## **Contents**

Foreword			Page No.
	·C1	Abbreviations	i-iv
Overview		inductions	1
		Macrofinancial Risks	3
Chapter 1	•	Global Backdrop	5
		Macrofinancial Development and Outlook	5
		Other Global Macrofinancial Risks	8
		Domestic Macrofinancial Risks	23
		Corporate Sector	24
		Money Markets, Government Securities and Corporate Bond Markets	26
		Government Finance	29
		External Sector Developments and Foreign Exchange Markets	31
		Equity Markets	36
		Mutual Funds	39
		Alternative Investment Funds	42
		Central Counterparties (CCPs)	43
		Banking Stability Indicator	43
		Banking System	44
		Non-Banking Financial Companies (NBFCs)	49
		Credit Flows to the MSME Sector	50
		Microfinance Segment	54
		Consumer Credit	55
		Housing Market	56
		Financial System Stress Indicator	57
		Systemic Risk Survey	59
Chapter II	:	Financial Institutions: Soundness and Resilience	63
-		Scheduled Commercial Banks (SCBs)	63
		Asset Quality	65
		Sectoral Asset Quality	66
		Credit Quality of Large Borrowers	68
		Capital Adequacy	69
		Earnings and Profitability	69
		Resilience – Macro Stress Tests	72
		Sensitivity Analysis	75
		Bottom-up Stress Tests: Derivatives Portfolio	82
		Primary (Urban) Cooperative Banks	83
		Stress Testing	85
		Non-Banking Financial Companies (NBFCs)	85
		Stress Test - Credit Risk	87
		Stress Test - Liquidity Risk	87
		Interest Rate Risk	88
		Insurance Sector	88
		Stress Testing of Mutual Funds	88
		Stress Testing Analysis - Clearing Corporations	89
		Interconnectedness	90
		Financial System Network	90
		Contagion Analysis	96

	Page No.
Chapter III: Regulatory Initiatives in the Financial Sector	99
Global Regulatory Developments and Assessments	99
Markets and Financial Stability	99
Climate Related Risks and Financial Stability	100
Crypto Assets and Financial Stability	100
Financial Innovation and Financial Stability	101
Cyber Risk and Financial Stability	101
Domestic Regulatory Developments	104
Initiatives from Regulators/ Authorities	104
Reserve Bank of India (Unhedged Foreign Currency Exposure) Directions, 2022	2 104
Review of Regulatory Framework for ARCs	105
Regulations Review Authority 2.0	105
Regulatory changes undertaken in respect of Urban Cooperative banks	106
Appointment of Internal Ombudsman by the CICs	106
Guidelines on Digital Lending	106
Liberalisation of Forex Flows	107
International Trade Settlement in Indian Rupees	107
Master Directions on Transfer of Loan Exposures and Securitisation of Standard Assets (Amendments)	108
Outsourcing of Financial Services - Responsibilities of regulated entities employing Recovery Agents	108
Identification of NBFCs in the Upper Layer	108
Regulatory framework for NBFC - Account Aggregators (Amendments)	109
Digital Rupee (e₹) – Wholesale and Retail	109
Move towards frictionless credit - Pilot on digitisation of Kisan Credit Card	109
Enabling Framework for Regulatory Sandbox	110
Customer Protection	110
Enforcement	110
REITs and InvITs – Fund Raising and Future Outlook	111
Other Developments	111
Deposit Insurance	111
Corporate Insolvency Resolution Process (CIRP)	112
Insurance	113
Pension Funds	114
Annex 1: Systemic Risk Survey	116
Annex 2: Methodologies	122
Annex 3: Important Regulatory Measures	139
Reserve Bank of India	139
Securities and Exchange Board of India	145
Insurance Regulatory and Development Authority of India	146
Pension Fund Regulatory and Development Authority	147
Insolvency and Bankruptcy Board of India	149
International Financial Service Centres Authority	152

		Page No.
LIST	OF BOXES	
Chap		
1.1	Financial System Stress Indicator	58
1.2	Systemic Risk Surveys and Macrofinancial Trends	60
Chap		
2.1	Gilt Valuations and Bank Profitability	71
Chap	ter III	
3.1	Strengthening of Cyber Security Preparedness	102
LIST	OF CHARTS	
Chap	ter I	
1.1	Global Growth Forecasts	3
1.2	Inflation	3
1.3	Impact of Shocks of 2022	4
1.4	Financial Conditions	5
1.5	Increase in Government Bond Yields	5
1.6	Equity Market Decline	6
1.7	Corporate Bond Market	6
1.8	Financial Market Volatility	7
1.9	FX-implied Dollar Funding Spreads	7
1.10	U.S. Long-term Rates	7
1.11	General Government Debt	8
1.12	General Government Balance	9
1.13	EMEs General Government Debt in 2022	9
1.14	Rising Global Non-Financial Sector Debt	9
1.15	Global Non-Financial Sector Debt Comparison	9
1.16	Non-Financial Sector Debt by Country, Q1:2022	10
1.17	Central Bank Rate Hikes	10
1.18	1-year Terminal Rate Expectations	11
1.19	Federal Reserve System Open Market Account (SOMA) - Projected Net Income	12
1.20	USD Appreciation	12
1.21	Terms of Trade and Exchange Rate Depreciation	13
1.22	Policy Rate Changes and Exchange Rate Depreciation	13
1.23	USD's share in Global Transactions and Assets	14
1.24	USD and Oil Prices	14
1.25	Increase in Oil Prices in Domestic Currency	14
1.26	Capital Flight from EMEs	15
1.27	Profitability and Capital of Banks	15

		Page No.
1.28	IMF Global Bank Stress Test	16
1.29	Global Climate Finance Flows in Mitigation	17
1.30	Global Climate Finance Flows in Adaptation	17
1.31	Smoothened Distribution Function of ESG Score (Probability)	17
1.32	ESG Debt Issued	18
1.33	Total Net Assets and Share of the Non-bank Financial Intermediation Sector,	
	Q1:2002–Q1:2022	18
1.34	OEF Monthly Net Flows, Q1:2002–Q1:2022	19
1.35	Daily Prices of Select Crypto Assets	19
1.36	Bitcoin <i>vis-à-vis</i> Equity and Inflation	20
1.37	Global Supply Chain Pressure Index	21
1.38	Commodity Prices	21
1.39	Brent Price - Spot and Futures	22
1.40	FAO Food Price Index	22
1.41	Investment in Commodity Linked Investment Funds	22
1.42	Number of CBDCs under various stages	23
1.43	Nominal and Real Sales Growth of Listed Private Non-Financial Companies	24
1.44	Operating Profit Margin of Listed Private Non-Financial Companies	25
1.45	Select Ratios of Listed Private Manufacturing Companies	25
1.46	Debt Serviceability of Listed Private Non-Financial Companies	25
1.47	Amount Raised by Indian Corporates through Overseas Capital Market Offerings	26
1.48	PE/VC Investments in India	26
1.49	Tighter Market Conditions	26
1.50	Banking System Liquidity Tightened	27
1.51	Yield Curve Flattened	27
1.52	AAA - 3 Year Corporate Bond Yield and Spread	28
1.53	Spread of Listed NCDs – Primary and Secondary Market	28
1.54	Resource Mobilisation from Primary Market and Category-wise Issuers of Corporate Bonds	29
1.55	Category-wise Subscribers of Corporate Bonds	29
1.56	Monthly GST Collection	30
1.57	Government Borrowings and Redemption	30
1.58	Merchandise Exports, Imports and Trade Balance	31
1.59	India's Oil Import Bill	31
1.60	India's Balance of Payments	32
1.61	Cumulative FDI and FPI Flows	32
1.62	Foreign Exchange Reserves of India: Long-Term Trend	33
1.63	Intervention and Impact of Valuation and Flows on Foreign Currency Assets	33
1.64	Currency Composition of External Debt	34

		Page No.
1.65	INR Movement against Major Currencies	34
1.66	USD-INR Long Term Trend	35
1.67	Exchange Rate Volatility	35
1.68	USD-INR Implied Volatility	35
1.69	Forward Premia Curve	36
1.70	Equity Market Movements	36
1.71	Monthly FPI Flows	36
1.72	FPI and DII Flows – FY2022-23	37
1.73	FPI and DII Flows – From FY2018-19 to FY2022-23	37
1.74	Individuals' Net Investment and Nifty 50 Returns	37
1.75	Trend in Demat Accounts and SIP Flows	38
1.76	Equity Market Valuation Indicators	38
1.77	Scheme-wise Mutual Fund Net Inflows	39
1.78	Share of Overnight Mutual Funds in Total Open-ended Debt Schemes	40
1.79	Share of Liquid Assets Holdings by Open-ended Debt Schemes of Mutual Funds	40
1.80	Scheme-wise Analysis of Share of Liquid Assets Holdings by Open-ended Debt Schemes of Mutual Funds	41
1.81	Monthly Net Flows of Open-ended Debt Schemes of Mutual Funds	41
1.82	Monthly Volatility of Open-ended Debt Schemes of Mutual Funds	41
1.83	AIF Fund Mobilisation	42
1.84	Instrument-wise Deployment of Funds by AIFs	42
1.85	Banking Stability Map	43
1.86	Banking Stability Indicator- Contribution of Individual Risk Factors	44
1.87	Credit Growth – SCBs	44
1.88	Credit Growth – Bank Group wise	44
1.89	Exposure Distribution of Non-PSU Non-Financial Obligors	45
1.90	Long-term Ratings	45
1.91	Incremental Credit Deposit Ratio	46
1.92	Movement in Liquidity Coverage Ratio and its Components	46
1.93	Household Financial Savings in India	47
1.94	Components of Net Cash Outflow – All SCBs	47
1.95	Movement in Run-off Factor	47
1.96	HQLA and Cash Outflow – Share of Components	48
1.97	Asset Quality and Risk Weights	48
1.98	GNPA Movements	49
1.99	Capital Adequacy	49
1.100	MSME Sector Credit Growth	50
1.101	ECLGS Guarantee Disbursed	51

		Page No.
1.102	Sector-wise ECLGS Guarantee	51
1.103	Bank Group-wise ECLGS Guarantee	52
1.104	Borrower Category-wise ECLGS Guarantee	52
1.105	Amount-wise ECLGS Guarantee	53
1.106	Unit Type-wise NPA	53
1.107	Borrower Category-wise NPA	53
1.108	ECLGS Sector-wise Share of NPA	54
1.109	Lending to the Microfinance Segment	54
1.110	Stress in the Microfinance Segment	55
1.111	Inquiry Volumes by Product Category	55
1.112	Inquiry Volumes by Lender Category	55
1.113	Inquiry Volumes by Risk Tier	56
1.114	Origination by Risk Tier	56
1.115	Movement in House Prices	57
1.116	House Sales, Launches and Inventory Overhang	57
Chapt	er II	
2.1	Deposit and Credit Profile of SCBs	64
2.2	Select Asset Quality Indicators of SCBs	66
2.3	Sectoral Asset Quality Indicators of SCBs	67
2.4	Select Asset Quality Indicators of Large Borrowers	68
2.5	Capital Adequacy	69
2.6	Select Performance Indicators of SCBs	70
2.7	Macro Scenario Assumptions	73
2.8	CRAR Projections	73
2.9	Projection of CET1 Capital Ratio	74
2.10	Projection of SCBs' GNPA Ratios	74
2.11	Credit Risk - Shocks and Outcomes	75
2.12	Credit Concentration Risk: Individual Borrowers – Exposure	76
2.13	Credit Concentration Risk: Group Borrowers – Exposure	77
2.14	Credit Concentration Risk: Individual Borrowers – Stressed Advances	77
2.15	Trading Book Portfolio: Bank-group wise	78
2.16	Yield Curves and Shift in Yields across Tenors since June 2022	79
2.17	HTM Portfolio – Composition	80
2.18	HTM Portfolio – Unrealised Gain / Loss as on September 30, 2022	80
2.19	Equity Price Risk	81
2.20	Liquidity Risk – Shocks and Outcomes	82
2.21	MTM of Total Derivatives Portfolio of Select Banks – September 2022	82
2.22	Impact of Shocks on Derivatives Portfolio of Select Banks	83

		Page No.
2.23	Credit Profile and Asset Quality Indicators of UCBs	83
2.24	Stress Test of UCBs	85
2.25	Sectoral Credit Growth of NBFCs	85
2.26	Sectoral GNPA ratio of NBFCs	86
2.27	Sectoral NNPA ratio of NBFCs	86
2.28	Capital Adequacy and Profitability of NBFCs	86
2.29	Credit Risk in NBFCs - System Level	87
2.30	Range (Surplus $(+)$ / Deficit $(-)$ ) of LR-RaR Maintained by AMCs over AMFI Prescribed Limits	89
2.31	Range (Surplus $(+)$ / Deficit $(-)$ ) of LR-CRaR Maintained by AMCs over AMFI Prescribed Limits	89
2.32	Bilateral Exposures between Entities in the Financial System	91
2.33	Network Plot of the Financial System - September 2022	91
2.34	Net Receivables (+ve) / Payables (-ve) by Institutions	91
2.35	Inter-bank Market	92
2.36	Different Bank Groups in the Inter-Bank Market - September 2022	92
2.37	Composition of Fund based Inter-Bank Market	92
2.38	Network Structure of the Indian Banking System (SCBs $+$ SFBs $+$ SUCBs) $-$ September 2022	93
2.39	Connectivity Statistics of the Banking System (SCBs)	94
2.40	Gross Receivables of AMC-MFs from the Financial System	94
2.41	Gross Receivables of Insurance Companies from the Financial System	95
2.42	Gross Payables of NBFCs to the Financial System	95
2.43	Gross Payables of HFCs to the Financial System	96
2.44	Gross Payables of AIFIs to the Financial System	96
2.45	Contagion Impact of Macroeconomic Shocks (Solvency Contagion)	98
Chap	ter III	
3.1	NPS and APY Subscribers – Sector-wise	114
3.2	NPS and APY AUM – Sector-wise	115
LIST	OF TABLES	
Chap	ter I	
1.1	Asset Returns	6
1.2	Global Non-Financial Sector Debt Q1:2022	10
1.3	Key Cryptocurrency Prices and Indices	19
1.4	Central Government Finances - Key Deficit Indicators	29
1.5	States' Key Deficit Indicators	30
1.6	Net Capital Flows	33
1.7	ECB loans	34

		Page No.
1.8	Assets under Management of the Domestic Mutual Fund Industry	39
1.9	Trends in Resource Mobilisation by Mutual Funds	39
1.10	Growth in Wholesale Credit	45
1.11	Aggregate Mobilisation of Funds	45
1.12	Asset Quality Ratios across NBFC Categories	50
1.13	MSME Restructuring Schemes	51
1.14	Average Ticket Size of ECLGS Borrowers	52
1.15	Delinquency Levels in Aggregate Consumer Credit across all Product Categories	56
Chapt	er II	
2.1(a)	Credit Share and Growth – September 2022	65
2.1(b)	Growth in New Loans by SCBs: Economic Sectors, Organisations and Account type	65
2.2	Decline in System Level CRAR	78
2.3	Tenor-wise PV01 Distribution of AFS Portfolio	78
2.4	Other Operating Income (OOI) - Profit/(Loss) on Securities Trading	79
2.5	Tenor-wise PV01 Distribution of HFT portfolio	79
2.6	Interest Rate Risk – Bank-groups - Shocks and Impacts	80
2.7	Earnings at Risk (EAR) - Traditional Gap Analysis (TGA)	81
2.8	Market Value of Equity (MVE) – Duration Gap Analysis (DGA)	81
2.9	NBFCs' Sources of Funds	86
2.10	Liquidity Risk in NBFCs	88
2.11	Consolidated Solvency Ratio for all Insurers	88
2.12	Minimum Required Corpus of Core SGF Based on Stress Testing Analysis at a major Clearing Corporation	90
2.13	Contagion Losses due to Bank Failure – September 2022	97
2.14	Contagion Losses due to NBFC Failure – September 2022	97
2.15	Contagion Losses due to HFC Failure – September 2022	97
Chapt	er III	
3.1	Category of Complaints Received under the RB-IOS, 2021	110
3.2	Fund Mobilisation by REITs and InvITs	111
3.3	Deposit Insurance Premium	111
3.4	Deposit Insurance Fund (DIF)	112
3.5	Corporate Insolvency Resolution Process	112
3.6	CIRPs Ending with Orders for Liquidation till September 30, 2022	113
3.7	Outcome of CIRPs, Initiated Stakeholder-wise, as on September 30, 2022	113
3.8	Sectoral Distribution of CIRPs as on September 30, 2022	114