determined on a case-by-case basis by using a matrix, which has parameters for undue gain or loss, impact on customers, intent and mitigating factors, leading to an overall weighted score. The method also addresses cases of repeat contraventions and impact on viability of the bank.

As mentioned, the data in Table 11.1 indicates that the amounts involved in penalties seem to be quite little, which may be due to the fact that the highest number of penalties imposed have been upon cooperative banks, which are mostly small in size. Apart from the information that the average amount of penalty imposed per instance of regulatory violation have been more for private sector banks than banks of other categories, there is lack of granular data on the actual violations and sizes of penalties. A rough compilation of data of various instances of penalties imposed on banks indicate that:

(i) Banks may be prone to multiple and repeated violations for certain types of regulatory compliances on operational matters.

(ii) There is high variance in the amount of penalty imposed on individual instance of violations, which may reflect the differences in their nature and impact.

(iii) There is also high variance in the total amount of penalty for similar types of non-compliance over different years, which may reflect the number of violations.

(iv) Banks having record of higher number of incidents may face higher level of penalties.

Besides the monetary penalties, the regulator has also begun to take strong non-monetary actions against banks by requiring the stepping down of incumbents from leadership positions and takeover of management of banks with serious governance issues.

11.4 Impact of Regulatory Penalties on Operational Risk Capital

Banks are expected to maintain a level of operational risk capital, which under Basel II has been defined as 'the risk of loss from inadequate or failed internal processes, people and systems, or from external events', which include seven event types such as internal frauds; external frauds; clients, products and business practices; employment practices and work safety; damage to physical assets; business disruptions and system failures; and execution delivery and process management. The amount of operational risk capital to be maintained is guided by the regulator in following certain approaches prescribed by the Basel Accord, such as the Basic Indicator (BI), The Standardized Approach (TSA), Advanced Management Approach (AMA) and New Standardized Approach (NSA). These approaches signify an increasing level of sophistication with regards to calculation of risk capital from a top-down approach on the basis of the gross income of a bank to a bottoms-up approach involving internal data of the frequency and amount of losses for various risk events in a bank. According to

some recent studies (Frame et al., 2020; Berger et al., 2022), risk events relating to (i) clients, products and business practices, and execution, and (ii) delivery and process management contribute the most to the incidence of operational risk.

The definition of operational risk also includes legal risks, which may happen through regulatory compliance violations, breach of contract, antitrust, market manipulation and unfair trade practices, etc. The concept of legal risk under Basel II explicitly includes fines, penalties and punitive damages, which are a result of regulatory actions. Banks that violate rules or chooses to not comply with regulations, seek to gain by avoiding any additional operating cost. These may lead to accumulation of malpractice, which in time become embossed as organizational culture and later manifest as operational risk event.

A study by Hill (2012) informs that bank regulators may require individual banks to maintain more capital than required by regulation if the latter are found to be operating in an unsound manner. If this be true then banks having higher level of violations and thus facing more number and amount of penalties may also face higher level of risk capital, particularly for operational risk, which is defined as the risk of failure of people, processes and external conditions. It is however unclear as to how the regulators view the relatedness of its different enforcement actions, such as issuance of warnings or directions, imposition of penalties, etc., upon capital charge imposition. In practice, imposition of monetary penalty on banks by the regulator may be randomly occurring and independent of the bank's decision of maintaining the level of operational risk capital, which could be based on their adopted Basel approach. If these actions, both being monetary in nature, are positively related (higher monetary penalties lead to higher capital requirements) then they may lead to similar but alternative responses by banks in terms of eliciting actions for mitigation of such risks.

Two sets of hypotheses are therefore developed. The first hypothesis is that imposition of monetary penalty for operational risk related events is related and leading to higher level of operational risk capital in banks. The second is that banks assign higher capital for operational risk in response to penalties. Accordingly, two models with dependent variables as (i) operational risk capital and (ii) change in operational risk capital have been tested with several independent variables as determining factors.

Table 11.2 describes the variables in the model, their measures and the descriptive statistics of the data. The hypothesis has been tested with data from fourteen new and old generation private sector banks in India (HDFC Bank, ICICI Bank, Axis Bank, Kotak Mahindra Bank, IndusInd Bank, RBL Bank, Yes Bank, Federal Bank, Karnataka Bank, CSB Bank, CUB bank, Tamilnad Mercantile Bank, South Indian Bank and Karur Vysya Bank). These banks have been selected as together their category constitute the highest amount of penalties imposed by the regulator for any given year. The data related to operational risk capital have been obtained from the Basel Pillar III disclosures made annually by the banks for the period between and including the years 2011-12 and 2022-23. The data on penalties imposed by the banking regulator have been obtained from the section on corporate governance found in the annual reports of the banks for the same period. The dataset comprises 153 instances of penalties with a total amount of ₹3298 billion. While the average amount of penalty imposed for any violation is ₹8.02 million, the highest imposition has been of ₹589 million for a violation in a new generation private bank in the year 2017-18.

Table 11.3 provides the results of random effect multiple regressions conducted to test the hypothesis, after the Hausman Test result indicated that the difference in coefficients were not systematic. The results of the first model are found to be significant at 1% level and suggest that the amount of operational risk capital (ORC in log value) in banks may be related to the number of regulatory penalties imposed on them, of the same year of imposition (RPEN) as well as those imposed one year earlier ($RPEN_{-1}$). The direction of the relationship lend support to the hypothesis that the effect of higher number of penalties would be to raise the level of operational risk capital. However, the second

TABLE 11.2

Model Variables and Descriptive Statistics

S. No	*Variable*	*Measure*	*μ*	σ
1	ORC	Amount of operational risk capital (₹ billion)	21.55	34.49
2	CORC	Amount of change in operational risk capital (₹ billion)	3.38	5.80
3	RPEN	Number of penalties imposed in the current year	1.25	1.64
4	RPEN-1	Number of penalties imposed in the previous year	1.09	1.55
5	TPEN	Amount of penalty imposed in a year (₹ million)	14.27	54.89

Source: Author's estimation.

model, with yearly change in operational risk capital (CORC in log value) as dependent variable, with significance at 10% level does not have any statistical implication for such effect due to the independent variables. Banks may not be assigning additional amount of operating risk capital in response to incidents of imposition of monetary penalties.

TABLE 11.3

Effect of Regulatory Penalties on Operational Risk Capital

Parameter	*ORC*		*CORC*	
	Coef-ficient	*T Stat*	*Coef-ficient*	*T Stat*
Constant	3.775***	18.82	2.992***	19.19
RPEN	0.042**	3.15	0.023	1.54
RPEN-1	0.038**	2.77	0.019	1.18
TPEN	0.000	1.26	0.000	1.40
R2 (within)	0.146		0.049	
Wald chi2	22.71		6.64	
Significance	0.000		0.10	
N	153		145	

Note: *** p<0.000; ** p<0.01

Source: Author's estimation.

In both models, the impact of the total amount of monetary penalty per year (TPEN) upon the level or change in level of operating risk capital is also found to be low and not significant. This suggest that the money value of the penalties being smaller may not be adequate by itself to bring about any significant change in level of operational risk capital. The reported values of operational risk capital being derived by the banks from the basic indicator approach is based on the gross income and hence the size of banks, and may not provide a direct link between amount of penalties and possible increase in capital charge. As these banks move towards other higher approaches using internal loss data from the incidents of regulatory violations, such effect may become more noticeable.

In following, therefore, there may be the need to have a strategy to increase the impact of penalties by determining the amount in a more nuanced manner. The regulator can formulate a matrix for determining the amount of monetary penalty for a regulated entity, which could be based on risk factors, such as frequency of violation and likely impact on stakeholders due to their (i)) intent and history of violation, (ii) duration of violation, (iii) undue gain or risk of loss, (iv) loss or harm to consumers, (v) effectiveness of internal control programmes, (vi) size and financial health, and (vii) co-operation and remedial action taken. The matrix may categorize violations as minor, moderate and serious with certain multipliers to scale up the amount of penalty.

Such action may align the size of the penalty with the seriousness of violation and lead to the desired impact of being fair, effective and leading to compliance. Particularly, if the penalties could be imposed as additional operational risk capital, the announcement and quantum could make the severity of violations more transparent and be a cause for substantial financial and reputation risk for the entity.

11.5. Conclusions

According to the Fitch Ratings, regulatory fines were the dominant theme in news reports of

the year 2022 centred on corporate-governance failings by banks around the world (Fitch Wire, 2022). The significance of public disclosure of fines and loss of reputation risk involved can be high with the effect of forcing banks to conduct their business in a more compliant manner. In India, the banking regulator has undertaken actions to ensure better enforcement of rules by imposing monetary penalties on regulatory violations. This study shows that the imposition of penalties itself may have effect on the amount of operational risk capital with banks, which may create suitable deterrence for regulatory non-compliance, though the impact on additional amount capital charge may not be clear. As banks begin to adopt operational risk charge models using internal loss data, effect of the amount of penalties levied may become more discernible. Besides, the regulator has been active in taking other non-monetary enforcement actions such as stoppage of specific line of business operations, removal of incumbent leaders, induced takeovers, etc., whose disclosure may have had a greater effect on bank behaviour.

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III
Technology and Digitalization in Banking

12

Digital Lending in India

Opportunities and Challenges

Alka Vaidya[1]

12.1. Introduction

Of late, digital lending has started creating headlines for both good and bad reasons. Digital lending platforms have revolutionised the lending landscape by offering convenient, fast and easily accessible loan products which traditional banks were not able to offer. This is particularly notable among the underserved population in Tier 2, 3 and 4 cities, consumers in lower income segments and millennials and Gen-Z customers who belong to 'new-to-credit' category. With the optimistic outlook, this sector has also attracted significant funding from domestic and international investors giving rise to many start-ups and fintech (a portmanteau of financial technology) firms who have become an important part of the ecosystem.

However, the field has also given rise to several risks to consumers as well as to various entities which are part of the system. Illustratively, on October 28, 2023 the Reserve Bank of India (RBI) Governor reportedly expressed his concern about backdoor entry of unregulated players to the financial sector via the digital route. So, what are the threats in the current digital lending practices? Are there adequate regulatory practices in place? How Indian banks are lending digitally and who are the important players of the ecosystem? With changing regulations, what kind of compliance related requirements lenders will have to fulfil? This chapter probes into some of these important questions surrounding overall digital lending process.

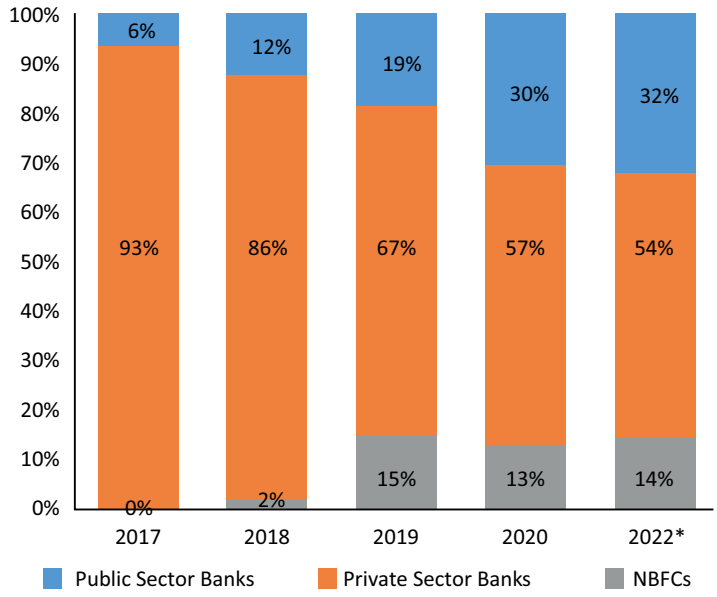
The structure of the chapter is as follows. Section 12.2 explains the terminology associated with the digital lending business. Section 12.3 discusses the different varieties of digital lending practices. Section 12.4 addresses the evolution of digital lending in India. Section 12.5 introduces the important players in the market. Section 12.6 focuses on bank participation in digital lending activities. Section 12.7 highlights the risks and challenges in this domain. Section 12.8 covers the recent regulatory developments. Section 12.9 concludes.

12.2. Semantics of Digital Lending in India

Digital lending is defined by the RBI as, "A remote and automated lending process, largely by use of seamless digital technologies for customer acquisition, credit assessment, loan approval, disbursement, recovery, and associated customer service". Essentially, in digital lending, the objective of Financial Service Provider (FSP) is to deliver customer-centric experience by leveraging digital data of prospective borrowers and to enhance operational efficiency with reduced turnaround time. To enhance customer experience, FSPs usually provide self-service loan application (app), near-instantaneous loan approval and digital disbursal. Such loans are largely unsecured,

1. The author wishes to thank Sunil Bakshi and Prashant Mane for their valuable comments and suggestions. The usual disclaimer applies.

FIGURE 12.1
Share of Banks and NBFCs*



Source: *EY Report, September 2023 (EY, 2023).

small-valued, short-term loans to low/middle income group customers and small borrowers. They are typically disbursed through mobile or web-based digital lending apps (DLAs) such as consumer durable loans, scan and pay, Buy Now Pay Later (BNPL), and others.

Digital lending has evolved over last few years in various forms along with the rapid rise in fintechs who are developing innovative business models and digital platforms that directly connect lenders to borrowers. Banks and Non-Banking Financial Corporations (NBFCs) on their own and in partnership with fintechs are increasingly adding to their loan books by lending digitally. As per the report by Centre for Advanced Financial Research and Learning (CAFRAL, 2023), NBFCs had 60.53% share of digital lending to overall lending as opposed to 5.53% for the banks in FY 2020. In the overall ecosystem, share of NBFCs has been steadily increasing over last few years, as can be seen from Figure 12.1.

12.3. Types of Digital Lending

Personal Loans: The most common type of digital lending is instant personal loans to salaried or self-employed individuals which are being offered by app-based consumer lending platforms promoted by fintechs. Few platforms (e.g., mPokket.in) also provide loans ranging from INR 500 to INR 30000 to college students. In small ticket loans category (less than INR 1 lakh), fintechs have consistently grown in loan volumes and values. As per Experian report (Experian, 2024), this segment contributes 77% by volume (number of loans) and 51% by amount.

Embedded Finance: In this, lending or any other financial service is directly integrated into non-financial app or service such as e-commerce platform or social media. Instead of closing the running app, today, customers prefer the lending service within the same app or platform. E-commerce giants like Amazon are offering solutions such as 'Buy Now Pay Later' or EdTech industry is giving students an option of 'Study Now Pay Later'. Many travel, health or delivery apps are integrating insurance products within their app making insurance accessible to masses. The biggest advantage of such products is that the app provider is able to leverage existing touch points and digital footprints of customers to offer more personalised experience to them and also, there is no separate cost related to customer acquisition.

Gold Loans: Many financial institutions have started providing an online gold loan service using which one can obtain a loan against his/her gold holdings. Such a holding can also be borrower's digital gold (or e-gold which is an online alternative to physical gold). A few banks like Punjab National Bank are offering gold loans to meet customer's agricultural credit requirements against the pledge of gold jewellery/ornaments. However, few fintech firms such as Indiagold along with their banking partners are offering loans up to INR 60000 against digital gold. The main difference is, in case of digital gold loan, there are no making charges and hence the loan value will be higher for the same initial investment.

Micro, Small, and Medium Enterprises (MSME) Loans: MSME sector contributed 29.7% of GDP and 45.03% of Indian Exports in FY-22. (GOI Ministry MSME, 2023). Despite their significant contribution, MSMEs in India face difficulties in fulfilling their liquidity and

working capital requirements. Traditional supply-chain financing, though aims to fulfil the MSME's financing gaps, is a cumbersome process with a lot of paperwork. The emergence of fintechs and their digital supply-chain financing solutions play a promising role ensuring seamless flow of funds within the supply chain ecosystem. With extensive use of data analytics and app-based financing arrangements, fintechs have digitised all interactions among the concerned entities and revolutionised supply-chain-financing segment. MSME business loans up to a certain limit (a few lakh) are unsecured and many of the schemes are running on a 'co-lending' model. Leading public/private banks in India have implemented their proprietary supply-chain-finance platforms jointly with fintech and NBFC partners. Banks give out higher amounts of funds compared to NBFCs, but NBFCs have a wider digital reach through their fintech partners. This symbiotic arrangement has resulted into improved turnaround time of loan disbursal with customer-friendly apps and given rise to automated and paperless processes.

Loans Related to Credit Cards: A few lending platforms are offering facilities such as Credit-Card-as-a-Service to offer products that are contextual to customer needs. While credit cards are not new, with innovating offerings on credit cards, they are becoming a tool for financial access and unsecured loans. It is to be noted here that EMI programmes on credit cards do not fall under digital lending guidelines of RBI. However, other loan products offered on credit cards are governed by the terms laid down under digital lending guidelines. The guidelines also apply to all loans offered on debit cards, including EMI programmes.

12.4 Growth and Penetration of Digital Lending in India

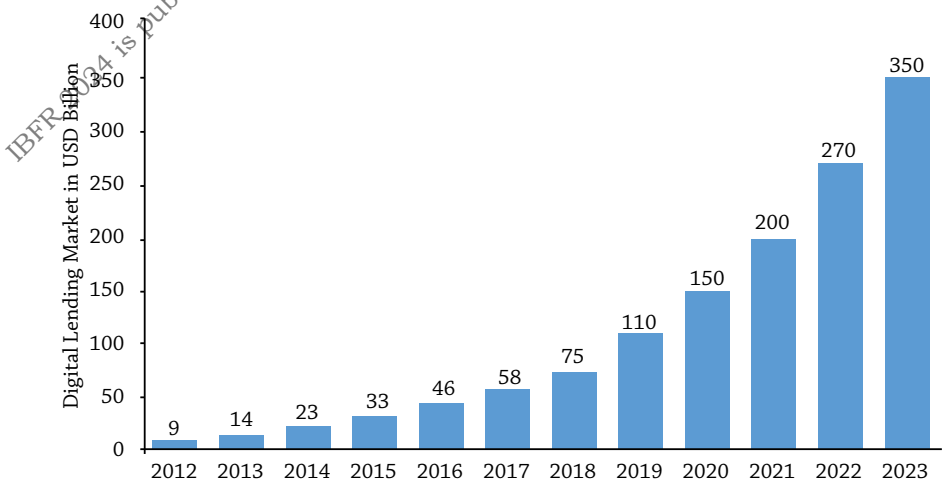
India has witnessed the growth of digital lending market due to quick, easy and efficient processes which do not depend on the prospective borrower's credit history. For such 'credit invisible' customers, the process makes use of their alternative credit data which includes applicant's online payment history, online shopping behaviour, utility payments, GST details, etc. Fintechs are harnessing the power of Artificial Intelligence/Machine Learning algorithms to analyse these data sets which help them automate the credit underwriting process and significantly reduce the time needed for loan approvals as compared to traditional techniques of the same.

The following two figures give a sense of the quantum leap the digital lending markets have seen, and the growth observed in small ticket loans (size < INR 1 lakh).

Key Enablers behind India's Digital Lending Growth

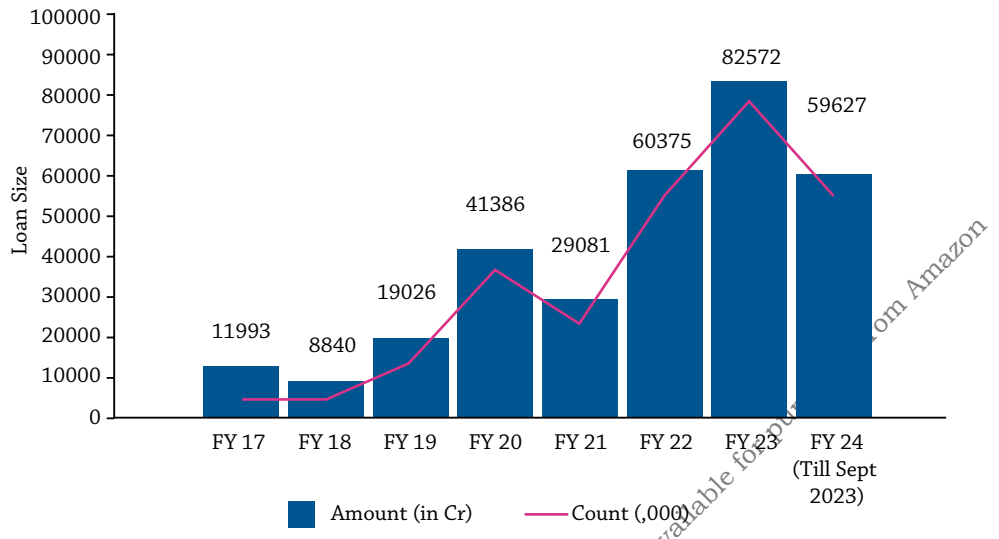
But why did India witness the spurt in digital lending? Multiple factors such as Government

FIGURE 12.2
Value of Digital Lending Market in USD Billion (with 2023 Estimate)*



Source: *Statista

FIGURE 12.3
Growth of Small-ticket Loans (INR < 1 lakh)**



Source: **Experian, 2024

of India and the regulator's continued promotion of digitization, advancement in machine learning technology, rising internet penetration in India, etc. have contributed to this. The most important milestones of this journey are mentioned below.

India Stack: A Catalyst for 'Digital India'

The Government of India's investment in digital public infrastructure in the form of 'India Stack' accelerated India's digitalisation at several fronts. Today, India Stack is the largest unified software platform in the world to bring India's population into the digital age. The initiatives under India Stack such as Aadhaar, UPI, etc. have spearheaded a new era of innovation by collaborating public and private entities and it has paved the way for digital lending by creating a secure, open and interoperable digital ecosystem. As argued by Alonso et al. (2023) in an IMF working paper, 'While each individual component of the India Stack is important, its key overarching feature is a foundational approach of providing extensive public infrastructures and standards that generates important synergies across the layers of the Stack.'

RBI's Account Aggregator (AA) Framework

For any lender, it is necessary to have financial data of prospective borrowers which is usually fragmented and spread across multiple financial or government institutions. Collecting and sharing of such data is a time-sensitive and expensive process which is also prone to data breaches. To overcome these challenges RBI introduced Account Aggregator framework in September 2021 with the aim of making financial data more accessible through the data intermediaries called Account Aggregator (AA).

With the AA framework, consumers can consolidate their financial information spread across multiple banks, insurers, mutual fund companies, etc. to a connected financial ecosystem. This has helped lenders to have a democratised access to consumer's data thereby enhancing credit assessment process and reducing cost and turnaround time. Streamlined data transfer among the entities also ensures that there is no tampering or fabricating (of bank statements, etc.) reducing the possibility of frauds.

By January 2023, India's AA ecosystem had 1.1 billion accounts and 2.05 million users

were voluntarily sharing their financial data aggregators to avail of better financial services (Menon, 2023). More and more customers joining AA framework has helped expand the credit for underserved segment of customers belonging to low income groups.

Development of Open Credit Enablement Network (OCEN)

Today, less than 11% of MSMEs have access to formal credit and the credit gap of this sector is around INR 20-25 trillion. To overcome this issue and to create a frictionless and inclusive credit landscape the RBI, NPCI (National Payment Corporation of India) and iSpirit (a think tank for the Indian software products industry) collaborated and created an open, standardised platform that connects lenders, borrowers and loan service providers through common APIs (Application Programming Interfaces). The primary goals of the OCEN framework are: i) to democratise small ticket credit market in India, ii) to provide transparent credit scoring system, and iii) to provide a platform to share credit data among lenders and borrowers.

Essentially, OCEN provides a comprehensive API architecture and acts as an open credit enablement network to digitalise the entire lending process. Financial institutions can leverage OCEN and can seamlessly offer loans with a small ticket size and tenure to the MSME sector. The digital infrastructure of OCEN reduces the operational cost making credit affordable. Through digitisation, it also simplifies overall data collection and verification process and also promotes inclusivity making credit accessible.

Adoption of Artificial Intelligence (AI) and Machine Learning (ML) in Lending Process

As mentioned above, customer-centric experience and an efficient loan sanctioning and disbursement process play a key role in increased adoption rates of online lending. One of the key enablers of this is the use of AI-ML and related technologies by the service providers. Right from sanctioning to disbursement and collection, lending platforms are making use of data analytics and machine learning algorithms. For 'new-to-credit' customers who lack credit history, these analytical engines gather digital footprints such as their online transaction data, social media and other behavioural data which help assess their credit worthiness. ML algorithms are trained on datasets to recognise patterns, they can analyse diverse data points such as borrower's online payment behaviour and can help real-time decision making which help lenders streamline their underwriting process. Lending platforms are also using product recommendation engines to suggest the right product based on the customer's requirements. Chatbots and Virtual Assistants powered by Natural Language Processing (NLP) are able to offer quick and personalised help to borrowers.

Today, smaller lenders (including P2P) are also able to integrate the power of AI/ML into their lending process by using cloud-based lending software. Cloud-based loan origination systems can be cost-efficient to smaller lenders who may not have in-house expertise or on-premise hardware/software set-up.

Overall, AI-ML and related technologies have helped lenders in faster loan decision making process, effective loan-underwriting and enhanced efficiency of the entire loan life-cycle.

12.5 Participants in Digital Lending Ecosystem in India

Banks, Non-Banking Financial Companies (NBFCs) and Fintechs

Banks and NBFCs are most obviously the backbone of lending in India. In the digital lending field, banks and NBFCs are collaborating with each other where risks and returns are being shared. While this has allowed banks to reach untapped markets, NBFCs are likely to get access to low-cost funds.

Additionally, such collaborations are also beneficial to supporting fintech-driven lending models by being their lending partners. Fintech companies, with cutting-edge technology are able to provide seamless customer experience, user-friendly interfaces, easy-to-use mobile apps and banks/NBFCs are leveraging on this to tap the underserved markets. Overall, it's a win-win situation for banks/NBFCs and fintechs.

Data Providers

Data providers play a very important role in providing the API layer which facilitates digital lending and other financial services. Data providing companies (e.g., Perfios) are able to give holistic view of the borrower's data which is collated from various sources such as customer interactions, real time market data and customer's transaction histories. The availability of this data help lenders to have better credit underwriting processes and enhances their decision-making capability. Many of these companies also partner with banks in AI-powered digital customer onboarding and document verification process of identity, address, income, etc.

Loan Marketplace

Last few years the phenomenon of marketplace lending has also been on the rise. Typically, such marketplaces follow a practice of pairing borrowers and lenders with the help of an online platform mostly without a traditional bank's intermediation. The earlier term 'peer-to-peer' lending, with the passage of time, is more commonly known as 'marketplace lending' today, where many institutional investors have started investing. In this, a prospective borrower submits an online loan application which is then scrutinised by the company's proprietary credit scoring tool. If found suitable, the loan request is published for the investors for funding. The company would subsequently collect the payments from the borrower, and send it to the investor less their own fees.

Core Lending Platforms, Low-Code/ No-Code

A core lending platform is a platform that can manage the entire lending lifecycle, from origination to underwriting to servicing to collection. Such platforms provide APIs and SDKs (Software Development Kits) to launch various services. SDKs and APIs are effective tools for optimising and developing loan origination and servicing to customers. No-code/low-code technology is steadily becoming popular in digital lending sectors as it offers many benefits to the lenders. This is the intuitive method of designing and developing apps with drag and drop capabilities without writing lengthy code. Additionally, such platforms have libraries of APIs that are able to integrate easily with third party services such identity verification, checking other credit information, or updating customer information, etc. For example, if a new norm is introduced about KYC (Know Your Customer), the lenders simply need to ask their vendors to acquire an API to connect with the source of corresponding information in order to fulfil the compliance. Thus, in a highly competitive market, no-code/low-code is being used to quickly develop and deploy multiple steps in the loan cycle right from data collection, credit scoring to loan approvals and disbursements.

Loan Origination System (LOS) and Loan Management System (LMS)

As the name suggests, LOS solution allows lenders to provide the necessary finances in a quick manner. Such a system is responsible for everything from digital onboarding of customer to seamless disbursement with the help of analytics engines. In a mobile-first economy, LOS provides a frictionless customer onboarding across channels such as websites or SMSes. Built on 'low-code' digital automation platforms, LOS provides scalable digital lending solutions to cater to all kinds of loans including retail and SME loans.

While LOS focuses on enhancing loan buying experience of customers, LMS helps lenders track and monitor borrower's repayments during its contractual term. Usually, an LMS is an end-to-end API-based platform which is integrated with all downstream or upstream banking systems, customer apps or accounting software with built-in reporting analytics capabilities.

Debt Collection and Digital Communication Platforms

Timely collection of debt from the borrowers is a very important aspect of any lending activity. In a digital lending ecosystem, the speed and ease of obtaining digital loans may lead to higher default rates. Additionally, due to ano-

nymity of borrower and online transactions, the recovery process may further get complicated. Given this, several fintechs are pioneering AI-ML based early warning indicators. Predictive analytics models are being deployed by such collection platforms to analyse payment behaviour of the borrower to identify financial distress, if any. Some companies are also joining hands with identity verification services to improve authenticity of borrower's information. A few agencies are working as digital communication platforms and they verify the borrower's identity during video calls using facial recognition technology.

Thus, the Indian debt collection sector is fast embracing AI-ML and analytics-based digital transformation and innovating 'skip tracing' methods to implement more effective collection strategies which would help reduce bad debts in the digital lending sector.

12.6 Bank Participation in Digital Lending

Indian public/private sector banks and NBFCs on their own or along with fintech partners seem to be adding to their loan books through digital lending, especially in retail lending products. However, it is observed that most banks do not publish the exact volumes and values pertaining to this business. The following table documents the extent to which major public and private Indian banks are involved in digital lending activities. While some banks have a lot to offer, a few have started 'co-lending' with NBFCs in the MSME sector. Most of them provide an online loan application process and give an 'in-principle' loan-sanction which is then subjected to further scrutiny.

TABLE 12.1

Digital Lending Offerings by Indian Banks*

No.	*Bank Name*	*Digital Loan Services Offered by the Banks**
1	Bank of Baroda	• Bank's digital lending platform gives 'In Principle' approval for home loan, car loan, personal loan within 30 minutes, in 4 steps. • In the year 2022, the bank launched digital co-lending platform to facilitate NBFC partnerships to strengthen, accelerate and simplify the co-lending process. Subsequently, it partnered with Clix Capital for healthcare equipment financing.
2	Bank of India	• The bank has a facility of online lending in retail sector. The co-lending solution is under customization with Cred Avenue whereas Knight fintech is under integration & customization for pool and co-lending solutions.
3	Bank of Maharashtra	• The bank has facilities to apply for online loans such has personal loan, home loan or a vehicle loan to get 'in-principle' approval. For MSME unsecured business loan, the bank has co-lending partners like LoanTap, Lendingkart, MAS Fin.
4	Canara Bank	• The bank is in the process of launching end-to-end digital lending system.
5	Central Bank of India	• The bank has launched a 'Pre-Approved Personal Loan' digital lending module. • The bank's digital transformation project Cent NEO has enhanced accessibility of retail lending products and expedited loan processing.
6	Indian Bank	• The bank has initiated digital lending journey for MSMEs in various segments and digital renewal of MSME loans can be done by customers online. • The bank also has online loans in Retail, Agri and MSME category.
7	Indian Overseas Bank	• Provides platform for online application for various types of retail loans for which 'in-principle' approval is given. • The bank is in process of bringing sophisticated LOS and LMS.

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No.	*Bank Name*	*Digital Loan Services offered by the Banks**
8	Punjab and Sind Bank	• Introduced digital pre-approved personal loan upto INR 10 Lakh, approval within 30 minutes.
9	Punjab National Bank	• Digital Gold Loan scheme by using streamlined digital process, covering everything from loan application and loan acceptance to loan account opening, security creation, documentation and disbursement.
10	State Bank of India	• Pre-approved personal loans via SBI YONO app is in 4 clicks to pre-selected customers. • The bank gives insta-loan, 'Real Time Xpress Credit', upto INR 35 Lakh for eligible salaried or defence personnel. • To boost the MSME sector, the bank has entered into partnership with Mahindra Finance. • In FY 23, loan volume (number of loans) is 13.39 Lakh, and the value is INR 24,314 Crore.
11	UCO Bank	• End-to-End Digital Lending Platform, in which applying for loan, KYC validation, eligibility, sanction, digital document execution (e-stamping & e-signing) and disbursement of the loan happens with minimum manual intervention.
12	Union Bank	• The digital lending journey of the bank enables digital sanctioning, renewal, and review of accounts, resulting in sanction of INR 2126 Crore with 7.68 lakh accounts being processed digitally. • The bank has implemented end-to-end auto-renewals of MSME loans up to INR 1 million.
13	Axis Bank	• The bank has their digital lending stack MAXIMUS, and, in FY 23, 55% of the personal loans, 48% of the unsecured business loans and 30% of two-wheeler loans were disbursed end-to-end digitally as part of Maximus. • Overall, 45% unsecured business loan disbursed end-to-end digitally.
14	HDFC Bank	• The key digital loan products of the bank include, 10-second personal loans, digital loan against shares, and digital loan against mutual funds. • Xpress Car Loan: the single largest digital loan platform for origination and disbursement with over 50,000 customers and total value of loans disbursed over 3,900 crore. Disbursal in 30 minutes. • Digital loans are sanctioned primarily to the bank's existing customers across multiple products, enabling the bank ready access to their credit history and risk profile. This accessibility facilitates the evaluation of their loan eligibility. Moreover, the credit checks and scores used by the bank in process-based underwriting, are replicated for digital loan.
15	ICICI Bank	• The bank has implemented LMS called iLens which is an end-to-end digital lending platform. • The bank has 10 Digital Lending Applications, to name a few: iMobile Pay, InstaOD, Digital Term Loan, etc.
16	Kotak Bank	• Digital loan for merchants using Kotak POS terminal with a daily and weekly EMI option for making the repayment. • The bank has an integrated, end-to-end digital supply chain finance journey for distributors and retailers buying from OEMs (Original Equipment Manufacturers) on B2B platforms. • The bank also has Actyv.ai, Digi OD Renewal, unsecured PO financing/invoice financing through OCEN, and Insta POS Prime, a business loan for POS-based merchants.

Source: *Annual Reports (FY23) and websites/portals of respective banks.

12.7 Potential Issues/Risks in Digital Lending

While digital lending has witnessed rapid growth in Indian markets, one cannot overlook the risks associated with it. In addition to inherent risk to lending such as borrower's default, digital lending may suffer from several other issues such as fraudulent loan apps, cyber-attacks, data breach, etc. The following write-up describes some of the risks associated with this area and recommends few best practices to mitigate the same.

Fake Loan Apps/Harsh Recovery Mechanisms

Many loan apps that promise to offer hassle-free, instant loans may be bogus and predatory in practice. Very often such apps are deleted from the distribution platforms such as Google/Apple Store. However, in this approach, genuine apps had also been banned in the past.

Nowadays, instead of directly hosting the app on the distribution platform, fraudsters make use of social media sites (such as Meta) which are flooded with their advertisements. Upon clicking those ads, users are redirected to sites which deceptively look similar to Google/Apple Store. The apps falsely project their alliance with regulated NBFC and entice users into taking loans at attractive interest rates. Such apps would have an access to borrower's contact list, image gallery, SMS inbox, etc. The borrower's private information is then wrongfully used by the fraudsters to recover the money in much bigger amounts than the actual dues.

The regulator and government bodies are frequently brain-storming on how to stop this menace. Two possible controls that may work, could be (a) Whether regulators can conduct a detailed KYC of lending apps service providers, and (b) Whether regulators can maintain white list of service providers and MeitY (Ministry of Electronics and Information Technology) would ensure only white-listed apps are hosted on distribution platforms.

The RBI is considering establishing a Digital India Trust Agency (DIGITA) to stop the mushrooming of illegal lending apps. This will enable verification of digital lending apps and maintain a public register of verified apps. If the app does not carry the 'verified' signature of DIGITA, it would be deemed unauthorised and illegal. It is believed that this thorough verification process would help in maintaining greater transparency and accountability within the digital lending sector.

Groups such as Digital Lending Association of India (DLAI) have also launched a campaign to promote awareness in this regard. 'Fintech Suraksha' being one such campaign launched in January 2024 to spot fake lending apps, the importance of multi-factor authentication, and how to report online financial fraud. They will also use social media to create awareness especially among teenagers and senior citizens to differentiate between registered and unscrupulous service providers. It will also involve law enforcement agencies and provide information to investigating officers to strengthen the digital lending related fintech ecosystem.

Cyber Threats to Fintech Companies

Consumers of online lending apps are not the only ones who are at the risk of getting defrauded. The fintech companies which are developing such apps are also a big target for cyber criminals. The act can be as simple as using a logo of a fintech company on social media pages and claiming to lend on behalf of them. Or, it could be a high level attack involving a breach of sensitive data that fintechs maintain on their servers. In case, the underlying lending app has any vulnerability or flaw related to business logic the same would be exploited by the attacker to gain access to the sensitive data of consumers and steal the same. A study conducted by Majeti et al. (2022) revealed that out of 87 lending apps (both regulated and un-regulated) that were tested, more than 95% apps were unsecured and they were having minimum 10 security weaknesses. The average vulnerability score was 5.08 and 7.27 for regulated and un-regulated apps respectively (on the scale of 0 to 10, 0 being the least and 10 being the highest).

Thus, it is crucial for fintechs to remain vigilant and identify potential security vulnerabilities

in hardware, software, or network infrastructure. Especially, it is important to conduct regular vulnerability assessments and penetration testing of the lending apps to identify security weaknesses and close the critical vulnerabilities at earliest.

The Crucial Role of APIs in Lending Ecosystem and Related Challenges

Considering the real-time decision making needed in digital lending process, the lenders need to carry out various tasks in an automated manner. At multiple stages, the lending apps need to interact with other entities such as traditional banking system, mobile wallets or other third party services. Today, the seamless communication among all such entities happen with an 'Application Programming Interface' (API) which acts as a bridge between any two systems. Such APIs may bring in a lot of challenges related to data security and privacy. Multiple entities are dependent on such APIs in digital lending ecosystem, and hence, it is crucial to establish common standards and best practices to maintain interoperability and seamless integration. The data exchange and processing done by an API must comply with regulatory requirements and compliance standard so as to protect consumer's interests. Legacy APIs, if not regularly updated, can be a gold mine to hackers as they are likely to provide 'entry points' to hacker community. Thus, it is necessary to maintain a 'security envelope' around APIs that involves rigorous authentication and authorisation methods, robust data encryptions and regular security audits on various APIs. The applications must undergo regular vulnerability scans to detect APIs related vulnerabilities, if any.

Additional Compliance due to DPDP Act, 2023

Fintech firms, are required to follow strict guidelines about data security, sharing of data, etc. With the recent Digital Personal Data Protection Act (DPDPA), their compliance burden is likely to rise significantly.

In August 2023, DPDP bill was enacted with the purpose of processing the personal data for lawful purposes so that individual's right to protect their own data is not dishonoured. Under the new act, the firms ('Data Fiduciaries') dealing with the digital data of individuals ('Data Principals') have a legal binding to ensure safe collection, processing and sharing of such data. In the digital lending space, such fiduciaries could be fintech firms, NBFCs, banks or any entity who collects customer's data. Fintechs may also be playing the role of 'Data Processors' as they would process the personal data on behalf of a data fiduciary who decides the purpose and extent of collecting the data.

Post enactment of DPDP, all such entities who are involved in the digital lending process will have important obligations, such as

a. Obtaining explicit consent from customers for processing their data
b. Depending on the volume and sensitivity of the data, some fiduciaries need to appoint data protection officer, and
c. An instance of data leakage may lead to penalties of up to INR 250 crore or potential stalling of their services.

12.8 Regulatory Developments in Digital Lending Ecosystem

RBI Working Group Recommendations on Digital Lending Implementation (September 2022)

Along with the initial growth in the digital lending market, several concerns also emerged in the overall ecosystem. As mentioned earlier, there are problems related to borrower's data privacy, unduly charged interest rates and unethical recovery measures, and a sharp rise in fake lending apps with cross-border connections. To overcome these issues, the RBI formed a working group and issued Digital Lending Guidelines in September 2022, applicable to Regulated Entities (REs) (RBI, 2022). The guidelines emphasised on consumer protection, along with standards on disclosures including pricing, data usage and sharing, disbursement and repayment transactions, and customer grievances. It also outlined specific technology and data requirements so as to maintain trans-

TABLE 12.2

Summary of Risks Faced by Digital Lending Ecosystem

Technology-Induced Risks	*Risks due to Nature of Business*
• Fake loan apps/harsh recovery mechanisms. • Use of social media to advertise fake lending apps thereby enticing users to download them.	• Involvement of multiple entities such as LSPs, NBFCs, banks, etc. resulting into lack of accountability.
• Fintech logos being fraudulently used to promote fake lending apps. • Cyber attacks (such as phishing) on fintech companies, leading to sensitive data breach. • The lending apps, if not tested properly may also lead to data breach.	• Possibility of rising defaults and NPA, especially when unsecured personal loans have jumped manifold since 2018 and as of FY23, it is 101.3 million by volume (Blume Ventures, 2024).
• Risks related to vulnerable, unsecured APIs which can be a 'gold mine' to hackers.	• Risks of heavy penalties in case of non-compliance, especially once DPDP act comes into force.

parency, privacy, and safety of customers' data. Fintech companies, though non-regulated entities, play a critical role as Loan Service Providers (LSPs). Thus, the guidelines clearly set rules of partnership arrangements between REs and LSPs and emphasised due diligence to be taken by the REs on LSPs irrespective of the partnership arrangements between both of them.

RBI Guidelines on Default Loss Guarantee (DLG) in Digital Lending (June 2023)

The RBI, in its positive move to enhance the credibility of digital lending ecosystem, issued a guideline in June 2023, which allowed First Loss Default Guarantee (FLDG) (RBI, 2023). FLDG acts as a safeguard among regulated entities and lending service providers against potential losses resulting from borrower defaults. It is a contract between banks and other REs with fintechs and LSPs, whereby the latter compensates the lender for a part of the loss caused by borrower's default up to a certain limit.

> With this guideline, the amount of default loss guarantee in each contract was capped at 5 per cent of the outstanding amount of the outsourced loan portfolio. This stipulation envisages a more balanced risk-sharing between the REs and fintechs. It will motivate balance sheet lenders to evaluate digitally acquired loans more stringently since losses beyond 5% will not be covered by the LSP. (Chherawala et al., 2023)

FLDG guidelines will certainly help in promoting trust and responsible lending practices among the lenders, thereby protecting consumer interest in digital lending space. Additionally, the mandated disclosure requirements will enhance the market transparency and effective monitoring of the digital lending sector by the regulators.

12.9. Conclusion

The digital lending platforms have definitely made an impact on lending markets in India by leveraging technology. Regulator's timely interventions and supportive guidelines have ensured a level-playing field for underlying entities such as banks, NBFCs and fintechs. The publicly available data by Credit Information Company (Equifax, 2023) shows that personal loan products have the highest market share at 72% in digital lending. While it is encouraging to note that many unserved individuals are being served here, it is necessary to increase the share of SME sector who play a seemingly important role in economy.

Another recent challenge is that there has been a rise in delinquency trends in unsecured loan below ₹50000. The 90-day plus delinquency rate for fintechs was the highest at 5% in the under-25-year age segment, followed by 3% for the 26-35-year segment (TransUnion-CIBIL, 2023). The recent move of RBI to increase the risk weights on unsecured loans is likely to make such loans more expensive. Few lenders

have already announced that they would reduce exposure to small ticket size loans. This could result in borrowers finding it more challenging to obtain personal loans through lending apps.

The digital lending ecosystem would continue to face challenges in terms of data security, cyber risks and changing regulatory and compliance requirements. As technology continues to bring innovation, the lending platforms that adopt proactive measures towards protecting consumer data and safeguarding their apps will set themselves apart from their competitors.

At present, app-based lending has garnered traction mostly in the unsecured loan segment. However, one emerging area in the ecosystem is secured lending using 'digital collateral'. It refers to assets held in a digital format which can be used as security for a loan. With the developments in Blockchain, Web 3.0 and related technologies, borrowers would be in a position to offer a collateral by tokenizing their illiquid assets such as real estate. These technologies are not fully matured in Indian markets as yet. However, once the initial hurdles are crossed, tokenised collateral and loans will open up new avenues, especially for SMEs and will contribute to financial inclusion by reaching the underserved SME sector.

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13

Digitalization of Trade

Challenges for Banks in India

Rajesh Ramakrishnan | Smita Roy Trivedi[1]

13.1 Introduction

The growth of international trade in the last four decades has been robust, even considering pull-backs resulting from economic downturns and crises, geopolitical challenges, and Black Swan events like the Covid-19 pandemic. Of these, the impact of the Covid-19 pandemic was felt with the same intensity across all economies, creating unprecedented disruptions in supply chains globally and the financing of trade. The magnitude of disruption and the resultant financial losses forced the industry to innovate and explore technology initiatives like digitalization for speedier and more efficient delivery and settlement systems. Trade transactions pre-suppose the physical movement of goods, transfer of title of the said goods, and payment systems for settlement between counterparties. While goods will always remain in physical form[2], the digitalization of systems and digitization of documents evidencing the physical transfer of goods will play a pivotal role in international trade regaining momentum and surpassing prior benchmarks in the post-pandemic world. It has been accepted in economic literature that digitalization helps to increase the scale, scope, and speed of trade, fostering new ecosystems for trade (González and Ferencz, 2018).

Trade has traditionally been a document-intensive process. Documents evidence the physical movement of goods, allow the establishment and transfer of title to goods, and form the basis of availing finance from financial intermediaries. Transactional efficiencies are largely dependent on the efficient movement of goods and the transmission of data relating to such movement. While there has been incremental and ongoing improvement in the process efficiencies in the physical movement of goods, the transfer of underlying data is still heavily reliant on traditional paper-based methods.

The drawback of dependence on physical documents is that it is difficult to establish uniqueness and authenticity, requires to be transferred in physical form, and can be duplicated leading to issues of escalation of costs, fraud, delay, hassles, and non-compliance. While the payment systems for the transfer of funds have been digitalized with the SWIFT[3] network, the actual settlement between the trade counterparties remains outside the digital ambit. Digitalization or the adoption of technology and its use in the transmission of data across transaction chains and the digitization of underlying documents has a key role to play in shaping the dynamics of international trade growth in the next decade.

Digitalization will allow all stakeholders to come to a common platform to ensure the seamless transmission of data across all processes.

1. The authors are grateful to Naveen Kumar for valuable comments and suggestions. The usual disclaimer applies.

2. To qualify the statement, advances in digital printing technology promises to revolutionize the way goods are manufactured and delivered, but it is still at a nascent stage with less clarity on the scale of applications.

3. Society for Worldwide Interbank Financial Telecommunication.

A subset of digitalization is digitization or the conversion of documents by various stakeholders in the transaction chain to immutable yet transferable data. Digitalisation and digitisation therefore aim at reducing the time taken, ensuring regulatory compliance, and increasing ease of doing business. In effect, it democratizes the participation in and use of the transaction chain by various stakeholders. While all stakeholders, including regulators, unreservedly agree on the benefits of the digitalization process, the actual process of digitalization has remained sluggish and tentative owing to the complexity of the process as well as the diversity of regulations of underlying documents across various jurisdictions.

In this context, this chapter highlights the progress of the digitalization process, especially in the Indian context, given the above-mentioned discussion points. While the growth of international trade in the next decade and the creation of a level playing field for all businesses necessarily require that we transition towards the end-to-end digitalization of the transaction chain, challenges to digitalization are manifold and dynamic. We highlight in terms of the critical documents, the challenges to digitalization, and likely solutions. In the context of the Indian banking industry, we discuss the specific challenges for the digitalization of trade finance services. We also showcase a few successful use cases in the Indian context when all stakeholders come together and collaborate for a common objective.

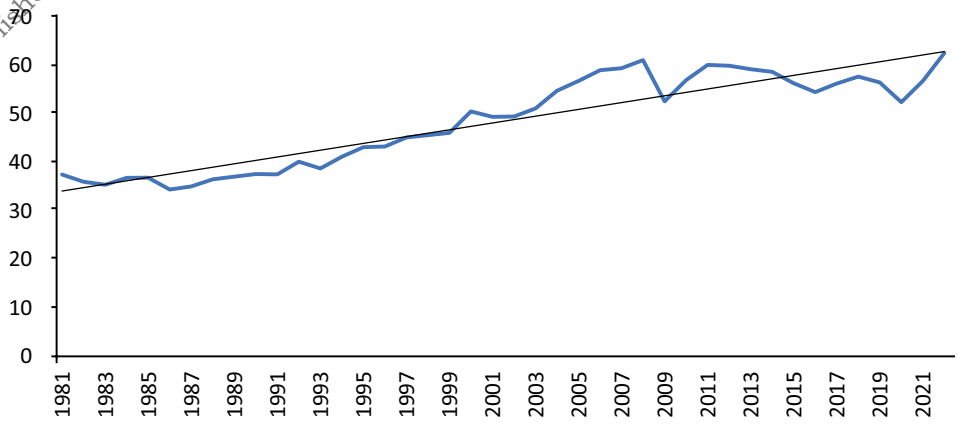
Section 13.2 traces the growth of international trade in the last four decades and its changing dynamics. Section 13.3 looks at the challenges and the progress of trade digitalization globally. Section 13.4 looks at challenges, progress, and successful use cases for the Indian banking industry. Section 13.5 concludes.

13.2. Growth in International Trade and the Need for Digitalization

13.2.1. Growth in International Trade

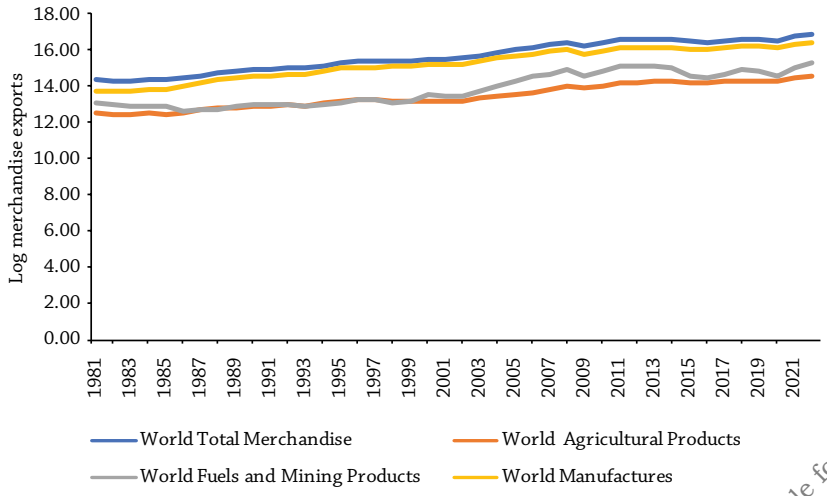
Trade as a percentage of Gross Domestic Product (GDP) has grown from 37% in 1981 to 62% in 2022, which represents a close to doubling of the contribution of trade to world GDP in the last 40 years as seen in Figure 13.1. Two sharp setbacks are noted in the series: the Global Financial Crises (GFC) in 2008-09, and the Covid pandemic in 2020. Importantly, while the fall in world trade as a percentage of GDP recovered quickly post the GFC, and remains above the secular trend, the setback to trade from the pandemic is sharper, and trade as a percentage of GDP lies below the trend till 2022.

FIGURE 13.1
World Trade (% of GDP)



Source: Author, based on World Bank National Accounts data, and OECD National Accounts data.

FIGURE 13.2
Log Annual Merchandise Exports by Product Group



Source: WTO database.

Focussing on the growth of merchandise trade, and its components, Figure 13.2 shows the log of growth for merchandise exports, manufactures, agricultural products, and fuels. While broadly merchandise export growth follows a similar pattern of growth as for trade as a percentage of GDP, manufacturers continue to dominate the growth of merchandise trade. Manufacturers have however shown a lukewarm recovery post the pandemic, compared to fuel and mining growth. Adoption of technological solutions including digitalization may be essential for the growth of international trade in the next decade, especially for trend-surpassing growth.

13.2.2 *Ancillary Services and Documents Dependence*

Historically, the growth in international trade is as much attributable to GDP growth, as to the developments in transportation services which facilitated the physical movement of goods, the evolution of systems to mitigate cross-border counterparty risks, and the increase in trade finance services provided by financial institutions to assuage working capital gaps. These three factors that led to the development of trade also necessitate the use of documents.

First, the development of transportation systems with the adoption of technological development lies at the core of the trade growth. The most profound impact of the adoption of technology is in the shipping industry, which is the preferred mode of transportation of goods across countries[4]. For maritime trade to function effectively, the transport documents (bills of lading) are crucial, to evidence the physical movement of goods and establish and transfer the 'title to goods'.

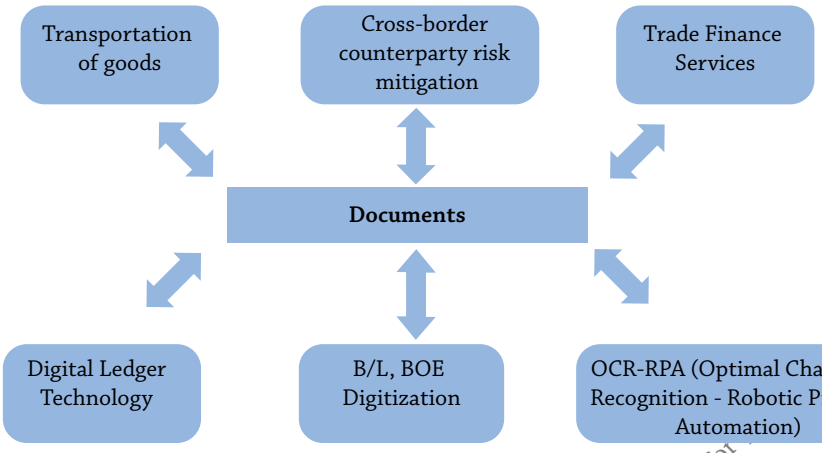
Second, counter-party risk mitigation which addresses the risks in the cross-border physical movement of goods is crucial for the trade growth. This requires the widespread use of commercial and transport documents, right from the bills of exchange to the shipping documents.

Third, the provision of adequate liquidity is crucial for trade payment settlements. In the case of both intra-firm trade credit and bank-intermediated trade finance, trade finance mitigates the risk and allows the firms access to much-needed working capital[5]. Trade finance instruments are document intensive.

4. Organisation for Economic Co-operation and Development (OECD) (n.d.) points out that around 90% of traded goods are shipped and maritime trade volumes are likely to triple by 2050.

5. While the growth in bank-intermediated trade finance services has been instrumental for growth of trade, the pace of growth and accessibility of trade finance remains a cause of concern for businesses worldwide. The ADB report 2023 estimates the trade finance gap to be $.2.5 trillion in 2022, which is an increase of 47% from 2020 (Beck et al., 2023).

FIGURE 13.3
Role of Documents in Trade and its Digitization



Source: Authors.

There are two parts to the settlement system: the actual transfer of title to goods and the transfer of funds for settlement. Payment systems across the globe have seamlessly adopted technology. SWIFT provides a seamless and secure financial messaging service to its members globally (Swift, n.d.)[6]. However, while the transfer of funds has been enabled through such networks at the click of a button, the transfer of title, involving multiple stakeholders and operational processes, does not have a uniform scalable solution.

The above-mentioned three factors that have been instrumental in trade growth are interconnected with technological advances and speed of their implementation. Technological innovations have significantly impacted the manner of physical transportation of goods, yet in the case of the underlying documentation, there is still an excessive reliance on documents in physical form (Figure 13.3).

Thus, the adoption of disruptive technology for both the physical movement of goods and the provision of trade finance services is essential for digitalization to occur. Disruptive technologies will change the way trade is conducted (WCO-WTO Report, 2022). Digitalization refers to the use of technology for data transmission through the transaction chains as well as the digitization of the underlying documents. Trade digitalization necessarily has to incorporate technologies like Digital Ledger Technology (DLT), Big Data, and Artificial Intelligence that enable the transformation of information to data and its flow across channels for trade facilitations (Duval et al. 2023).

13.3. Challenges to and Progress in Trade Digitalization

13.3.1. Challenges to Digitization of Documents and Digitalization

Digitalization involves the adoption of technology for systemic data transmission across the entire trade supply chain process, while digitization refers to the conversion of paper documents to data in a uniformly accepted digital format[7]. Digitization is therefore a subprocess of digitalization.

A crucial aspect of end-to-end digitalization is,

6. Swift is used by more than 11000 institutions across 200 countries. What started in 1973, as 239 banks coming together to facilitate their cross-border payments though a messaging platform, has in the last forty years, transformed as the leading communication network used for payments across borders.

7. We can differentiate between digitalization, digitization and digital trade. Along with digitalization and digitization, there has also been growth of digital trade, commerce enabled by electronic means.by telecommunications and/or digital and data services, covering trade in both goods and services.

therefore, digitization of the underlying documents, like invoices, inspection documents, insurance documents, transport documents, and so on. While any given trade transaction can involve multiple documents, there is a commonality in the data contained in them. Digitizing documents like invoices, inspection documents, and insurance documents requires creating a common standard for the data, which though challenging, is not insurmountable. However, for some documents used in trade, specifically bills of exchange and bill lading[8], the role played in the transaction chain is more than the commercial requirements, increasing challenges to digitalization. Due to their legal nature, finding a uniform solution acceptable across jurisdictions remains a hurdle to the overall digitalization effort.

Providing a digital substitute for the physical bill of lading used across the globe is a major challenge. The bill of lading, used since the 16th century, evolved as an instrument to bring in risk mitigation in trade, and by the 19th century, merchants had established rules and principles for bill of lading (Murray, 1983)[9]. Paper bills of lading are usually identified by watermarks or other such marks and the signature verifies the origin. Both these factors can be manipulated.

Technological solutions for these pain points have addressed the security issues and digital flow of the document. However, these solutions have been closed-loop proprietary solutions that need the document issuers and other stakeholders to sign onto a third-party platform which takes the responsibility of ensuring hassle-free and legal transfer of documents. As such these solutions have not been scalable due to the inherent need for working in a closed loop.

It is not surprising then, that the efforts in digitizing the bill of lading has seen slow progress. In 2021, only 1.2% of the bills of lading issued by the Digital Container Shipping Association (DCSA) were digital. While the DCSA has committed to a 100% adoption of electronic bill of lading (eBL) by 2030, the many functions that the BL serves and the number of stakeholders have thwarted efforts at digitization. Given the large value of goods to which these documents relate as well as the monetary cost of delays, it is natural that there is a resistance to incurring additional costs and associated changes without clarity on the incremental benefits.

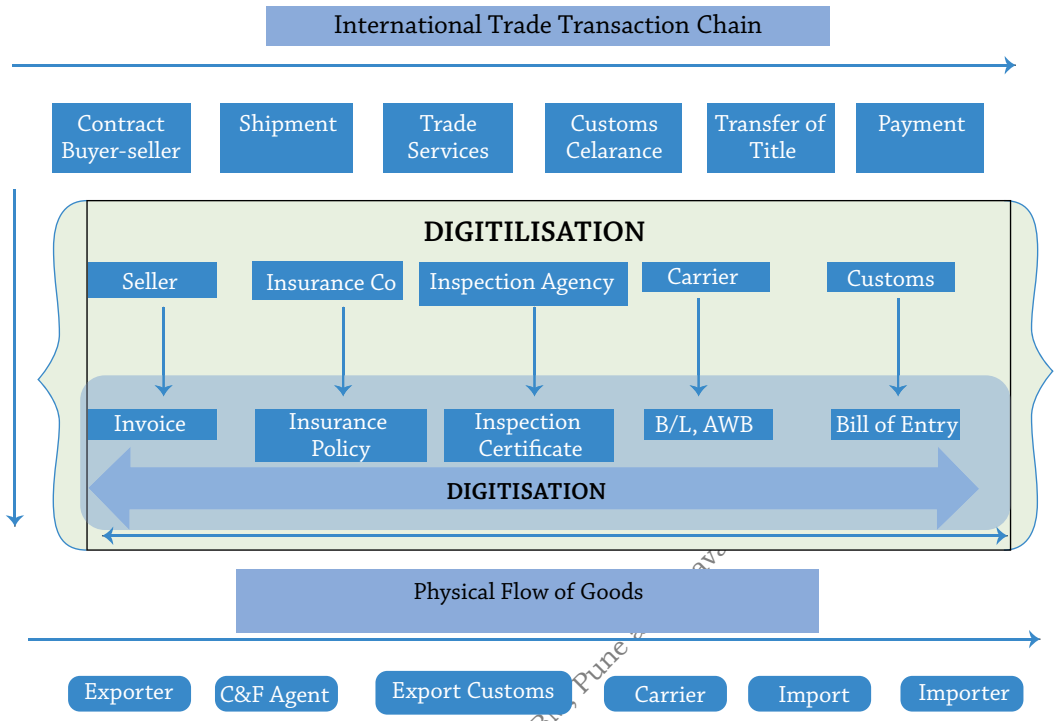
The other important document in financing trade is the Bill of Exchange, and in this case, the progress of digitization has been better. Bills of exchange are negotiable instruments that form the basis of bill finance, supply chain finance, and other products. Historically, the bill of exchange, as a private written order that noted the payment made by one to the other at a future date, allowed for credit to be extended along with acting as a means of payment (Encyclopaedia Britannica, 2018). Crucially, the bill of exchange provides legal recourse to the seller in case of nonpayment by the buyer.

In the Indian context, the legal hurdle to digitization has been addressed. Till 2022, the Bill of Exchange had to be necessarily issued in the physical form (Indian Information Technology Act, 2022). This led to situations, especially in domestic trade finance where the other documents were digitally generated and transmitted, however, the bill of exchange had to be physically printed. In 2022, the Indian Information Technology Act was amended which effectively brought into the ambit the Bill of Exchange[10] permitting electronic or digital execution of the same (Sinha, 2022). Thus, while

8. An important role of trade documents is to
   - enable the establishment and transfer of title to the underlying goods subject to the payment terms and other conditions of the instruments under which they are issued, performed by bill of lading.
   - help buyer to get physical possession of goods upon satisfaction of the terms of the contract by either remitting the value of the goods or incurring a payment obligation, performed by the Bill of Exchange, to bind the buyer to his obligation.
9. Additionally, bill of lading has a regulatory role as Custom ports, another important stakeholder in the system, also rely on the bill of lading to establish movement, nature and quantity of goods, and other details of the shipment.

10. Bill of exchange issued in favour of or endorsed by an entity regulated by the Reserve Bank of India, National Housing Bank, Securities and Exchange Board of India, Insurance Regulatory and Development Authority of India and Pension Fund Regulatory and Development Authority as defined in section 13 of the Negotiable Instrument Act, 1881 (26 of 1881) (Sinha, 2022)

FIGURE 13.4
Bird's Eye View: Digitalization of International Trade



Source: Authors.

the bill of lading faces challenges of acceptance across jurisdictions and interoperability across systems, the bill of exchange depends on country-specific legal acceptability.

Does digitization by itself solve the problem of digitalization? The challenge in the digitalization of the process of physical movement of goods is that documents are created by various stakeholders in different jurisdictions at different points of the transaction chain using different proprietary systems and formats with no uniformity. Any solution for digitalization has not only to address the inter-operability of documents but also uniform standards for issuance irrespective of the issuer. Thus, the entire process of digitalization, as shown in Figure 13.4, which involves both the commercial aspects and physical movement of goods, has to incorporate the digitization of documents, which for certain documents remains a challenge.

13.3.2. Progress of Digitalization

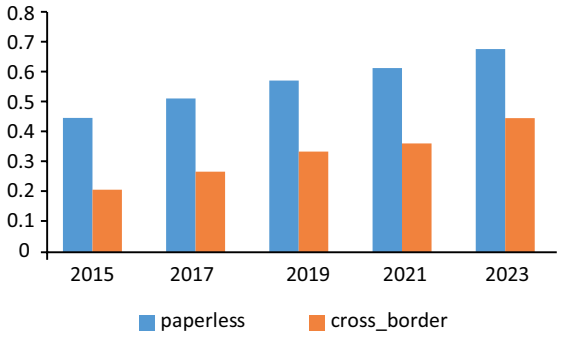
Broad Trends

To understand the gains from digitalization, we use the data from the UN Global Survey on Digital and Sustainable Trade Facilitation (UNTF). Digitalization of trade is measured by this survey along two areas: 'paperless trade' and 'cross-border paperless trade' (UNCTAD, 2023). The metrics for paperless trade include the facilitation measures enabled by the customs, while those for cross-border paperless trade include the documents required for the provision of trade finance services (UNCTAD, 2023). Appendix 1 gives the parameters for the index as used by UNTF. In Figure 13.5, we plot the index for 'paperless trade' and 'cross-border' trade for the surveys conducted in 2015, 2017, 2019, 2021, and 2023. Global trade digitalization is increasing but gains in cross-border trade are much less than those in paperless trade.

Thus, while there has been some progress made in digitalization globally, it has happened in parts of the transaction chain. On the domestic side, like in India, the processes under import-export custom formalities have been digitalized to a greater extent than the physical movement of goods. However, other documents required for trade finance services like Bill of Lading, Certificate of Origin, Bill of Exchange continue to be used in the physical form.

FIGURE 13.5

Key Indices of Trade Digitalization Over Time



Data source: UN Global Survey on Trade Facilitation and Paperless Trade Implementation 2023.

Green Shoots

We present here some case studies on the newer developments in trade digitalization. Given the lack of publicly available data on impact of the various digitalization efforts made by stakeholders, we focus on gleaning takeaways from these case studies.

Distributed Ledger Technology (DLT): Distributed ledger technology is 'tamper-proof and decentralized' (Ganne, 2018). Due to the inherent features of cryptography, immutability, and transparency, it seemed the most likely solution to the digitalization flow across silos of trade. DLT as a system can theoretically provide a solution to end-to-end digitalization, however, the lack of system compatibility across stakeholders and inertia for incurring increased costs means there are few use cases worldwide. Thus, interoperability and legal backing for electronic records remain the biggest hurdles to the digitization of trade.

According to Patel and Ganne (2020), DLT projects are making progress, with the average stage of maturity going up from 2.3 out of 5 in 2019 to 3.3 in 2020. The periodic table of DLT projects given by Patel and Ganne (2020) divides the DLT projects into seven categories: supply chain finance, trade finance, know your customer (KYC), insurance, DLT digitization of trade documents, shipping and logistics/supply chain, and miscellaneous. In 2020, 5 projects were well established and running out of 15, while 4 were in momentum. Gains are being made, though incrementally, given the complexity of the processes in each of the transaction links.

UNCITRAL's Model Law on Electronic Transferable Records (MLETR): This is another initiative that has the potential to address the issue of acceptability across jurisdictions. The MLETR is a model law given to allow the legal use of electronically transferable records across borders and internally in trade. The principles apply to instruments like bills of lading, bills of exchange, promissory notes, and warehouse receipts.

MLETR works on three key principles:

- Non-discrimination against electronic records
- Technology neutrality, and
- Functional equivalence

Of this, the functional equivalence principle has great importance. It seeks to address the operational issues in issuing, holding, and transferring by delivery of physical records with their inherent characteristics of originality, signature, and actual physical feel. The recognition and adoption of MLETR have seen encouraging signs, especially in the last decade. However, adoption across the globe, a prerequisite for digitalization and digitization remains a challenge.

Digital Standards Initiative (DSI): The Digital Standards Initiative (DSI) of ICC, ADB, and the Government of Singapore (ICC, n.d.) has shown the potential to unlock the Gordian knot of interoperability. DSI aims to drive the global adoption of digital standards and facilitate the worldwide adoption of legislative measures based on UNCITRAL Model Law on Electronic Transferable Records (MLETR). DSI provides standards for all the major documents that are

typically needed for effecting a trade transaction. By recommending standards DSI remains technology-neutral and offers the stakeholders freedom to operate as per their comfort and cost.

Across the globe, these initiatives have happened in spurts: for example, in February 2021, the Electronic Transactions (Amendment) Bill was passed by the Singapore parliament, which allowed the creation of the electronic bill of lading as legally equivalent to the paper bill of lading (Lin, 2021). In the UK, the Electronic Trade Documents Act 2023 (ETDA) was passed on July 20, 2023, which allows legal recognition of trade documents such as bills of lading and bills of exchange in electronic form (Shepherd et al., 2023).

In the Indian context, the Bill of Lading Act of 1856 is an act relating to Bills of Lading. This act does not mandate the form of a Bill of Lading, however, considering the date of issuance of the Act, in intent, it would be meant for issuance and transfer of physical Bills of Lading. Since e-BLs are not explicitly prohibited it can be presumed that e-BLs too are covered by this Act. However, few legal judgments can be used as precedence and provide a legal guideline. So, until specific laws are enacted, the usage will be restrained by the lack of legal clarity. One way for countries like India to approach the issue would be to study the acts passed by Singapore and the United Kingdom which are based on UNCITRAL MLETR as a base to pass its law for electronic records.

13.4. Digitalization in the Indian Context: Challenges, Progress, and Success Stories

13.4.1. Challenges

Traditionally Indian banks have worked on the branch concept wherein all functions of banking including sourcing, onboarding, servicing, and transaction processing were decentralized. With the growth in volumes and maturity of systems both in terms of technology as well as compliance, banks have moved towards a centralized system of functioning. In the centralized system, except for activities requiring face-to-face interaction with the customer, the work has been moved to the central processing centers (CPC) for the adoption of digital solutions.

The key beneficiary of digitalization is the retail banking industry in India (McKinsey Global Institute, 2019). Customers are encouraged to use the alternate channels for their daily banking needs. This has a significant impact on the main pillars of efficient banking, viz., the transactional turnaround time (TAT), the cost, and the ability to handle incremental volumes in retail. However, these structural changes and innovations have not been replicable in the trade finance domain. While the processing is moving to CPCs, however, the corresponding digitalization of products and processes has remained a challenge. Therefore, barring the basic minimum of digitalization in the matter of regulatory returns such as certificates, trade processing has largely been unaffected by the digital storm that has engulfed the banking industry.

The following benefits need to be considered in terms of cost:

Efficiency: One of the major reasons to adopt digital solutions is the perceived positive impact on the bottom line of banks. Banking as a service industry in general, and trade services in particular is reliant on quality human resources for its effective functioning. Adoption of digital solutions can have a direct impact on the total number of manhours required to execute a transaction. In a country with a clear demographic advantage with easy availability of well-qualified and trained labor, it is relatively easier for banks to attract the needed skilled manpower at a much lower cost than the more developed economies. Therefore, a solution that would provide benefits of scale, say over five years, needs to have a faster break even for wider acceptability given the availability of labor in India. In the absence of such clear-cut financial incentives, the adoption of digital initiatives in trade processing will be in spurts and largely dependent on external push.

Customer Satisfaction: Customer retention is an important aspect of banking, especially in an age of minimal human touchpoints and maximum digital experience. The traditional metrics of customer satisfaction depended heavily on the relationship of the branch with

the customer. Today technology can play a key role in the acquisition and retention of loyalty of the customer (Filotto et al., 2020). Adoption of digital solutions in trade may not be a deal breaker for large banks who are more invested in managing the existing products and processes and therefore consider technology initiatives as 'good to have', but for relatively newer and therefore more agile banks, technology remains the unique USP to attract potential customers. Moreover, newer banks with a smaller customer base find it easier to introduce big-bang technology initiatives than larger older-generation banks who find an incremental change approach more feasible.

Compliance: Anti-money laundering initiatives, in this case, trade-based money laundering activity is a growing concern among bankers across the globe. However, increased monitoring/surveillance has increased costs and related infrastructure development. While this is a regulatory requirement, being one step ahead is what is expected from banks and financial institutions keeping in view the larger global interests. Implementation of technological initiatives to address regulatory concerns is always going to be a factor of the availability of funds and the direct regulatory direction.

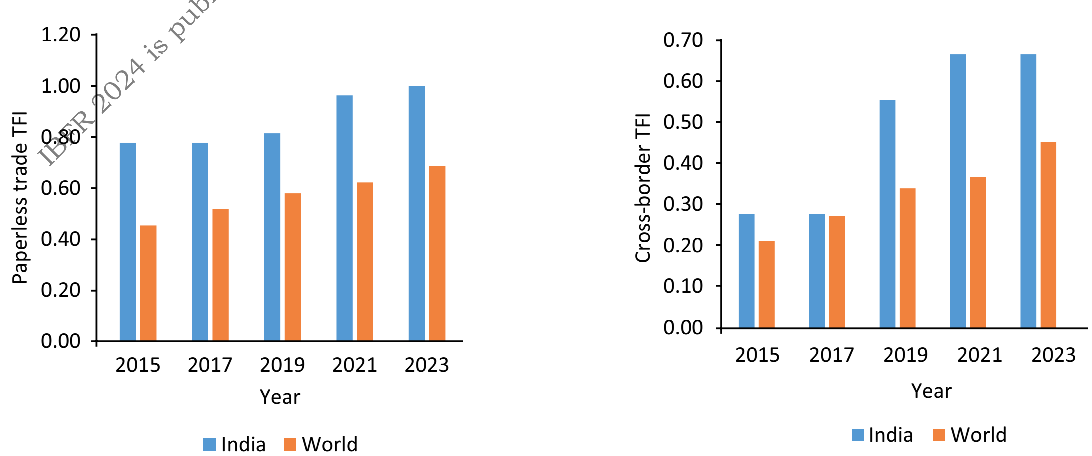
Legality: Until there is an industrywide adoption of MLETR or similar laws there has little legal precedence that can be used for interpretation and judgment in case of disputes under paperless trade transactions in India.

13.4.2 Progress

We present India's comparative picture in trade digitalization with reference to the world in terms of the index from the UNTF Survey. India has performed better compared to the global average for both paperless and cross-border trade as can be seen from Figure 13.6A and 13.6B. But as seen from Figure 13.7 while paperless trade has an index of 1, the highest score possible, cross-border trade has an index of 0.67.

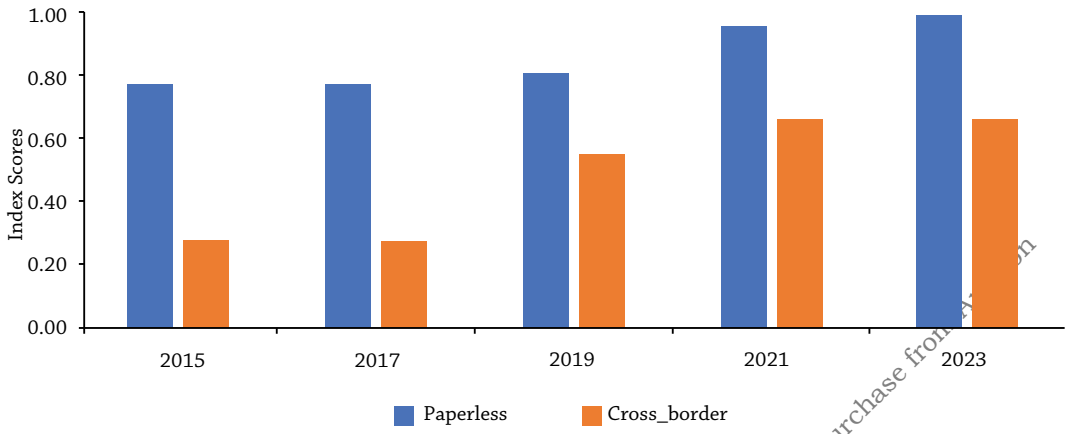
A key reason for the high score in trade facilitation is several digitalization initiatives taken by the Government of India and the Reserve Bank of India (RBI) to facilitate the adoption of technology in the 'paperless trade' segment. These initiatives relate majorly to one aspect of the transaction chain: the customs-related regulatory concerns. Following recommendations of a Working Group (Chairman: A. K. Pandey, CGM, FED), the Reserve Bank of India (RBI) launched Import Data Processing and Monitoring System (IDPMS) and Export Data Processing and Monitoring System (EDPMS) to track and monitor import and export transactions (RBI, 2016). These two data processing and monitoring platforms have played an important role in increasing the efficiency and regulatory compliance of trade financing by banks. A host of initiatives have been taken by the Directorate General of Foreign Trade (DGFT). These include auto issuance of IEC (importer-exporter code), e-issuance of licenses of restricted items, paper-

FIGURE 13.6A AND 13.6B
Paperless Trade and Cross-border TFI (India and World)



Source: UN Global Survey on Trade Facilitation and Paperless Trade Implementation 2023.

FIGURE 13.7
Progress in Cross-border and Paperless TFI (India)



Source: UN Global Survey on Trade Facilitation and Paperless Trade Implementation 2023.

less duty exception schemes, paperless auto-approval of export benefits, online handling of trade disputes, online issuance of preferential certificates of origin, paperless processing of authenticity of DGFT documents, and so on (DGFT, 2021).

13.4.3 Success Stories

1. TReDS: One of the simplest yet elegant examples of what digitalization and digitization can achieve was exemplified by the successful implementation of the Trade Receivables Electronic Discounting System (TReDS) (RBI, 2020). Domestic trade finance in India depended on the bill finance or invoice finance structure which over some time matured into anchor-led supply chain finance (SCF) programmes. These were introduced to address the inefficiencies of the existing system of financing and take advantage of economies of scale.

The initial SCF programmes were paper-based with the customers submitting physical invoices, transport documents, etc., and requesting the bank for finance. Depending on the product and volume a single request could contain a hundred invoices with supporting documents. These would have to be manually scrutinized and tallied by the bank before releasing finance, a laborious and time-consuming activity. As the system evolved especially with the introduction of fintech companies as active players in the market, the SCF system evolved to an end-to-end digital platform usually using proprietary software. However, this was not a scalable model since it married customers to specific banks either due to exposure limitations or technology constraints.

TReDS has provided a solution for both. A marketplace platform that provides access to the buyer, the seller as well as a financier with required security protocols and checks and balances, it has at one stroke democratized the entire process with the seller being able to drive the pricing and choose the bank of its liking. Here both digitization and digitization have worked seamlessly.

2. Electronic Bank Guarantees (e-BG): Traditionally bank guarantees (BG) in India have been issued under the Indian Contract Act 1872. A bank guarantee in India has to be stamped with the stamp duty as per the State Stamp Act. Thus, bank guarantees have been issued in the physical form on bank security paper post requisite franking. While the transmission of the request for issuance has been automated through the use of trade portals, the issuance by the bank to the beneficiary has been a physical process that involves printing the BG, stamping it, signing it, and dispatching it to the beneficiary. An electronic bank guarantee issued using the NeSL (National E-Governance Portal) portal eliminates the physical documentation and flow associated with bank

guarantees. It is digitally stamped with the actual text of the BG embedded as a composite electronic document and digitally signed by the Information Technology Act. Thus, it has at one stroke addressed the issues of duplication, fraud, turnaround time, security, and costs that are associated with the physical process. With a user-friendly portal and undeniable benefits, this initiative has seen adoption across banks and the industry (National E-Governance Services Ltd., 2024).

3. Indian Banks Digital Infrastructure Company (IBDIC): Indian Banks Digital Infrastructure Company (IBDIC) Private Limited, an initiative of a group of eighteen leading public and private sector banks has been incorporated with the aim of creating a digital infrastructure using emerging technologies to provide inclusive, secure, and future-forward innovations. In June 2022, Reserve Bank Innovation Hub (RBIH) conducted a successful Proof of Concept (POC) exercise involving eleven banks, DLT fabric partners, DLT application layer partners, and fintech startups, which received a positive response. Based on the insights of this POC, RBIH is working towards the adoption of DLT at scale along with Indian Banks' Blockchain Infrastructure Co Pvt Ltd (IBBIC). However, as iterated by the Minister of State for Finance, Bhagawat Karad, there is no proposal to establish guidelines for banks or to specify a common blockchain technology platform model (CIO Tech Outlook Team, 2023).

13.5. Conclusion

Digitalization has been a driver of change in the banking industry, yet trade lags significantly behind in the adoption of digitalization. While all stakeholders, including businesses, understand the need and the benefits of digitalization, the complexity of trade and the lack of uniformity in global laws have meant that efforts at digitalization have remained in pockets and restricted to less complex instruments and processes.

Digitalization in retail banking space has showcased the immense benefits of such initiatives. It has the potential of being a game changer both in terms of savings for the firms as well as introducing more mature job profiles to the workforce by eliminating routine, non-value-added tasks improving overall morale and customer satisfaction. Trade will remain an isolated system and a laggard in terms of technological adoption vis-a-vis the banking industry as a whole unless it quickly adapts and adopts the digital philosophy.

Moreover, the regulator should picture trade digitalization in the context of its environmental costs, which the economic agents are unlikely to consider. There is a growing recognition of behavioral public policy in case of such concerns. If economic agents are subject to heuristics and biases (Tversky and Kahneman, 1974), and cannot make rational decisions, should the 'state' step in to 'nudge' them in the right direction? (Thaler and Sunstein, 2008). For example, in deciding on a digital initiative, the businesses or financial institution will look at the cost involved initially and the discomfort of shifting to new systems. It is not plausible to expect them to either consider the environmental concerns, or even the long-term impact on their businesses given the uncertain world structure.

Yet, simple initiatives can help in addressing environmental concerns. A typical trade finance transaction may use anything between ten to twenty paper documents, covering hundred pages. For marine transport using the bill of lading, fifty documents could be used to be exchanged between as many as thirty parties (UK Law Commission, 2022). Initiatives like private sector e-invoicing can lead to a 63% reduction in greenhouse gas emissions per invoice, coming from the efficiency gains (Duval et al., 2023). Stakeholders have to be 'nudged' in the direction of digitalization, while ensuring that 'libertarian paternalism' does not restrict the freedom of individual choices of stakeholders.

Industry bodies like ICC, multilateral organizations like WTO, UNCTAD, ADB, and governments like Singapore and UK have led some major initiatives in trade digitalization. In India, there have been concerted efforts from the Government and RBI through various initiatives to facilitate ease of doing business,

helping India to make considerable gains in the trade facilitation index. RBI has been providing an enabling environment for the gestation of technological applications across the banking industry.

However, as on date, the regulators and multilateral organizations have come together in a disjoint manner, with solutions emerging for trade digitalization across the transaction chain in bits and pieces. While there are green shoots in terms of initiatives across the globe, without a common platform for stakeholders across the transaction chain, digitalization efforts may be thwarted. The example of SWIFT can be a prototype for multilateral organizations to think of open-loop consensual or cooperative systems that democratize the transaction chain digitalization for all. Furthermore, digitalization of trade and cybersecurity are increasingly connected, as with digital connectivity the risk of cybersecurity threats increase. Stakeholders, recognising this, are coming together to address these issues (Meltzer, 2020).

Problems are evident, potential solutions are visible, however, implementation requires sovereign backing and synchronicity of efforts. The sheer volume of global trade has meant that these initiatives have to balance the overall benefits and costs. Technology can reduce the volume of paper but given the dependence on a large number of documents and players in the ecosystem, the need for conformity in the documents will remain. Digitalization is required for trade to be leaner and more efficient and for this, the ecosystem must have faster adoption of technological innovations. Moreover, unless incentivized and 'nudged', given the initial costs and efforts to be made in terms of digitalization, adoption of digitization solutions by businesses will remain slow.

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APPENDIX 1

List of Digital Trade Facilitation Measures Considered in the Trade Digitalization Index

Sub-groups	*Measures*
Paperless trade	Automated Customs System
	Internet connection available to Customs and other trade control agencies
	Electronic Single Window System
	Electronic submission of Customs Declarations
	Electronic application and issuance of import and export permit
	Electronic submission of Sea Cargo Manifests
	Electronic submission of Air Cargo Manifests
	Electronic application and issuance of Preferential Certificate of Origin
	E-Payment of Customs Duties and Fees
	Electronic application for Customs refunds
Cross-border paperless trade	Laws and regulations for electronic transactions
	Recognized certification authority
	Electronic exchange of Customs Declaration
	Electronic exchange of Certificate of Origin
	Electronic exchange of Sanitary and Phyto-Sanitary Certificate
	Paperless collection of payment from a documentary letter of credit

Source: Reproduced from UNCTAD (Duval et al., 2023).

14

Global Emergence of Open Banking and Embedded Finance

Explorations for India

Deepankar Roy[1] | Himadri Sikhar Pramanik

14.1. Introduction

Although the concepts of 'Open Banking' and 'Embedded Finance' are similar, there are differences that needs focus through a standardized understanding of both the concepts. Abilities to integrate financial services and goods into non-financial channels, like social networking, smartphone apps, e-commerce, healthcare, travel, and other consumer platforms leads to **'Embedded Finance'**. Through purpose-driven collaborations with financial institutions, non-financial organizations may provide financial services to their customers. For instance, a ride-sharing service might provide its drivers with a credit card to cover for fuel and vehicle maintenance costs. In yet another instance a merchant might offer point-of-sale financing, enabling customers to pay for a product in instalments as well if required. Such augmentations to enable financial services as per need, alongside consumptions is the essence of embedded finance.

Abilities to demonstrate matured embedded finance practices are linked to embracing open banking. A regulatory or market-driven structure known as **'Open Banking'** allows customers to safely share their financial information beyond the conventionally data-holding financial organizations like banks. This option provides customers greater ownership, flexibility, and control over their data, even facilitating easier switching between financial service providers. Leveraging customer data, financial service providers may offer innovative and personalised services. For instance, Application Programming Interfaces (APIs) allows users to link their bank account and associated data to any suitable robo-advisory app or a budgeting software to analyse spending patterns and offer personalized guidance. The foundation of open banking is a shared, open standard for the safe interchange of financial information among organizations on the basis of explicit consent from customers.

Through the evolving paradigms of Open Banking financial data of customers is made available to conceptualize use cases, meaningful applications, innovations, and services enabling Embedded Finance practices alongside other non-financial consumptions towards empowering customers and improving experiences. Multiple instances of such embedding or in other ways providing services like financing, loans, insurance, and other financial products are related to emergent Open Finance practices (OECD, 2023).

While open banking has gained primacy recently, there is, however, limited agreement on what it means and associated definitions thereon. Examining 282 papers on open banking, G. K. Briones de Araluze and N. Cassinello Plaza seek to define open banking using the bibliometric analysis method (Briones de Araluze and Cassinello Plaza, 2022). To boost compe-

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tition in the financial sector, open banking is defined as a generally regulated framework that enables banking customers to share their data with third parties, typically through standardised interfaces such as APIs. Global study of practices indicates four conceptual themes that have been linked to open banking:

1. Platform-based business model primarily for the retail banking sector and beyond.
2. Emerging trend of data sharing applied to banking data, mainly through APIs.
3. Interactions between established financial institutions like banks and fintech ecosystem including even non-financial organizations.
4. Regulatory framework to support the open banking phenomenon in some jurisdictions. Apart from the PSD2 (Payment Services Directive 2) (European Central Bank, 2018) in the EU and the open banking initiative in the UK, open banking legislation is emerging in Australia, India, Mexico, Brazil, Russia, and Canada, among others (Briones de Araluze, 2022).

There is emerging focus and guidance on the boundaries of underlying regulations that determine enablement of open banking in India.

Closely associated with open banking and embedded finance is yet another related idea: **BaaS (Banking as a Service)**. BaaS is a business concept in which banks offer their infrastructure and financial services to other businesses to utilise. In other words, this implies that any organisation, including non-traditional financial firms like fintechs, may use a bank's current basic financial capabilities without developing the underlying banking infrastructure. Therefore, non-conventional financial products can be created by leveraging account opening, KYC (know your customer), and payment processing capabilities. This immensely increases the feasibility and viability of embedded finance across industries.

Non-financial organizations may provide front-end interfaces and experiences while it is the bank that offers the core financial services. Observations indicate the emergence of many innovative use-cases globally and in India. These innovations focus on customer experience and primarily involve payment systems including leverage of credit cards. Adoption of open banking, embedded finance, and BaaS paradigms alongside other industries leads to many creative novel use cases with impacts on conventional financial services. For instance, a retail business might provide financing choices to clients so they can buy things; a travel agency might provide customers with travel insurance; and a healthcare organisation might provide patients with medical billing and payment services. Multiple fintech organizations offer apps for PFM (Personal Finance Management). Multiple evidence demonstrates incorporation of payment methods on e-commerce platforms. Customers are offered a variety of choices including options like debit cards, credit cards, and digital wallets to complete payments. With embedded finance practices non-financial organizations can offer payment capabilities to customers and thereby enhance value and experience. Additionally, these organizations may customize offerings with instalment payments, leverage lending opportunities, execute Buy Now Pay Later (BNPL) options to emerge as more competitive and differentiated. These and other strategic imperatives lead to proliferations in open banking and embedded finance as discussed in the following section.

Section 14.2 includes discussions on regulations, revenue and value imperatives including customer-centric growth opportunities that drive open banking and embedded finance. Section 14.3 presents how embracing emergent technologies and focusing on APIs is prime to achieving innovative solutions. Global explorations along these relevant issues are contextualized for India, in Section 14.4, on the trends, scaled instances, and deployments. The chapter highlights opportunities for the future of open banking and embedded finance, in Section 14.5, including evaluation of benefits, challenges and implications relevant globally and for India. Section 14.6 concludes the chapter.

14.2. Drivers of Open Banking and Embedded Finance

1. Regulations: Encouraging and progressive regulations drive open banking globally and similar guidance is emerging in India. With Payments Service Directive 1 (PSD1) in the European Union in 2009, open banking became mandated. PSD1 supported competition and promoted more effective payment methods. After PSD2 in 2018 (European Central Bank, 2018), users could guard their own data. Competition and Markets Authority in the United Kingdom, mandated in August 2016 that nine large retail banks across UK and Europe (Huw van Steenis, 2019) allow licensed start-ups to have direct access to the data, including account-based transactions based on customer consent.

Open banking was enrolled by 240 Financial Conduct Authority-regulated providers by August 2020 (Guodong Long et al., 2021). As part of the Consumer Data Rights (CDR), the Australian Treasury department and the Australian Competition and Consumer Commission (ACCC) began an open banking project on July 1, 2019 (Government of Australia, 2020). CDR intended to develop into an economy-wide system for customer data to be transferred securely leading to Australian Parliament enacting CDR legislations. An inquiry study includes a high-level design for China's open banking ecosystem (Zhang and Tao, 2019).

The Reserve Bank of India (RBI) released guidelines for open banking APIs in 2018, with a focus on financial inclusion and innovation. Important characteristics consist of: **(1) Interoperability**: Ensuring that various banking and financial systems can function together seamlessly; **(2) Security and Privacy**: A strong focus on user privacy and data protection, with stringent rules on consent for data sharing; **(3) The Unified Payments Interface (UPI)**: It is a platform that facilitates instantaneous money transfers and payments via virtual payment addresses or mobile numbers; **(4) The Account Aggregator (AA) Framework**: It is a consent-based data-sharing model that allows small businesses and individuals to safely share their financial information with third parties. RBI guidelines further mandated standardized APIs for account access, payment initiation, and data aggregation. The regulatory advice promoted equal opportunities and increased acceptance for fintech startups as well as established companies (Poddar, 2024).

India has also taken the lead in implementing open banking by allowing an intermediary to handle client consent management. Primarily with a license as Non-Banking Financial Organization, these intermediaries operate in India. The RBI authorized the consolidation of a customer's financial data maintained by several financial institutions and dispersed among financial sector authorities in September 2016 when it announced the establishment of a new licensed business named Account Aggregator (AA) (Government of India, 2021). In India, AA serves as a middleman between Financial Information User (FIU) entities that are registered with and governed by any financial sector regulator and Financial Information Provider (FIP) entities such as banks, banking organizations, non-banking financial organizations, asset management organizations, depository, depository participant, insurance organization, insurance repository, pension fund, etc. APIs facilitate the information flow. While this information flow is driven by customer consent the aggregators in India are not allowed to store data or utilize it for any non-defined purposes (Rao, 2021). With the goal of harmonising data privacy, India released The Digital Personal Data Protection Bill (DPDPB) in 2023 (Government of India, 2023). The bill guides in creating data governance procedures, and extensive security for embedded finance ecosystems with focus on open banking.

Beyond regulatory compliances associated with embracing the paradigms of open banking and embedded finances participatory organizations gain value from enhanced revenue and growth opportunities as highlighted in the following section.

2. Revenue: Financial and non-financial organizations can create new revenue sources while enhancing customer experiences. Simultaneously detecting possible weaknesses and creating controls, embedded finance assists financial organisations in reducing risk while differ-

entiating for competitiveness. Opening data through APIs help banks and other financial/ non-financial institutions. It allows information to flow across the financial services industry and beyond, providing banks with useful, actionable knowledge. The emergence of Banking as a Service transforms services viewed traditionally as cost-centres like account management, KYC, and payment transactions to a revenue earning opportunity. The adoption of open banking and embedded finance driven solutions generate revenue gains for banks and other organisations, which can be broadly classified into two categories: **(1) Direct Revenue Gains** between bank and embedded finance partners; and **(2) Indirect Revenue Gains** (Akcok, 2023). Discussed here are scenarios where banks and other organizations may generate direct and indirect revenues through open banking and embedded finance.

- Direct Revenue Gains may include multiple fee-based incomes. For example: **(a) Licensing Fee:** Incorporates financial services and products into the organization's business processes using financial APIs alongside embedded finance partner; **(b) Subscription Fee:** Entails regular payments to access the platform or use specific functionalities. Banks offer a portion of their embedded finance APIs as premium APIs; **(c) Transaction Fee:** The revenue stream is derived from transaction processing fees; **(d) Referral Fee:** The primary focus of this business is on complimentary goods and services, for instance advertising a particular bank in the retail real estate, auto, or insurance sectors; **(e)Commission-Based Services /Revenue Sharing:** Businesses that provide services like investment advice or insurance may get paid through commissions. Banks combine offerings with third parties, such as insurance, or third parties combine their services with banks, such as account opening and lending; **(f) Conceptualization of New Business Models** by harnessing convergences of financial and non-financial across adjacent and related industries. Banks can play the role of primary intermediary in such ecosystems.
- **Indirect Revenue Gains** may comprise **(a) Affiliate Marketing/Advertising:** Businesses collaborate to market their goods and services for commission on sales; **(b) Lead Generation:** Embedded finance integrations are used by banks to provide leads for their financial solutions; **(c) Data Acquisition for Clients and Merchants:** Banks gather more customer information through embedded finance. Discovering life events like becoming a car owner, becoming a parent, changing jobs, being unemployed, and developing other financial habits are opportunity triggers for banks; **(d) Market Insights:** Banks and other organisations may gather, compile, and sell to third parties non-personally identifiable information (PII) and insights; **(e) Newer Business Models:** Embedded finance helps banks find new revenue sources and business models through continuous innovations, curiosity and creativity.

3. Other Value Imperatives: Banks gain by improving the partner and vendor ecosystem with the goal of setting or adhering to integrated finance towards improved offerings and solutions. This results in a few value drivers for the financial services sector, some of which are listed below.

- Several bank-fintech alliances and collaborations for growth, addressing newer customer segments and conceptualization of innovative products and solutions.
- Increased cooperation amongst banks to provide a selection of products that address shared issues and consumer needs. This leads to collective approaches in problem solutions.
- Banks form meaningful partnerships with non-banking entities to provide their customers with financial services and goods. This can assist banks in reaching a wider audience and creating new revenue sources from untapped and marginalized segments even leading to financial inclusion in certain instances.
- Formation of an organisational and technological base for the safe and efficient

integration of embedded finance services into partner platforms in compliance with regulations.

- Emphasis on technology and innovations may result in distinct advantages and differentiations when using analytics and data, alongside focus on the customer experience. Focusing on technology will improve capabilities in resilience and cyber-security.

Focus on technology to enable open banking and embedded finance practices primarily manifests through APIs. Organizations demonstrate innovative business model transformations by embracing APIs and other related and emergent technologies such as cloud, blockchain, analytics and artificial intelligence among others. The need to use standardized digital technology for building the transactional platforms of participating players in the value chain and digital transformation of their respective businesses, including innovatively creating new business and revenue models by different financial and non-financial players is imperative globally and in India. Some views focus on blockchain technology with an added layer for artificial intelligence tools and models. However, for this, more innovative solutions would be required to improve interoperability of platforms.

14.3. Emerging Open Banking and Embedded Finance Transformations with APIs

Research investigations and observations across emerging global practices in financial services indicate multiple use cases in open banking and embedded finance. As applications in embedded finance and the usage of APIs in open banking continue to grow in maturity and scale, we assess probable impacts in conventional banking and financial services.

Open banking has been part of many prominent EU banks' operations over the past few years. Several institutions have stated that, in addition to Payment Services Directives, premium APIs must be the main priority for open banking success. Platforms are used to accomplish several tasks, such as account opening for individuals, securities settlement status, and income verification among others. Some banks have created new paradigms in open finance by going beyond the revised PSD2 of the European Union to leverage benefits from open banking. It has been observed that banks in the EU and around the world host several hackathons to learn how to use APIs for meaningful client services (SIX Group Ltd, 2023). These innovation explorations have resulted in several bank-fintech associations.

Banks in the UK have indicated that the integration of various ecosystem actors, such as accounting software, freelance work management portals, and mortgage lenders led to the emergence of new opportunities for small firms. Research indicates some Australian banks released free tools to assist small businesses in combining data from several platforms, such as Google Analytics, to obtain important customer insights. This has been primarily targeted at small and medium sized organizations.

In India, several banks—both public and private—announced the need to prioritise open banking platforms. A small number of these platforms are powered by a developer website that makes use of banks' APIs for FinTechs and developers, promoting the growth of a collaborative ecosystem for technology innovations in India. In general consumers benefit from the output of such collaborations since they get more individualised and superior financial services. Certain Indian banks prioritise FinTech developer portals that connect to numerous virtual APIs within a sandbox setting. These capabilities help identify the 'best-fit' sector contextual APIs by enabling corporates, Micro, Small and Medium Enterprises (MSMEs), and startups to test the APIs in a safe environment. Clients from other industries can view a multitude of application-specific banking use cases and discover possible interactions with banks' APIs through the sandbox environment as well. Increased adoptions in India and globally are being influenced by these initiatives to co-create innovations with FinTechs, startups, and the developer community (Corneille, 2020). These initiatives and associations are driven by generic motives of efficiency, innovation, doing good and customer experience enhancements

(Roy et al., 2024). With focus on APIs aligned to open banking, multiple instances of embedded finance across industries are evident and we curate few scaled adoptions to understand the diverse range of solutions and adoptions. **Key global instances span diverse industries:**

- A ride hailing software has integrated financial services along with travel convenience. When using the app, users don't need to open disparate apps to schedule a ride and make an immediate payment. Through the app, drivers may also apply for loans and discounts, receive payment, and receive notifications of payment receipts. Through the app, drivers may also open a bank account. Yet another taxi app allows customers to order a ride and pay with a credit or debit card (Sudharsan, 2023). Through partnerships with banks the solutions provide financial products for cash, direct debit/credit cards, and bank account services.
- A watch manufacturer builds financial capabilities in the wristwatch which can issue tokenized payment cards. A global electric car manufacturer integrated insurance solutions along with vehicles. Insurance is provided to all drivers who buy the vehicle, on the basis of information about the car and its owner or operator. Insurance is governed by driving behaviors.
- From research it is evident that a large online retailer sells credit cards and reward cards as well as other financial products on its platform. The partnership with a bank indicates how embedded finance can promote financial inclusion. By leveraging the retail app, an enormous user base may easily apply for loans or start savings accounts. Yet another retail organization has included other financial services, like insurance and mutual funds, along with 'Buy Now, Pay Later' schemes, to improve the user experience and increase their customer base (Sudharsan, 2023). A social media platform for videos collaborated to add retail features enhancing experience.
- A highly innovative technology organization provides credit cards of its own. Additionally, it lets customers use their phones to make payments both online and offline. With access to customers' financial data the company provides innovative convenience embedding financial services alongside high tech capabilities.
- Study of use cases indicates in Singapore, an app for delivery services also provides insurance, merchant point of sale, and other financial items. This enables bundling of services and complementary consumptions. While a customer purchases delivery of goods they can also book for insurance of goods in transit.
- A major player in the US real estate market launched home loans in 2019 as an extension of its customer service offering. It also branched out into agent and lender services. This highlights how beyond bundling of related financial services there are extensions of value chain of organizations. This leads to many associated opportunities for the organization and customers by embracing embedded finance paradigms.
- To prevent being towed or given a penalty, users can purchase a street parking ticket through GPS technology provider integrating payment service before arriving at parking destinations. Parking purchases alongside map-based navigation helps customers navigate and plan better.
- In Sweden and other nations, increasingly popular e-commerce payment option is the Buy Now Pay Later (BNPL) scheme. BNPL service is made possible through embedded finance (Juniper Research, n.d.).

Global observations across use-cases and instances reveal **3 primary categories of applications: (1) B2C Embedded Finance; (2) B2B Embedded Finance; and (3) Applying to both B2B and B2C simultaneously.** The following section will explore these 3 categories further to include indicative instances in each category (Akcok, 2023).

(1) B2C Embedded Finance instances manifests in varied forms like Comparison Engines, Financing for Purchase and Education; Insurance along with Product/Services; Invest-

ing Opportunities; Bill Payments/Contract Management; Personal Finance Management (PFM); Rewards and Loyalty, Rent to Own Options, Subscriptions and Memberships; Virtual Credit Cards and Prepaid Cards. This primarily focuses on enriching capabilities and experiences.

(2) B2B Embedded Finance instances are observed across Corporate Credit Cards, Financing for Large Purchases; Expense Management, Budgeting and Book-keeping Tools; Supply Chain and Trade Financing; Payment Processing for MSMEs; Invoice Financing and Factoring, Receivables Financing, Working Capital Financing, Equipment Financing among others. These primarily focus on effective and efficient capital enablement.

(3) Applying to Both B2B and B2C Embedded Finance instances are evident across In-App Payment, E-Wallets, Payment Processing, P2P Payment, Gateways, Crowdfunding, and Banking-as-a-Service among others.

14.4. Emergence of Open Banking and Embedded Finance – Globally Aligned Trends in India

Credible estimates indicate that the Indian embedded finance ecosystem is anticipated to expand at a compound annual growth rate (CAGR) of 30.4% from 2022 to 2029 (Research and Markets, 2022). This means that national revenues from embedded finance propositions will rise from USD 4.8 billion in 2022 to nearly USD 21.12 billion in 2029. India's emphasis on open banking is a response to the country's rising need for improved financial services, more competition, more innovation, and broader financial inclusion. This is in line with ideas about getting over obstacles and prevalent challenges in the financial industry.

It is also anticipated that banks in India will need to switch from a sectoral strategy to an ecosystem strategy. In India, banks are moving from separated service offering to embedded banking. The banking of future in India will focus on hyper-personalization with financial services seamlessly integrated across varied consumption value-chains.

Over time, the business models of Indian banks have changed, with a current emphasis on the intermediation paradigm that includes deposit acceptance and credit creation (The Hindu Bureau, 2023). To democratise lending ecosystems, the Open Credit Enablement Network (OCEN) (iSpirt, 2024) was established to support credit product developments. Along with customers' approvals through informed agreements, exchanging customer information has become far less expensive and less risky. This may be attributable to India's state-built national identity database, Aadhaar (Government of India, n.d.) among others. Furthermore, consistent standards for digital payments have been developed by the Unified Payments Interface (UPI), simplifying the financial environment. To promote innovation and competition, Aadhaar also provides banks and fintech organizations with a sandbox in which they may test out cooperative and innovative arrangements. Apart from Aadhaar and UPI, Open Network for Digital Commerce (ONDC) is a revolutionary new idea implemented for democratizing financial services for small and medium businesses. It enables integration of credit, insurance and investment products into services with focus on financial inclusion (ONDC, 2023).

India-specific study reveals that the most common use cases relate to **(1)** Embedded payments—online payment options at places of consumption, **(2)** Embedded insurance, which is insurance bundled in the real time and at the point of consumption addressing diverse needs, **(3)** Embedded investments (integrations into brokerage and/or investing platforms based on APIs), **(4)** Embedded lending (BNPL at points of consumption) and, **(5)** Embedded cards (cards-as-a-service offering). In India, it appears that there are several different versions and application landscapes including business to business, business to consumer, consumer to consumer, and obviously government to consumer (PwC, 2023). In the Indian insurance sector, the embedded insurance concept has become increasingly popular alongside banking. In partnership with insurtechs, embedded insurance is a viable distribution mechanism enhancing scale and diversity of insurance cov-

erage. Contextual insurance products are being developed by travel, mobility, and retail-focused organizations with an increased focus towards India's Tier II and III cities. Account Aggregators (AA) were introduced by fintech organizations in India, and some of them were able to obtain and onboard about a million new applications at a considerable scale (FinBox, 2021). The provision of digital credit channels through collaborations with banks, utilising integrated buy now, pay later (BNPL) and working capital credit solutions, to retailers and business-to-business e-commerce operators is evident across many instances in India. Research across scaled use-cases highlight leverage of embedded finance across various industry sectors in India and is included in the following examples.

- **Application in e-commerce and retail:** E-commerce platforms enabling embedded lending solutions for consumers and MSMEs. In context of B2B marketplace one of the biggest e-commerce platforms in India has teamed with banking institutions to provide MSMEs with embedded loan solutions. Instant financing choices were made possible at the time of consumption by analysing the sales data and transaction history of MSMEs (The Hindu Businessline, 2021).
- **Applications in transportation, mobility, and logistics:** A large ride-hailing organization in India has expanded its offerings to include embedded financing into their customer journey using a digital wallet service. Customers may pay for rides, reserve taxis, and choose ride insurance, which protects against mishaps, thefts and accidents while travelling. Indian nationals can purchase optional add-on insurance when purchasing railway tickets in India.
- **Applications in real estate and property:** A large real estate aggregator website in India demonstrates inbuilt finance capabilities that speeds up transactions and makes financial services possible. The embedded finance capabilities allow customers to search for homes to purchase, sell, or rent. Through the portal, users schedule house services, pay rent, and apply for home loans thereby integrating financial transactions alongside real estate core purposes.
- **Applications in education and EdTech:** In India through agreements with financial institutions, well-known EdTech organizations enable users to explore and enroll in online courses. It allows to pay for classes, access student loans, and keep track of educational spending.
- **Applications in agriculture and rural sector:** Embedded finance is being offered by a top agriTech start-up in India that offers farmers a comprehensive end-to-end solution via a mobile platform that links them with agri-related goods and services. This will make it possible for farmers to use the platform to buy agricultural inputs and obtain financing and insurance (PwC, 2023). Alongside rural markets, MSME enablement relates to reaching out to underserved and marginalized areas. This is an opportunity for Indian banks in terms of both financial inclusion and business value with open banking and embedded finance.

While emerging practices in open banking and embedded finance evolve in India there are diverse perspectives on this. The resistance of conventional banks to open banking is evident as initiatives are mostly experimental or early pilots. There is limited focus to scale and embrace this as a strategic imperative across many conventional financial services organizations, which is a limiting constraint in India. There is limited legal requirement in India for banks or financial services organizations to share customer information with third-party vendors. To maintain direct relationships with their customers, traditional banks in India made an investment in creating their own applications. There may be likely apprehensions that open banking may weaken pricing and branding power since it allows third parties to select banking partners based on contextual parameters including interest rates. This renders financial institutions interchangeable with relative ease and gives rise to more competitive scenarios.

14.5. Evaluation – Benefits, Challenges, and Future Implications of Open Banking and Embedded Finance

1. Benefits: Primary benefit of embedded finance is that it has the potential to raise income for all participants: businesses across all industries will be able to increase or create new revenue streams. The customer experience can be improved by adding a financial services section. Since embedded financial services are now made possible via APIs, any non-financial organization may apply for license and acquire the required regulatory permits to start offering financial services. This implies that banks' monopoly on the provision of financial services may be constrained. Financial services will be available to everyone, including nonfinancial businesses, perhaps leading to wider financial inclusion.

Payment experience is likely to improve with embedded finance. By ensuring that the complete purchase and checkout process takes place at one location, embedded payment enhances the user experience while making payments. Embedded finance can help organizations automate their book-keeping procedures.

Non-financial businesses too can benefit from embedded financial accounting APIs by automating their book-keeping procedures. Non-financial businesses can effortlessly automate their financial records, track payment inflows and outflows, and quickly identify fraudulent activity by integrating financial accounting APIs into their payment processes.

Embedded financial services have the potential to produce valuable customer data that may be utilized to comprehend consumer purchasing patterns and behavior. The competitiveness of the goods and services provided by businesses utilizing embedded financial services can also be raised by these services (Peterson, 2022).

API standardization benefits all actors in the ecosystem. Adoption of API standard goes beyond open banking. Because it is a standard, it is being adopted by the financial ecosystem: Fintechs, core banking, digital banking providers, and vendors of all sorts become compliant. The integration between systems becomes significantly easier. Adoption of standards is likely to boost BaaS and Embedded Finance further. The return on investments on embedded finance is likely to increase with API standardization as likelihood of integrations will become more feasible. This is likely to lead to more value for organizations. These are relevant considerations globally and in India that serve as drivers in growth of open banking and embedded finance.

2. Challenges: A significant issue is that it might lead to confusion over who should be held accountable for breaking regulations due to the integration of financial services. For example, it might be challenging to determine who should be penalized for a data breach involving customers' personal information. To ascertain who is accountable for violating consumer data privacy, regulators will need to conduct rigorous investigations.

Another issue that comes up when a non-financial entity uses its platform to offer bank loans is that the bank is unaware of the borrower of the embedded loans. The bank may find it challenging to run a due diligence on the borrower or even effectively collect loans. The bank whose loan was integrated into a non-financial organization's platform is not in direct contact with the final consumer.

Another dimension of the complex commercial relationship problem is that consumers will be engaging with products or services from two separate organizations enabled via embedded finance. Customers may find it difficult to determine which of the two organizations oversees the various aspects of the product purchase experience, and they may also be unsure of which organization to contact with complaints regarding aspects of the financial product or service.

Data security regulations will present further difficulties. An additional obstacle is that conventional banks might not want to advertise an outside service within the conventional financial system. Banks may lose market share in scenarios where customers prefer financial services and transactions via embedded finance platforms.

Additionally, a lack of cooperation among multiple relevant ecosystem players may impede embedded finance advancements. Decreasing know-your-customer (KYC) and anti-money laundering requirements may be necessary to fully utilize embedded financial services, which could expose enterprises to payment frauds as well (Peterson, 2022) and such decisions require multiple considerations.

3. Future Implications: Numerous encouraging indicators demonstrate why the shift to an 'open bank' will be beneficial for overall economy, organizations and for customers, globally and in India. For instance, a lot of online retailers already incorporate different payment methods into their websites, which greatly expedites the checkout process and lowers the rate at which customers abandon their carts while consumption is likely to increase, and associated organizations generate value in the process. Embedded finance accurately responds to the shifting needs of customers by delivering financial services at the point of need. Embedded finance platform strategy experts predict that the global market for embedded finance would exceed seven trillion dollars by 2030 (Dealroom, n.d.) with similar encouraging opportunities for India.

According to (Poddar, 2024) projection, there will be 132.2 million open banking customers globally. Technological improvements and an increasing focus on user-centric financial solutions are driving dramatic shifts in the growth of open banking APIs in India's fintech sector. The financial services industry is expected to undergo a transformation with the introduction of advanced technologies such as blockchain and artificial intelligence (AI). This will prioritise more transparency, improved security, and customised services. Using open banking APIs to analyse large volumes of consumer data using AI promises previously unheard-of degrees of personalisation.

Financial institutions can provide personalised product suggestions, predictive analytics for saving and spending, and individualised financial guidance. This degree of personalisation signals a move towards more intelligent and responsive financial services by improving user experience while also assisting in accurate risk assessment and financial planning. By integrating blockchain technology with other emerging technologies like open banking APIs, the security framework of digital transactions can be further strengthened. Data sharing is safe and transparent thanks to blockchain's intrinsic decentralisation, immutability, and transparency features. By decreasing fraud and raising mutual trust, this can help to create a more dependable financial transaction ecosystem. Furthermore, blockchain offers a streamlined solution for data protection and privacy, making regulatory compliance easier.

It is a transition for conventional organizations as they embrace the open paradigm. However, the organization's transformations pay off in several ways by utilizing fully digitalized procedures and embracing technology including APIs. Benefits include agility in operations, efficiency and enhanced customer satisfaction while generating value from newer business opportunities. Conventional financial institutions globally and in India will need to continue changing as open banking may open a plethora of new business options as imperatives for transformations. In the future, banks will need to think not just about financial circumstances but also about cross-sector alliances and contextual issues, expanding beyond their usual position. Banks can also serve as industry leaders and serve as critical intermediaries for other sectors, such as energy and transportation driving sustainable transformations. Organizations will leverage upon the advantages of this opportunity since an open data economy is the evolutionary paradigm.

14.6. Conclusion

Although open banking APIs provide great potential, there are several things to keep in mind to make sure they support long-term development.

(1) Data security and privacy: Since open APIs necessitate data sharing, there are security and privacy issues pertaining to users. Robust measures are required to ensure comprehensive data protection frameworks, user consent mechanisms, and stringent security protocols

to mitigate unauthorized access and breaches. In the context of India, this consideration is very pertinent;

(2) Standardisation and interoperability: Consistent API standards and smooth platform compatibility are essential to realising the full potential of open banking. To create and enforce consistent standards through vibrant creative ecosystems, stakeholders—including regulators, financial institutions, and fintech players—must continue to collaborate. API standardisation is emphasised in the G20 report on enhancing global financial inclusion as the primary means of enhancing interoperability for both established and emerging economies (Nugroho and Supangkat, 2023);

(3) Evolving frameworks and regulatory compliance: The regulatory environment pertaining to open banking is dynamic and subject to variation on a worldwide scale. Stakeholders need to be informed about these changes and they must abide by pertinent legislation in order to prevent legal and operational risks. This means that the ecosystem must always adapt and be flexible. This identifies the essential role that regulators play from a national standpoint in using new paradigms of open banking and embedded finance to create macro and micro benefit.

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IV
Strategy and HR

15

Customer Centricity, Digitalization, and Bank Performance

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15.1. Introduction

Technology applications have driven banking adoption but a consumer perspective is essential while examining technology-enabled experiences to ensure that inventive service experiences align with customers' functional, social, and emotional needs (Batat and Hammedi, 2022). Research has shown that the service quality, customer experience, and value delivered to customers positively impact the profitability of banks (Mbama et al., 2018). In India, the Reserve Bank of India (RBI) has encouraged digitalization in banking through guidelines for Digital Banking Units, and FinTech ecosystem creation through initiatives like Regulatory Sandbox.

Indian banks are rapidly adopting digital transformation strategies to enhance efficiency and improve customer experience. The digital space has steered in a new era of accessibility and is allowing customers to opt for varieties of banking services. To remain competitive, banks are embracing digital transformation strategies through collaboration with fintech firms and integrating human interactions with digital experiences. Digitization enables banks to leverage the power of data analytics and artificial intelligence (AI) to make improved business decisions and offer faster custom-made services to clients. This also enables banks to diversify their risks, improve earnings, engage with customers, and enhance brand value in this rapidly evolving banking space. In the realm of banking driven by technology and innovation, building a customer-centric culture has become crucial for profitable business.

The recent RBI Financial Stability Report has mentioned that the Indian banking sector remains resilient and robust. The SCBs balance sheet has expanded in 2022-23 by 12.2%. The growth was driven by credit to the retail and service sector mainly. Indian Scheduled Commercial Banks (SCBs) are well-capitalized and capable of absorbing macroeconomic shocks over one year. In the recent period, the rate of growth of the unsecured retail segment has outpaced total bank credit growth. Consumer credit driven by digital lending platforms has gained momentum with the rising inquiry volumes across product categories. Indian banks are adopting digital transformation strategies to enhance efficiency and improve customer experience. This also enables banks to diversify their risks, improve earnings, engage with customers, and enhance brand value in this rapidly evolving banking space. Recently, there has been a concern about the rise in the cost of liabilities and changing portfolio mix, and it has become necessary for banks and FIs to gauge long-term business sustainability. Establishing robust risk management and governance frameworks and adhering to regulatory standards is vital to building trust and credibility among customers. RBI's Deputy Governor Swaminathan J. has urged the top management of banks to focus on a customer-centric approach

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to strengthen the confidence of people in the banking system. To achieve this, banks need to address customer grievances promptly, streamline grievance redress mechanisms, and leverage technology to serve customers in a better manner.

Against this backdrop, the chapter examines the relationships between customer risks, digitalization initiatives and bank performance in India. Sections 15.2 and 15.3 are devoted to the evolution of digital ecosystems and the need for customer centricity in the Indian banking system. Section 15.4 provides details on the Integrated RBI Ombudsman Scheme. It introduces the customer satisfaction perspective and derives indicators for addressing customer risks. Section 15.5 and 15.6 present bank-level empirical analysis and the main results. Section 15.7 discusses the role of customer engagement, for sustainable business growth, supported by stable and effective digital systems. Section 15.8 concludes the chapter, with key insights and policy recommendations.

15.2. Evolving Digital Ecosystem

Rapid technological progress has ushered in new business opportunities for banks and financial institutions. A speedy transformation is happening in the business landscape of regulated entities. Artificial Intelligence (AI) is transforming the business operations in unprecedented ways. Machine learning, deep learning, natural language processing and Generative AIs are the modern tools available for firms to improve business efficiency and improve customer service. It has enhanced accessibility and inclusivity in banking services. Digital banking has seamlessly integrated into core business operations of the bank.

The recent literature related to the Banking industry suggests that banks are making special efforts to enable inclusiveness on digital banking platforms (Ofori-Okyere et al., 2023). Customers' assessment of the service quality, ease of access, perceived value, and impact on satisfaction has an impact on the profitability of banks (Mbama et al., 2018). Further, research findings suggest that the real test of customers' loyalty is through their willingness to recommend the bank to others. If customers are satisfied, they are more likely to stay with the bank and use additional services and also recommend to others, fostering long-term relationships and thereby contributing to the bank's success. Mishra and Jain (2007) examined various dimensions of customer satisfaction in public-sector and private-sector banks in India. They argue that the satisfaction of customers is an invaluable asset to modern organizations and it may give banks a competitive advantage in business. A high level of customer satisfaction leads to strong customer loyalty. While loyalty has been well-acknowledged as an important attribute for banks, attitudinal loyalty has been a challenge owing to the need for process and content consistency across channels, lack of interaction fluency, and channel transparency (Mainardes et al., 2020).

A better understanding of customers' needs and preferences in the banking domain is crucial to tailor banking services to the customers to better meet their needs. Cotugno and Stefanelli (2022) used customer complaint data published by the banking and financial ombudsman and the financial data of Italian banks during the 2010 to 2017 period to find that higher customer complaints scaled by bank size reduce bank profitability and increase banking risks. Their study findings bring into focus the importance of commercial banks' need to protect relational capital with customers and strengthen dialogue among the compliance function, and complaints office to proactively manage the customer risks and improve their operational performance.

Under the RBI's Integrated Ombudsman Scheme, 2021, customers of scheduled commercial banks can register grievances or complaints through a centralized reference point. The Scheme integrates the existing three Ombudsman schemes of RBI namely the Banking Ombudsman Scheme of 2006, the Ombudsman Scheme for NBFCs, 2018, and the Ombudsman Scheme for Digital Transactions, 2019. The objective of this integrated scheme is to resolve customer grievances speedily and cost-effectively.

In the dynamic world of banking, Current Account and Savings Account (CASA) deposits play a vital role in determining a bank's financial

strength and stability. In this context, understanding customer behavior and financial literacy is crucial to mobilizing these deposits effectively. It has implications on costs and banking profitability. This chapter analyzes the shift in the business profile of banks driven by technology and customer orientation and their linkage with bank performance. It also examines how customer satisfaction, reputation building, and meeting regulatory compliance are linked to banks' business models and performance sustainability. Evaluating customer complaints is crucial for resolving issues and improving customer satisfaction thereby enhancing brand image. In this study, we have explored the importance of customer complaints on bank performance in terms of net interest margin and capital adequacy ratio.

15.3. Customer Centricity – Banking Perspective

A customer-oriented approach in banking can lead to customers giving more business through cross-buying and offering positive word-of-mouth (Mukerjee and Shaikh, 2019). Customer centricity involves a proactive focus on the emerging needs of customers and quick responsiveness towards them. The digital journeys undertaken by bank customers suggest that service providers like banks need to ensure top-of-mind recall of their brands during technology-facilitated decision-making by digital customers (Fuller et al., 2023). When customers use digital banking, the experience is judged not just from a utilitarian perspective but also for the hedonic aspects. Banks are also focusing their attention on the emotions evoked in customers as a result of interactions through digital channels. The financial services industry has witnessed intense competition, particularly in recent times owing to the increased number of digitally savvy small finance banks and fintech firms. In the current context, digitalization has enabled quick access to banking services through alternate delivery channels like mobile apps, websites, ATMs etc. Customers enjoy easy and quick access but banks also need to adopt customer centricity in order to ensure:

- The specific needs of individual customers are understood accurately.
- Personalized solutions are offered to individual customers at affordable costs.
- Value-added, personalized services are offered by banks to help individual customers fulfill their goals and achieve well-being.

In the phygital world (physical + digital), customers can easily access services through a multitude of service firms (including banks) and through online as well as physical channels. The service standards followed by digitally savvy service firms have resulted in raising the expectations among bank customers. Therefore, the service standards followed by banks are now compared with various other service firms that are not banks. With regard to e-service quality in the context of the Indian banking industry, research has shown that reliability and ease of use are the most impelling factors in determining e-service quality (Agrawal et al., 2022). The e-service quality factors tested by Agrawal et al. in their study included: reliability, ease of use, personalization, security and trust, responsiveness, website aesthetic, efficiency, contact, and customer fulfillment. Whenever customers interact with banks, the service quality is assessed based on their initial expectations, and shortfalls result in dissatisfaction as explained by the expectancy disconfirmation theory. Research shows that when the expectancy norm is violated, service failure can result in customers switching their business to other banks (Zhao et al., 2023). Expectancy violations prompt customers to register complaints against banks that fail to live up to the service standards expected by customers. Further, customers have been known to spread negative word-of-mouth through social media platforms thereby adversely impacting the brand equity of the bank. Other social media users can engage in vengeful behaviours by sharing these posts through various online channels. Hence, banks need to take customer complaints with earnestness and make efforts to address them at the earliest opportunity.

15.4. RBI-Integrated Ombudsman

The Reserve Bank of India's Ombudsman system addresses customer complaints promptly and without any cost. The regulator has now

integrated its three earlier Ombudsman Schemes named a) the Banking Ombudsman Scheme, 2006, b) the Ombudsman Scheme for Non-Banking Financial Companies, 2018 and c) the Ombudsman Scheme for Digital Transactions, 2019 into one scheme: The Reserve Bank of India Integrated Ombudsman Scheme, 2021 with effect from November 12, 2021. It has simplified the grievance redress process and enabled customers of banks to register their complaints regarding deficiency in service at one centralized reference point. The idea is to quickly resolve customer complaints in a cost effective and satisfactory manner. Thus, customer redressal system has moved from a regional level to a centralized format as the digital penetration deepened in the banking and financial system. Internal ombudsman has been transitioned to integrated ombudsman.

RBI has set up a 'Committee for Review of Customer Service Standards in RBI Regulated Entities (REs)' on May 23, 2022, to strengthen the complaint redressal mechanism and ensure consumer protection. This is indicative of the importance given to customer protection and fairness. The best-performing banks focus on understanding and meeting the diverse needs of their customers by providing personalized and innovative banking solutions. As per the RBI trends and progress report of banking in India, during FY 2022-23, the number of complaints received under the RBI-Integrated Ombudsman Scheme (RBI-IOS), there is an increase in number of customer complaints by 68.24% due to simplification of procedures (total count in FY 2022-23 was 7,03,544 vs. FY 2021-22 count of 4,18,184). This is for the entire financial system under the RBI-IOS.

The five most important categories of complaints are 1) loans and advances, 2) mobile/electronic banking, 3) deposit accounts, 4) credit cards, and 5) ATM/debit cards. These complaints have increased from 54.7% during 2021-22 to 85.8% during 2022-23. For both Public Sector Banks and Private Banks, complaints regarding ATM/debit cards/credit cards constituted the greatest share during 2022-23, followed by mobile/electronic banking grievances. During FY 2022-23, the total number of complaints recorded by the Banking Ombudsman was 1,75,908 (combining public sector as well as private sector banks). In 2021-22, this number was 2,41,300. It can also be seen from Table 15.1, based on the RBI Annual Report of Ombudsman Scheme, 2023, that all banking groups have improved their customer complaints conversion rates. The complaint conversion ratio shows the proportion of complaints received against the concerned banking groups by the Offices of the Reserve Bank of India Ombudsmen (ORBIOs) vis-à-vis the total number of complaints received at the respective bank groups from their customers. A lower ratio indicates better performance.

TABLE 15.1

Complaint Conversion Ratio

Group	*2020-21*	*2021-22*	*2022-23*
Public Sector Banks	2.11%	1.93%	1.28%
Private Sector Banks	6.07%	3.51%	2.76%

Source: RBI Annual Report of Ombudsman Scheme, 2022-23.

Further, the ORBIO figures reveal that there is a sharp reduction in the number of complaints unresolved beyond 30 days from 0.26% during March 2022 to 0.04% on March, 2023. It is important to note that service quality is becoming a significant determinant of customer satisfaction in the Indian banking industry.

15.5. Empirical Analysis

To examine if there is any relationship between customer complaints and bank performance, we have devised a panel regression model that uses net interest margin (NIM) as a proxy of bank performance as a dependent variable. We have adopted fixed-effects panel regression methods consistent with the empirical literature concerning the determinants of bank profitability and performance (Bikker and Vervliet, 2017). A panel data of 31 banks (public sector as well as private banks) over the years 2018 to 2023 has been utilized to examine the importance of customer satisfaction on bank performance. Customer complaints figures for Indian commercial banks for the sample period has been obtained from the RBI database (statement of complaints received at RBI Banking Ombudsman office).

TABLE 15.2

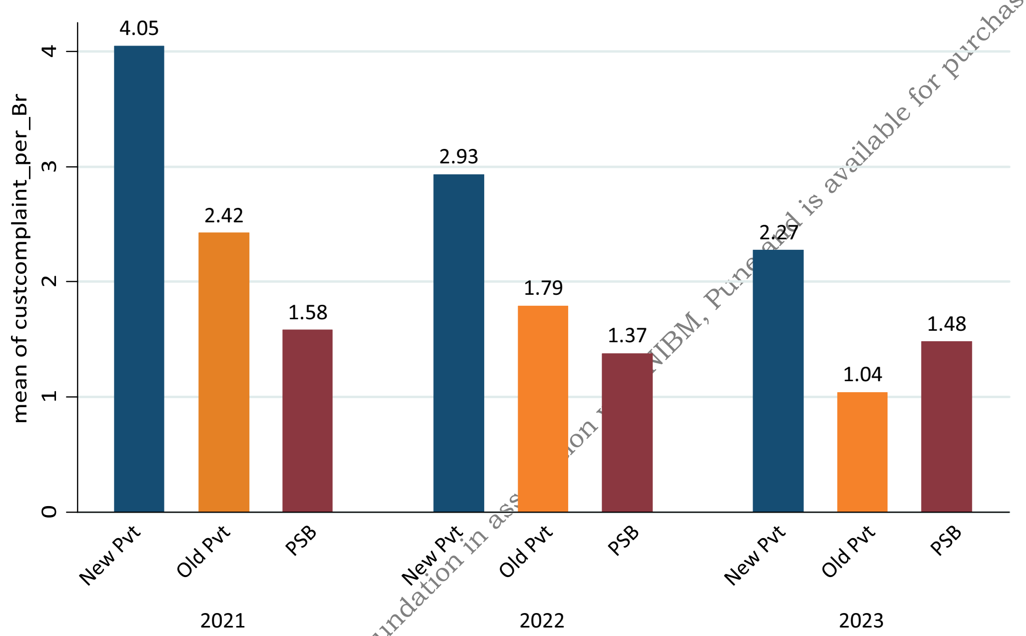
Customer Complaints per Branch across Banking Groups, 2018-2023

Banking Group	*Group Category*	*Mean*	*Std. Deviation*	*CV*	*Number of Obs.*	*Rank*
Public Sector Banks	3	6.92	15.47	2.23	64	1
Old Private Sector Banks	1	10.72	20.09	1.87	52	3
New Private Sector Banks	2	4.46	6.010	1.35	57	2

Source: Based on bank-level panel data collated by the authors for the period: 2018 to 2023.

FIGURE 15.1

Banking Group-wise Extent of Customer Complaints



Source: Based on the authors' compiled panel data from RBI Report on Trend and Progress in Banking (several issues).

Here we present the key results and discuss the major outcomes of the study.

A Brown-Forsythe's ANOVA test (using robnova in STATA) further confirms that there is a significant statistical difference across the group categories (F=2.775 with df1=2, df2=89.735 and p=0.06).

During 2021 and 2022, the RBL bank had the highest number of customer complaints per branch (>14). The same bank has also obtained the highest rank during FY 2022-23 (>6).

In FY 2022-23, the top five banks in terms of intensity of customer complaints (in proportion to their number of branches) are 1) RBL Bank Ltd., 2) Kotak Mahindra Bank, 3) IDFC Bank Ltd., 4) ICICI Bank, and 5) Axis Bank Ltd. HDFC Bank is in the 7th rank. The State Bank of India is at the 10th position in terms of complaints intensity. Interestingly, in the year 2016, a customer satisfaction survey was conducted by ACSI. All these banks received customer satisfaction scores in the range of 68 to 71. Figure 15.1 presents the comparative position of banks with regards to the extent of customer complaints per branch.

Research on digital banking shows that banks need to use suitable technologies like cloud computing and enhance system security aspects like privacy, integrity, and digital signa-

tures to ensure customer satisfaction (Li et al., 2021). Satisfied customers are also more likely to recommend the bank to other customers. A higher customer satisfaction score implies a greater level of happiness and a lower level of customer complaints. The survey was carried out in 2015-16 by Hexagon Consulting and the US-based American Customer Satisfaction Index (ACSI). The data was based on around 7000 customers of 12 banks across the country. The average customer satisfaction score of Indian banks (ICSI) was 65 which is much lower than the US (72), UK (67), and Singapore (74).

15.6. Customer Grievances Trends

From the recent trend (refer to Figure 15.1), it is observed that the level of complaints is relatively higher in new private sector banks in comparison to public sector and old private banks. While the newer banks have invested heavily in digital technologies for facilitating digital banking, the service systems need to be designed in order to ensure fulfilment of customer needs and constant tracking of the service outcomes. There is also a falling trend per branch with respect to complaints. It is logical that the volume of customer complaints will have implications on bank performance. Further, with respect to profitability of banks, net interest margin (NIM) measures the difference between the interest income generated by a bank and the amount of interest paid out to their lenders. It is typically expressed as a percentage of their earning assets. The NIM is a critical measure of a bank's interest-related profitability performance. The non-interest income plays a complementary role in overall revenue generation as well as risk management. Changes in customer behavior (e.g., adoption of digital banking services) can influence both interest and non-interest income in banks. Therefore, it is in the interest of the bank to promote digital banking usage while ensuring a high level of service quality to ensure customer satisfaction.

In this study, we have empirically investigated if there is any influence of customer complaints on bank performance. A bank-level panel fixed effects regression has been carried out to measure the impact. The regression results are presented in Table 15.3. Heteroscedasticity robust standard errors and related t-statistics are also reported.

The variable LBUSINESS captures bank size, and it is estimated as a natural log of the total business (credit and deposits) of banks. The factor CUST_COMPL_BR represents the number of customer complaints in a year in a bank divided by the number of branches. Three group dummies (OWNGRPD1-OWNGRPD3) have been used to capture bank ownership effects. It captures the bank-level fixed effects. The year dummies capture the year-specific effects. These are the intercept dummies. To avoid a dummy trap, one dummy has been dropped and other dummy coefficients are compared.

It is quite evident from Table 15.3 results that an increase in the number of customer complaints per branch significantly reduces the bank's net interest margin. Thus, the risk of higher customer complaints due to lesser customer satisfaction with bank services (mainly driven by problems encountered in banking services) has a statistically significant influence

TABLE 15.3

Panel Fixed Effect Regression on Bank NIM

Dependent Variable=NIMit			
Independent Factors	*Coefficient*	*t-statistics*	*P>|t|*
LBUSINESS	-0.00021	-0.71	0.480
CUST_COMPL_BR	-0.00012	-3.85	0.00***
OWNGRPD1-OldPvt.	-0.0057	-2.47	0.015**
OWNGRPD2-NewPvt.	Dropped	---	---
OWNGRPD3-PSB	-0.0142	-7.13	0.00***
YRD1-2018	-0.0048	-1.82	0.071*
YRD2-2019	-0.0034	-1.26	0.211
YRD3-2020	-0.0023	-0.92	0.361
YRD4-2021	-0.001	-0.54	0.588
YRD5-2022	Dropped	---	---
YRD6-2023	0.0030	1.39	0.166
Intercept	0.0458	8.19	0.00***
Number of Observations	173		
F (k, df)	17.96***(9, 163)		
Prob>F	0.00		
R-squared	0.337		

Note: The symbol *** indicates statistical significance at 1% or better; ** indicates the level of significance between 1% to 5% and * signifies statistical significance at 5% to 10% level.

Source: Authors' estimation.

on bank performance. The above regression result also reveals that group ownership matters in determining bank NIM. Old and Public Sector Banks have significantly lower NIM than their private sector counterparts.

In another regression model, we have examined the impact of customer complaints intensity on overall banking risk. For this, we have taken capital to risk-weighted assets ratio (CRAR) as a measure of banking risk. A higher ratio indicates a greater level of solvency and a lower level of banking risk. On the other hand, a lower CRAR indicates a greater level of banking insolvency risk. A panel fixed effect regression model results with group dummies and year-specific intercept dummies with robust standard errors are presented in Table 15.4.

The variable LBUSINESS captures bank size, and it is estimated as a natural log of the total business (credit and deposits) of banks. The factor CUST_COMPL_BR represents the number of customer complaints in a year in a bank divided by the number of branches. Three group dummies (OWNGRPD1-OWNGRPD3) have been used to capture bank ownership effects. It captures the bank-level fixed effects. The year dummies capture the year-specific effects. These are the intercept dummies. To avoid a dummy trap, one dummy has been dropped and other dummy coefficients are compared.

Table 15.4 provides empirical evidence that an increase in customer complaints can reduce bank solvency and enhance banking risk. Further, we find that relatively lower-sized banks need to keep higher capital adequacy to minimize banking risks. Further, ownership dummies significantly influence the capital adequacy ratio of banks. Newly opened privately owned banks are relatively keeping greater CRAR than the PSBs and old private banks.

TABLE 15.4

Panel Fixed Effect Regression on Bank Capital Adequacy Ratio (CRAR)

Dependent Variable=CRARit			
Independent Factors	*Coefficient*	*t-statistics*	*P>|t|*
LBUSINESS	-0.003	-1.80	0.074*
CUST_COMPL_BR	-0.00054	-3.01	0.00***
OWNGRPD1-OldPvt.	-0.0479	-2.56	0.011**
OWNGRPD2-NewPvt.	Dropped	---	---
OWNGRPD3-PSB	-0.072	-4.30	0.00***
YRD1-2018	-0.0236	-1.72	0.087*
YRD2-2019	0.0032	0.11	0.911
YRD3-2020	-0.0215	-2.41	0.017**
YRD4-2021	0.0091	0.55	0.582
YRD5-2022	Dropped	---	---
YRD6-2023	0.0038	0.40	0.689
Intercept	0.261	8.37	0.00***
Number of Observations	171		
F (k, df)	8.56***(9, 161)		
Prob>F	0.00		
R-squared	0.179		

Note: The symbol *** indicates statistical significance at 1% or better; ** indicates the level of significance between 1% to 5% and * signifies statistical significance at 5% to 10% level.

Source: Authors' estimation.

15.7. Discussion

In order to ensure the reduction of customer complaints (particularly for digital banking), banks need to take a proactive technology readiness approach. This involves studying the motivators and inhibitors among customers using digital channels for banking. Accordingly, banks need to ensure increased control, flexibility, and efficiency for customers while using digital banking (Blut and Wang, 2020). The reasons behind feelings of discomfort, insecurity, and lack of privacy among digital banking customers need to be identified and addressed appropriately. Customers experiencing discomfort while using a bank's technology may shun the bank's digital channels and even discontinue the relationship with the bank. It should be noted that the high degree of usage of alternate (i.e., digital) channels has resulted in reduced direct (face-to-face) interactions between the bank's staff and customers. The engagement/attachment between banks and customers is adversely impacted owing to the lack of engagement/attachment. Innovative methods (using digital interactions) need to be adopted to enhance the engagement between banks and customers. To foster digital customer engagement, banks need to initiate the practice of digital customer orientation.

The challenge involved in the practice of digital customer orientation by banks is to first over-

come the legacy systems by adopting suitable flexibility to make investments in understanding the evolving digital customer. Further, the digital systems should help to enable customized product-in-use experiences of such customers, facilitate the process for delivering customer value, and also focus on the profitability of serving digital customer segments (Kopalle et al., 2020). Digital customer orientation should enable banks to combine technology and marketing initiatives to create personalized content/offers for customers that will ensure value alignment and lead to customer satisfaction. The successful digital transformation by banks like DBS Bank suggests that due focus needs to be given to the cultural elements and foster a digital-oriented culture in the bank. Further, while banks have installed digital systems for facilitating transactions through duly laid down processes, today's highly demanding customers require that digitalization goes beyond standardized processes and enables dynamic personalization based on the changing contexts of individual customers (Huang and Rust, 2017).

In the digital context, customer engagement is concerned with the interactions between banks and customers facilitated by digital channels. Engagement goes beyond the transactions and is majorly about cognitive, affective, and behavioural engagement. The creation of online brand communities can help in fostering customer engagement with banking brands. The online brand communities are characterized by customer-customer interactions as well as bank-customer interactions. The interactions that customers have with others on brand communities translate into social value. Further, the knowledge gained by customers through experience sharing by other customers can help them make decisions about the purchase of banking products. The risk of product purchase can be alleviated through discussions in online forums. Bankers can also play a role in guiding customers by recommending the best products that suit their specific requirements. In order to foster cognitive customer engagement, well-differentiated personalized customer value propositions need to be offered through digital channels. In order to show the affective bonding between the bank and customers, personalized greetings can be sent to customers on special occasions and events. Bank employees can show bonding through selfies taken with valued customers who have given high ratings for products and shared positive word-of-mouth on social media. Finally, behavioural engagement is concerned with personalized offers for customers based on their life events, historical transactions, goals and contextual circumstances (e.g. customer who has availed housing loan can be offered home furnishing loan, home insurance, home interior planning services, etc.). To enhance share of wallet among customers, contextualized offers can help in promoting cross-selling. Customer engagement can lead to brand trust and commitment whereby customers have been known to indulge in cross-buying additional products from the bank.

Banks can deploy smart and intelligent service systems with embedded artificial intelligence applications to track digital channels in real time. Banks need to deploy the latest technologies (e.g., robots, smart self-service systems, metaverse, immersive technologies) that are well-connected and intelligent. Therefore, when failures occur, the system can get into a self-healing mode and undertake necessary corrective actions facilitated by the Internet of Things (IoT). The systems can also enable customers to get involved in co-creating a service recovery. When customers participate in solving service-related problems, they are likely to feel more engaged through active participation. It is essential for banks to capture and store data related to customer transactions and service operations. The analysis of the data can help provide deep insights about the bank's customers. In order to facilitate data-driven decisions and customer recommendations, it is essential to create 360-degree views of customers. This data needs to be supplemented with the outcomes of digital customer engagement that will provide rich inputs related to the life events and goals of customers, their current contexts, and their interactions with other customers on online brand communities. Natural language processing tools can be deployed to interpret the sentiment that customers carry about the bank's products and services. Fur-

ther, the specific issues related to service quality that are irking customers can be identified through analysis of the comments given by customers about the bank on social media and online communities.

Perhaps it is time for banks to tackle the huge disruption in the industry by increasing their skin in the game. Banks can plan to fulfil more goals of their customers through suitable tie-ups. For example, State Bank of India's YONO app provides access to a wide range of services. In order to create opportunities for enhancing the relationships with a chosen segment of customers, banks need to focus on creating superior value propositions that will wow these customers. It can start with basic questions like: What are the aspirations of an individual customer? How can the bank help fulfil these aspirations at affordable costs whereby the bank also gains in terms of profit and reputation? By solving these puzzles using suitable technology-enabled solutions, the bank can stand to get an advantage in a highly competitive marketplace.

15.8. Conclusion

It is suggested that Indian commercial banks need to emphasize firming up dialogue among the compliance function, complaints office, and business areas to proactively manage the risk of customer complaints and enhance performance. We have empirically observed that an increase in customer complaints per branch will hurt the bank's performance measured in terms of net interest margin. It also increases the overall banking risks. The effective management of complaints may require a greater amount of organizational costs (due to a higher amount of qualified employees to deal with the problems, higher quality controls, and legal procedures). We have also found that ownership patterns of banks also affect the extent of customer complaints and bank performance. We find strong empirical evidence about a link between customer complaints management and bank performance (in terms of NIM). In our analysis, we have considered proportion of customer complaints reported to RBI Ombudsman relative branch numbers of banks as a proxy for customer centricity. However, one can also consider business variables like number of ATMs and mobile banking growth as representative of customer centricity. Our empirical results confirm that customer complaints risk has implications on bank profitability as well as capital adequacy. There are loss implications due to greater number of customer complaints which may lead to additional capital requirements for banks. The Reserve Bank of India (RBI) has also recently urged the banks to focus on improving customer services. In order to boost business confidence and sustain profitability, banks need to focus on the reduction of customer complaints (due to ATM malfunction, system downtime, frauds and more) by providing positive experience and building long-term relationships. We have highlighted this important aspect in our chapter. Better customer service can be provided through intelligent service systems that ensure positive customer outcomes; second, the analysis of customer data can help to build personalized offers for customers. When customers purchase multiple products from a bank, it strengthens their loyalty towards the bank and also increases profitability from the bank's point of view.

Similarly, complaints reported by the customers hurt bank capital due to reputation loss and reduced CRAR. Our empirical results support the importance of stakeholder theory (Freeman, 1984) since customer relationships matter in determining bank performance. Banks that can address customer complaints more efficiently have better performance in terms of net interest margin and experience greater profitability. They will also have lesser reputational losses and greater solvency. This is becoming more relevant during the digital age of banking. In the current context where robots and digital technologies are a natural part of the service experience, the customer experience will need to be tailored to suit the goals and preferences of the individual customer. Banks have an important role in improving customer experiences, organizational outcomes, and societal well-being by enhancing competencies for co-creating service within and across the digital, physical, and social realms (Bolton et al., 2018). Through these initiatives, the banks will be able to enhance their profitability while minimizing the risk and sustaining business performance.

Generative AI using multivariate model can analyze customer data and preference and thereby can enable banks to better address customer requirements/issues. For example, GPT-4o supports multiple capabilities through audio, vision and text generation which can better manage customer redressal mechanisms, for instance, by answering customer complaints. ChatGPT-4 can generate efficient and effective management responses and can thus add to operational efficiency.

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16

Addressing the Performance Binary

Continuous Feedback and New Ways of Working[1]

B. Ashok | Shomi Srivastava

16.1. Introduction

Performance management is a sine qua non of organizational effectiveness. It plays an important role in individual and organizational development. Undoubtedly, performance management system is at the centre of all organizational activities related to people. It is a process to assess the current level of performance and to determine the present and required sets of skills and attitudes of people at a workplace. Performance appraisal and feedback are vital components of a performance management system. Individuals are communicated of their performance goals in their Key Result Areas (KRAs) right at the beginning of the assessment period. The goals/KRAs are ideally finalised as agreed between the appraisee and appraiser, keeping in view the broader organizational/business objectives in mind. However, the practice of imposing performance goals on the appraisees without due discussion and consultation still continues in many transaction-oriented organisations. Periodical review or assessment sessions are conducted primarily to provide feedback to the individuals about how they have been performing and what corrective steps are needed to improve the performance, etc. These periodical reviews culminate in the year-end performance assessment which leads to decisions on reward and recognition, continuance, or severance.

Questions have been raised about the efficacy of the yearly assessment system in achieving the organizational objectives. Does the performance management exercise really add value to the individual as well as the organization? Despite the time and effort being invested in the exercise of performance management, the results do not appear to be fully satisfactory. A major drawback of the yearly performance appraisal system is that management is not able to identify, articulate, and fix the issues related to the potential of an individual's behaviour by the year-end exercise. Though connecting the dots from past would facilitate addressing the individual and group performance issues, the emphasis appears to be on giving incentives or otherwise to an individual based on their performance or lack of it. This paradigm of binary in respect of individual performance is fraught with many drawbacks. Organizations miss the opportunity to capture the valuable lessons from the past happenings. The BANI (brittle, anxious, nonlinear, and incomprehensible) environment in which the business organizations are working calls for a more aligned and nuanced approach to the process of performance management. The current system of rigid assignment of scores for various segments of performance both quantitative and qualitative, as in the case of Public Sector Banks for instance, needs to be critically revisited for achieving greater convergence of business and employee engagement strategies. If the environment compels the organizations to be agile and demands them to revisit their business

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strategies periodically, relegating performance management to a routine year-end binary task would never help to achieve such a convergence. Flexibility, agility, innovation, creativity, problem solving, team work and collaboration have been widely accepted as the skills most in demand to face the emerging challenges. But the current binary approach to performance management does not meaningfully address these critical skills. Organizations, however, are now realizing the fact that the performance management system relying on the routine year-end exercise is not contributing to any value addition either to the appraised or the organization.

Does the traditional performance management system help in achieving the performance objectives? Does it address the skill gaps to mitigate the low-performance risk? How are the behavioural and managerial dimensions defined and measured in the process? Has it been focussing only on business aspects and thereby ignoring the managerial and behavioural drivers of performance? Is it capable of distinguishing group vs individual performance? Is the performance management system adaptive enough to accommodate changes in business strategies? This article puts forward continuous feedback as a solution to addresses these shortcomings. The ensuing discussion, however, is only in the context of banks in India.

The chapter is structured as follows. Section 16.2 compares the traditional Performance Management System (PFS) with the proposed Continuous Feedback System (CFS). It conducts two empirical studies, to assess the impact of CFS on performance Section 16.3. Section 16.4 concludes with the suggestion that in addition to CFS, organizational support also contributes to performance improvement. The chapter recommends that a hybrid approach, which complements PMS with CFS, may be the way forward.

16.2. PMS in Perspective

To put the argument in perspective, a comparison between the traditional performance management system (PMS) and continuous feedback system (CFS) has been tabulated in Table 16.1.

Performance management system in public sector banks being in existence from 1970's has been a conventional year-end exercise. Performance of individuals is being measured separately for budgetary and non-budgetary roles. Business dimensions, managerial dimensions, qualitative aspects of business, and outstanding performance are the four components of performance measurement, by and large. However, certain forward-looking changes are being introduced by some of the public sector banks in their PMS, of late. The system that exists by and large assigns identical KRAs to individuals across verticals and levels. A structured competency mapping exercise which is the precondition for arriving at the KRAs expected from various positions/levels has been absent in most of the banks. However, since the beginning of the current millennium, competency mapping exercises are being undertaken by the banks resulting in more systematic identification of job expectations/KRAs. This in turn

TABLE 16.1

PMS vs CFS

PMS	*CFS*
Performance assessment is conducted as an year-end activity	Performance is assessed on a continuous, real time basis
Backward-looking in nature	Forward-looking and considers future competency requirements
Feedback communication is one-way	It is a partnership dialogue to develop people
Does not lead to employee engagement	Employee engagement is the core of feedback
Breeds distrust and cynicism towards the organization	Develops a sense of belongingness towards the organization

Source: Authors' classification.

has highlighted the need for a more structured and meaningful performance evaluation process. Generally the following weightages are assigned to the performance parameters which are broadly divided into budgetary and non-budgetary roles.

Weightages for budgetary positions:

- Business dimensions – 40%
- Managerial dimensions – 30%
- Qualitative aspects of business – 20%
- Outstanding performance – 10%

Though the system has been almost rigid, especially in terms of the weightages, banks are now realising the importance of a more dynamic and realistic performance evaluation system where such weightages and scores are amenable to change as per the KRAs and role expectations. In the conventional system, the performance appraisal has been more of a mechanical approach wherein the scores of all the performance dimensions is added to obtain a score out of 100. There has been little or no scope for any qualitative feedback in the system.

Top-Down vs Bottom-Up Approaches to Budgeting

Business targets assigned to positions are perceived to be imposed on them in the top-down approach which results in not so encouraging responses from the incumbents. In imposed targets, the superior assigned targets to individuals without much consideration of the individual. At the same time, an upfront mutual agreement between the appraisee and appraiser over the business budgets has been observed to be contributing to better results. Towards this end, the management needs to adopt a consultative approach with the employees while assigning business budgets. The consultative approach facilitates a constructive dialogue between the appraisee and appraiser for arriving at a mutual understanding of the expectations. This calls for a partnership approach between the appraisee and the appraiser and a well-structured organizational mechanism is necessary to facilitate such partnerships.

Year-end Exercise to Continuous Feedback

The appraisal process in organizations is known as 'annual performance appraisal' exercise. Further, it is also treated as a confidential appraisal system. People will be given feedback on how they scored, once the exercise is over. There is no room for providing any feedback on the plusses and minuses of the individuals' performance, making the whole process a post-facto exercise. A more progressive and meaningful approach would entail continuous communication and feedback about performance leading to addressing the development needs on real time basis. An ongoing appraisal blended with continuous feedback will help people to address their performance and skill gaps simultaneously. We can safely conclude that a continuous feedback and appraisal will be beneficial both for the individual and the organization.

From Fault Finding to Developing Talent

Long-term employment and loyalty towards one's organization were treated as individual virtues till recently. As people remain with an organization for their entire career, reward and incentives and retaining bonuses were not considered as important by the managements. People were looking for their retirement benefits, notwithstanding how adequate they were. The traditional performance appraisal exercise evolved as mere fault-finding exercises where the individuals were castigated for not reaching the business budgets. Favourable placements and/or career advancements were only offered to people who could get through the system unscathed. However, with the opportunities created in the more liberalised and business-oriented economy, more career options are available to people and hence retaining talent has become a challenge for the organisations. A shift, albeit slow, is happening in the orientation of performance management system from fault finding to developing people. The new emphasis is on designing the performance management system to facilitate developing and retaining talent.

Top-Down and Bottom-Up Feedback

While the discussion we had so far on performance feedback centred around the top-down evaluation mechanism where the managers evaluate the performance of people reporting to them, we should also spare some time to appreciate the importance of managers receiving feedback from the juniors as well. Bottom-up feedback is a relatively new idea as far as management praxis is concerned. Significant progress has been made in this area with the introduction of interventions like 360-Degree feedback, etc. Such interventions however may not be feasible on a real-time basis and a certain time lag could not be avoided in providing feedback. The authors have observed that in 360-Degree exercises, the respondents in junior levels tend to be tentative in offering their feedback on managers. It is perhaps due to the lack of organizational support that this lack of confidence in providing feedback to managers exists in their minds.

The questions therefore we are trying to explore in this chapter are:

(i) Does continuous feedback irrespective of the positions, managerial or otherwise within the organization, have any significant impact on performance?

(ii) Does the perceived organizational support strengthen the continuous feedback mechanism?

16.3. The Current Study

Two studies have been conducted by the authors to see the difference in performance improvement at the task level, when continuous feedback was provided in comparison to feedback provided on completion of the task and also the role of perceived organizational support in strengthening the performance feedback.

Study 1: Continuous Feedback and Performance

Literature Review

Feedback to the superior/leader by subordinates may be an important mechanism to improve the leadership qualities of superiors. At workplaces, feedback provided to subordinates by superiors (known as downward feedback) is widely prevalent. At the same time a feedback mechanism from subordinates to the superiors is almost absent. But updating oneself about the performance through feedback has a pivotal role in enhancing leadership effectiveness. Though the same manager is getting feedback from his/her supervisor, these feedbacks are more or less on positive or negative aspects of his own performance. However, a large chunk of weightage of managerial effectiveness is contingent on the translation of the business strategy to action through subordinates. It is in this background that the efficacy of receiving feedback from the juniors assumes greater significance. It is ironical that such an important aspect of feedback is completely missing in many an organizational context. Information and knowledge about the result of one's own efforts from his/her subordinates is not generally available to a manager. Hence, only feedback from the superior is getting immanency to managerial and organizational effectiveness (Smither et al., 1995). The feedback to superiors is part of the 360-Degree process which has been considered effective in leadership and organizational development (Waldman and Atwater, 1998). Having importance attached to such a feedback, some research been done in this area to observe its dynamics. Bernardin, Hagan, Ross, and Kane (1995) found that feedback from subordinates helped to improve the performance of their leaders. Locke and Latham (1990) advocate that feedback is important for positive changes in individual performance. According to Carver and Scheier (1982), feedback from juniors which sometimes indicates poor leadership practices serves as a signal for the superior to match the expectations by working on the behavioural deficiencies. Research has indicated that managers who had received feedback from subordinates have improved their performance in comparison to managers who had not received such a feedback (Reilly, Smither, and Vasilopoulos, 1996). Subordinates' feedback has elements of managerial dimensions (Van Velsor and Leslie, 1991). These managerial dimensions are instrumental in achieving business indicators /performance output. Along with team orien-

tation, leadership skills, communication skills, and ethical aspects, these managerial dimensions also have orientation towards delegation, developing subordinates, counselling, etc. Subordinates can give either a very individualized feedback as a part of organizational mechanism or it can be given as an average rating by a group of subordinates. There will be a different impact of these feedbacks on performance improvement efforts on the superior. Feedback from subordinates also helps to correct the self-appraisal of managers (Halverson et al., 2007). Auteri (1994) suggested that feedback from subordinates helps to improve managerial effectiveness. Feedback from subordinates can be used for developmental objectives and for administrative decisions (Seifert, Yukl, and McDonald, 2003). Van Dierendonck, Haynes, Borrill and Stride (2007) found improvement in the quality of leadership as a result of feedback from subordinates. Walker and Smither (1999) also found improvement in managers' performance because of upward feedback. Kluger and DeNisi (1996) opined that assigning target or taking administrative actions might be a mediator to decide the effectiveness of upward feedback. Use of upward feedback whether for developmental or administrative interventions will influence the feedback which the appraiser gives and how the appraisee receives the feedback.

To see the impact of continuous feedback from subordinates on the performance of superiors an experimental study was conducted through carefully formed experimental and control groups.

Method

An experimental study was organized to see the impact of continuous feedback by subordinates to improve the performance of the superior. Two groups were created: Group 1, which was given continuous feedback by subordinates on a particular task, and Group 2, which was not given continuous feedback but feedback was given by subordinates at the end of the task. Group 1 and Group 2 were further sub-divided into 10 sub-groups with each sub-group having five members. Performance was observed at the end of the task of sub-groups of both the groups. The experiment helps to see the performance differences of groups who are given continuous feedback and groups who are not given any continuous feedback (feedback was given at the end of the task). Based on this the following hypothesis is formed:

Hypothesis 1: Groups receiving continuous feedback will perform better than groups receiving feedback at the end of the task.

Study Design

A task was designed for continuous feedback process. Respondents were asked to put marbles in a vessel through pipes provided. Distance measured from starting point to the place where a vessel was kept was 10 meters. Each group was having five-member team with a leader and four other members. A leader in a group was superior and other four members were reporting to him/her. Leader was responsible for creating a strategy to achieve the goal, implementing the strategy, and revising the strategy to win the game. Time allotted to each group was 15 minutes for the task. In 15 minutes, each group had to put maximum number of marbles in the vessel through the pipes provided. Each team's score was counted and team which could put the maximum number of marbles will be declared winners. In Group 1, continuous feedback was provided by subordinates to the superior (leader of the group) to improve the group's performance. There was no structure to the feedback. Whatever helped improve the performance at that instant was exchanged between subordinates and leader (superior). In Group 2, no such feedback was exchanged between the superior and the subordinates while performing the task on hand.

Subjects

There were one hundred participants for the game; 20 participants played the leadership role and 80 participants played the reporting role. The average age of leaders was 40 years with 15 years of working experience. The reporting juniors had an average age of 30 years and average work experience of 8.5 years. These 20 superiors and 80 juniors were randomly assigned to Group 1 and Group 2. Group 1 was the experimental group in which leaders of the

TABLE 16.2

Group Statistics on Performance Scores

Group Statistics					
	Group	*N*	*Mean*	*Std. Deviation*	*Std. Error Mean*
Performance	Group1	15	3.1333	1.06010	.27372
	Group2	15	.7333	.79881	.20625

Source: Authors' estimation.

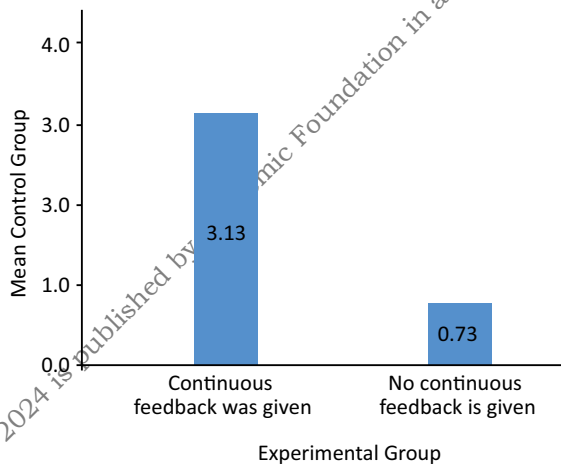
group were continuously receiving the feedback from the subordinates. Group 2 was the control group in which no such feedback was given by subordinates to the group leader. Each group leader was given feedback by four subordinates to improve their performance in the task.

Results

Table 16.2 shows the mean and standard deviation of the performance scores of the group that received continuous feedback and the group that did not receive continuous feedback. The difference in means between the two groups is shown in Figure 16.1.

FIGURE 16.1

Simple Bar Mean of Control Group by Experimental Group



Source: Authors' estimation.

Table 16.2 shows the descriptive statistics, indicating that groups that received the continuous feedback from subordinates had mean values on performance score was 3.13 and the groups that did not receive continuous feedback from subordinates had a mean of 0.73. It suggests that continuous feedback from subordinates helped the superiors to enhance the performance on the task. Groups who received the continuous feedback from subordinates and groups who did not receive continuous feedback had respectively 1.06 and .80 standard deviations.

Table 16.3 shows the t-value for comparison of performance of groups who received continuous feedback from subordinates and groups who did not receive continuous feedback. The results indicate that groups who received continuous feedback had statistically significantly higher performance (3.13 + 1.16) on a task compared to groups that did not receive continuous feedback from subordinates (.73 + .80) = 7.003, p = .000. The t-value 7.003 was also higher than critical t-value 1.701 at .05 level.

It indicates that continuous feedback from juniors had helped the managers to improve their performance.

Study 2: Continuous Feedback, Perceived Organizational Support, and Performance Improvement

Literature Review

Talent develops positive attitude towards organization based on the perceived organizational support to achieve organizational performance (Eisenberger et al., 1986). Perceived organizational support is also backed by social exchange theory, wherein an organization supports its employees to achieve high organizational performance and the employee in exchange feels obligated to return high performance to organization (Organ and Konovsky, 1989). People view the entire organization positively or antagonistically in response to the actions of another individual in the organization as part of organizational personification (Levinson, 1965). People weigh good or bad intervention by the organization as an indicator whether the organization supports them or not. Further, the factors which determine perceived organizational support are fairness, support of superiors, and welfare services which are provided to people by the organization (Rhoades and Eisenberger, 2002).

TABLE 16.3

Independent Samples Test

		Levene's Test for Equality of Variances		*t-test for Equality of Means*						
		F	*Sig.*	*t*	*df*	*Sig. (2-tailed)*	*Mean Difference*	*Std. Error Difference*	*95% Confidence Interval of the Difference*	
									Lower	*Upper*
Performance	Equal variances assumed	0.774	0.386	7.003	28	0	2.4	0.34272	1.69796	3.10204
	Equal variances not assumed			7.003	26.022	0	2.4	0.34272	1.69555	3.10445

Source: Authors' estimation.

Jankelova et al., (2021) suggested that continuous feedback and perceived organizational support were linked positively to individual performance. They found that receptiveness to feedback increased when perceived organizational support was high among employees. They observed that feedback seeking behaviour has two components such as monitoring and inquiring and the mediation of these two components are positively associated with perceived organizational support and employee engagement. Ashford and Tsui (1991) suggested a concept named 'feedback responding behaviour'. Feedback responding behaviours are those behaviours which work on feedback to improve performance. Where the perceived organizational support is high, it is easier to implement a continuous feedback system and the superior will be receptive to feedback given by the subordinate on a continuous basis. At the same time, if perceived organizational support is low among members in an organization, superiors tend to be sceptic about the feedback process specially in case of negative feedback context. An in-group member (members having high trust among each other) will work hard to remove anomalies in performance while in comparison out-group members (members who distrust each other) will become sceptical about continuous feedback. According to Vance et al., (1995), in the context of low perceived organizational support there will be a negative perception about continuous upward feedback.

We further hypothesized that the impact of continuous feedback to superiors on performance will be mediated by perceived organizational support.

Hypothesis 2: High perceived organizational support will lead to positive impact of continuous feedback on performance.

Methodology

Sample: Hundred employees who were working in public sector banks which were located in the western part of the country participated as respondents in the study. These respondents were in middle management positions in banks and had both superiors and subordinates. Among these, 60% respondents were graduates in terms of their qualification and the rest were post-graduates. The average work experience was 15 years in the organization.

Design

High Perceived Organizational Support & No Continuous Feedback Group	High Perceived Organizational Support & Continuous Feedback Group
Low Perceived Organizational Support & No Continuous Feedback Group	Low Perceived Organizational Support & Continuous Feedback Group

Source: Authors' classification.

An experiment was conducted to see the impact of continuous feedback and perceived organizational support on performance by a 2 X 2 between factorial design. It had two levels of continuous feedback (continuous feedback provided/continuous feedback absent) and two levels of perceived organization support (high perceived organizational support/low perceived organizational support). The continuous feedback and perceived organizational support were independent variables. Dependent variable was performance on a simulated task.

Independent Variables

Independent variables were designed by instructions to respondents. Four scenarios were communicated to four groups. Four different groups were given the four different conditions:

Group 1: Continuous feedback was present but perceived organizational support was low.

Group 2: Continuous feedback was present but perceived organizational support was high.

Group 3: Continuous feedback was absent but perceived organizational support was low.

Group 4: Continuous feedback was absent but perceived organizational support was high.

By this design, four groups were assigned to four scenarios.

Such groups of five people including a leader were assigned the task of putting marbles in a glass through a pipe. In continuous feedback

group, four subordinates in a team were giving continuous feedback to the group leader to improve performance. In a no continuous feedback group, subordinates were restricted from giving any feedback to the group leaders. Time allotted to each group was fifteen minutes. At the end, the team that succeeded in putting the maximum number of marbles were declared winners.

Procedure

The participants of the study were contacted individually to respond to a survey questionnaire designed to get an idea of their perception on the organizational support mechanism existing in their workplace. It took fifteen minutes to respond to the questionnaire. Based on the responses on the questionnaire, respondents were segregated into two groups: High Perceived Organizational Support Group and Low Perceived Organizational Support Group. Both the groups were further divided into two sub-groups. In the High Perceived Organizational Support Group, one sub-group was given continuous feedback and the other group was not given any feedback. In the Low Perceived Organizational Support Group too one group was given continuous feedback and the other group was not given any feedback.

Results

To see the significance of the main and interaction effects of the two independent variables, i.e., continuous feedback (continuous feedback/no continuous feedback) and perceived organizational support (high perceived organi-

TABLE 16.4

Descriptive Statistics

Dependent Variable: Perceived organizational support				
Group1	*Group2*	*Mean*	*Std. Deviation*	*N*
Continuous feedback	High perceived organizational support	4.0833	.79296	12
	Low perceived organizational support	2.8333	.71774	12
	Total	3.4583	.97709	24
No continuous feedback	High perceived organizational support	2.0833	.79296	12
	Low perceived organizational support	.8333	.71774	12
	Total	1.4583	.97709	24
Total	High perceived organizational support	3.0833	1.28255	24
	Low perceived organizational support	1.8333	1.23945	24
	Total	2.4583	1.39845	48

Source: Authors' estimation.

TABLE 16.5

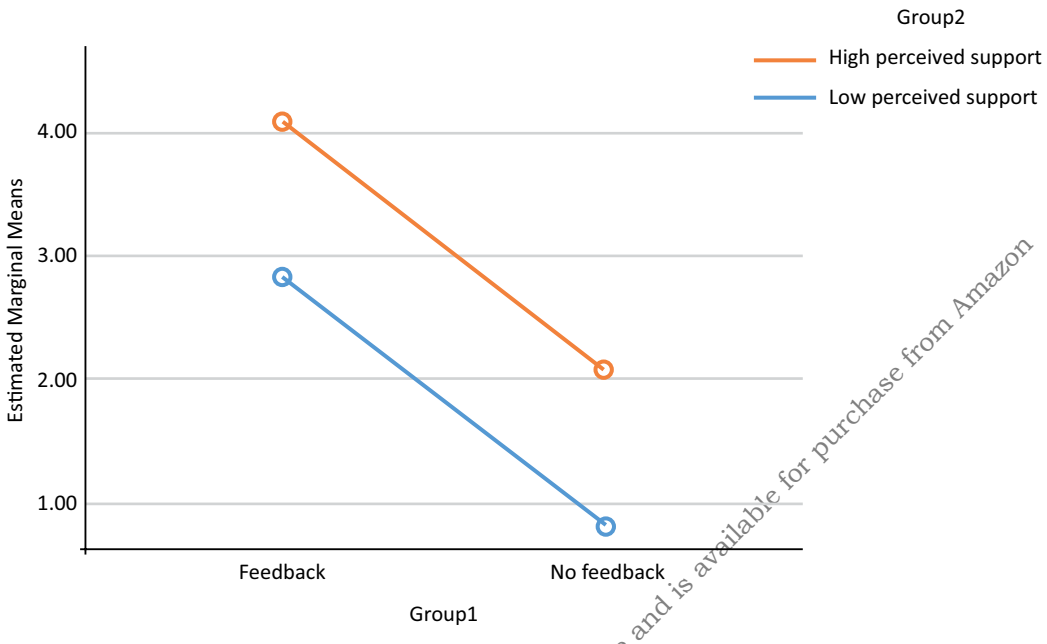
Tests of Between-Subjects Effects

Dependent Variable: High Perceived Support						
Source	*Type III Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*	*Partial Eta Squared*
Group1	48.000	1	48.000	83.921	.000	.656
Group2	18.750	1	18.750	32.781	.000	.427
Group1 * Group2	.000	1	.000	.000	1.000	.000

Source: Authors' estimation.

FIGURE 16.2A

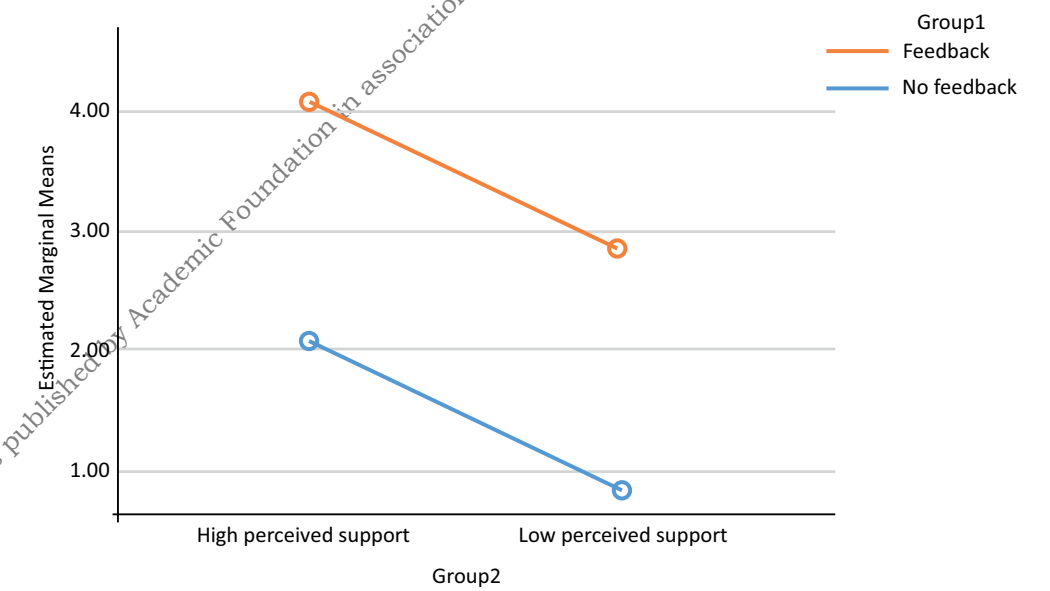
Estimated Marginal Means of High Perceived Support



Source: Authors' estimation.

FIGURE 16.2B

Estimated Marginal Means of High Perceived Support



Source: Authors' estimation.

zational support/low perceived organizational support), 2 X 2 ANOVA was used to analyze the responses in dependent measure (performance on a simulated task).

Table 16.5 showed the F ratios of the main effect of the continuous feedback on performance. It showed that means of performance score was found to be significantly higher for the continuous feedback group as compared to the no

continuous feedback group, F (1, 44) = 48.00, p = .000. It indicated that continuous feedback had significantly acted upon the performance of managers. Table 16.4 presented the F ratios of the main effect of perceived organizational support on performance. Means of high perceived organizational support group was significantly higher for the performance than for low perceived organizational support group, F (1, 44) = 18.750, p = .000. It can be concluded that perceived organizational support had significantly influenced the performance of the managers. The two-way interaction of the continuous feedback and perceived organizational support factors did not reach the significance level for the performance, F (1, 44) = .000, p = 1.000. It suggests that perceived organizational support did not influence the performance of both continuous and non-continuous feedback groups. Hence, there was no mediation role of perceived organizational support in the performance of continuous feedback receiving groups and no continuous receiving feedback groups as suggested by Figure 16.2A and Figure 16.2B. It indicates that perceived organizational support as a variable did not intervene between feedback and performance.

16.4. Conclusions

The experimental studies indicate a significant positive relationship between continuous feedback and performance. This has been observed in both the studies. However, when it comes to the perceived organizational support, we get mixed observations as follows:

a. Perceived organizational support also has a significant positive impact on performance.

b. However, perceived organizational support is not observed to have any significant influence on continuous feedback.

The outcome of the above two studies indicate the need of redrawing the HR strategies of banks in respect of performance evaluation by factoring in the role of continuous feedback in performance improvement. Such a strategy needs to be disseminated to all so that it could be perceived as a positive organizational support mechanism.

The observed lack of mediational influence by perceived organizational support between continuous feedback and performance, however, calls for detailed longitudinal or ethnographic studies to draw further insights on the topic.

Recommendations

We are not, however, suggesting to replace the widely followed system of PMS with a CFS. The intention of the study is not to derive an 'either/or' proposition. Our recommendation, arrived at both empirically and intuitively, is to explore supplementing the PMS with CFS for which the very idea of performance needs to be re-examined and the PMS be redesigned accordingly. The revised PMS can then be re-enforced with a CFS by adopting or modifying practices like 'check-in' or by introducing online/real time CFS tools interacting with the PMS database.

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