## **Contents**

			Page
	Contents		i
	Abbrevia	tions	viii
	Acknowle	edgements	ix
	Abstract		X
Chapters			
Chapter 1	Introduct	tion	1
1.1	Transmiss	sion Channels	1
1.2	Evolution	of Monetary Framework in India	2
1.3	Chapter S	cheme	6
Chapter 2	Developn	nent of Financial Markets	8
2.1	Financial	Markets Evolution in India	9
2.2	Role of M	Ioney Market in Monetary Transmission	9
	2.2.1	Financial crisis & global money markets	10
2.3	Developm	nent of Money Market in India	12
	2.3.1	Reforms in the Indian money market	12
	2.3.2	Prudential measures in the Indian money market	14
2.4	Trends in	Money Market	16
	2.4.1	Collateralised money market expanded in the mid-2000s	18
	2.4.2	Variety of instruments increased the depth of the money market	18
2.5	Foreign Exchange Market		
	2.5.1	Liberalisations in the Indian foreign exchange market	20
	2.5.2	Rise in turnover in the Indian foreign exchange market	22

	2.5.3	Nominal	and real exchange rate movements	22
2.6	Debt Mark	cet		23
	2.6.1	Governn	nent securities market	23
		2.6.1.1	Reforms in government securities market	23
		2.6.1.2	Trends in government debt	25
		2.6.1.3	Turnover in government securities market	27
	2.6.2	Corporat	e bond market	27
		2.6.2.1	Reforms in the corporate debt market	27
		2.6.2.2	Trends in Corporate debt market	28
2.7	Credit Ma	rket		31
	2.7.1	Trend in	bank credit	31
	2.7.2	Liberalis	ation of lending rates	31
	2.7.3	Trends in	n lending rate	35
2.8	Interest Ra	ates across	Debt and Credit Markets	35
2.9	Monetary	Monetary Operating Procedure		37
	2.9.1	Develop	ment of liquidity adjustment facility	38
	2.9.2		tion of term repo in the liquidity ent facility	40
	2.9.3	Experien	ce with the new operating procedure	40
2.10	Conclusion	n		42
Annex 2.	1: Method	ology for c	omputation of WALR based on BSR 1	43
Chapter 3	Integratio	on of Finan	cial Markets	44
3.1	Summary	Statistics o	f Monthly Interest Rate Series	44
	3.1.1	Interest moveme		46
3.2	Correlation	n among In	terest Rates	48
3.3	Unit Root	Tests for M	Ionthly Interest Rate Series	49
	3.3.1	Concept	of stationarity in time series data	49
	3.3.2	Features	of unit root test	50

		3.3.2.1	ADF test	50
		3.3.2.2	PP test	50
		3.3.2.3	KPSS test	51
3.4	Unit Root	Test for Mo	nthly Interest Rate Series	51
3.5		ion of a Coi m Relationsh	ntegration Model to Test Long-term	57
	3.5.1	Johansen o	cointegration test	59
	3.5.2	Results of	the cointegration test	60
	3.5.3	Vector erre	or correction model	63
3.6	Conclusio	n		66
Annex 3	.1: Monthly	y Interest Rat	e Series	67
Chapter 4	Review of	f Literature	on Monetary Transmission	72
4.1	Monetary	Transmission	n Channels	75
	4.1.1	Credit cha	nnel	76
		4.1.1.1	Bank lending channel	76
		4.1.1.2	Balance sheet channel	77
		4.1.1.3	Bank equity capital channel	78
	4.1.2	Asset pric	e channel	79
	4.1.3	Exchange	rate channel	80
	4.1.4	Expectation	ons channel	82
4.2	Conclusio	n: Transmis	sion Channels	83
4.3	New Keyr	nesian Synthe	esis	86
4.4	Literature	Review: The	eory and Evidence	87
	4.4.1	Empirical	literature for advanced countries	88
	4.4.2	Empirical	literature for EMDEs	90
	4.4.3	Studies for	or post global financial crisis period	92
	4.4.4	Empirical	studies on India	94
4.5	Stylised F to 2014-1:		etary Policy in India during 1997-98	95
	4.5.1	Activation	n of the Bank Rate	95
	4.5.2	•	dence of interest rate channel of transmission	96

	4.5.3	Recognisation of the influence of globalisation on monetary policy	98
	4.5.4	Monetary policy formulation becomes more frequent and broad-based	98
	4.5.5	Impact of global financial crisis on monetary policy	100
	4.5.6	Inflation becomes generalised post global financial crisis	101
	4.5.7	Fed taper tantrum increases monetary policy challenges	102
	4.5.8	Move to a flexible inflation targeting framework	103
4.6	Conclusio	n: Stylised Facts on Monetary Policy in India	103
	Annex 4.1 2015	: Monetary Policy Actions in India: 2001 to	105
Chapter 5	Empirical	Model on Interest Rate Channel	109
5.1	Unrestricte	ed VAR Model	109
5.2	Relationship Among Growth Inflation and Policy Rate		111
	5.2.1	Real policy rate shows phases of both positive and negative values	112
5.3	Variable U	Jnit Root Tests	113
5.4	VAR Lag Length Selection		118
5.5	Impulse R	esponse Function of Unrestricted VAR	120
5.6	SVAR Mo	odel	122
	5.6.1	SVAR model specification	123
	5.6.2	SVAR variable ordering	126
	5.6.3	Modelling liquidity effect	126
	5.6.4	Impulse response functions of SVAR	127
	5.6.5	Variance decomposition	128
	5.6.6	Stability test for SVAR model	131
	5.6.7	Residual autocorrelation test	131
	5.6.8	SVAR residual normality test	132
5.7	Block Exc	ogeneity Wald Test	133
5.8	Lags in M	onetary Policy	134

5.9	Conclusion	135
	Annex 5.1 : Quarterly Inflation, Output and Policy Rate	137
Chapter 6	Conclusions	139
6.1	Transmission Channels	139
6.2	Empirical Evidence on Interest Rate Channels in India	140
6.3	Issues that the Thesis Examined	140
6.4	Keys Findings of the Thesis	141
6.5	Policy Relevance of the Findings	143
6.6	Suggestion for Further Research	143
	References	144

## **List of Charts**

2.1	Average daily turnover in the money market has moved towards collateralised segment	19
2.2	Outstanding CPs and CDs	19
2.3	Issuance of treasury bills has increased sharply	21
2.4	Money market rates show greater co-movement	21
2.5	Turnover in India's Foreign Exchange Market (Average Daily)	24
2.6	Exchange Rate of the Indian Rupee	24
2.7	Central and State Governments' Market Debt	28
2.8	Turnover in Central Government Securities	28
2.9	Corporate Bond - Number of Instruments and Amount Outstanding (As on March 31)	30
2.10	Trading in Corporate Bonds	30
2.11	Growth in All Scheduled Banks' Credit	32
2.12	Growth in All Scheduled Commercial Banks' Credit and Bank Credit to GDP Ratio	32
2.13	Nominal Weighted Average Lending Rate of SCBs (As on March 31)	36
2.14	Weighted Average Bank Lending Rates and Yields on 10 Years' Maturity AAA Rated Corporate Bonds and Government	26
2.15	Securities Revised LAF Framework	36 39
2.15	Liquidity Adjustment Facility and Call Rate	41
		41
2.17	Stability of Call Rate under Various Regimes of Liquidity Framework	41
3.1	Movement of Interest Rates	47
4.1	Schematic Presentation of Monetary Transmission	84
5.1	Quarterly Growth, Inflation and Policy Rates	112
5.2	Impulse Response Functions of Unrestricted VAR	122
5.3	Liquidity Adjustment Facility and Call Rate	127
5.4	Impulse Response Functions of SVAR Model	128
5.5	Inverse Roots Test	131

## **List of Tables**

17 26
2.4
34
46
48
53
58
58
59
61
64
111
114
119
130
132
132
133
134
135