Contents

Pro	eface		xvi
PA	RT I	INTRODUCTION	/ 2
1	Cre	edit Basics	
	1.1	Meaning of Credit	
	1.2	Role of Credit	4
	1.3	Credit Market	6
	1.4	Credit – Advantages and Disadvantages	6
		1.4.1 Merits of Credit	7
		1.4.2 Demerits of Credit Usage	7
		1.4.3 Is Wealth Creation Through Use of Credit Easy and Simple?	9
	1.5	Suppliers of Credit	10 11
	1.6	Credit Risk Study	12
		Appendix: Credit Creation	13
		Questions/Exercises	14
2	Esse	entials of Credit Risk Analysis	15
	2.1	Meaning of Credit Risk	15
		Causes of Credit Risk	16
		Credit Risk and Return	17
		Credit Risk Analysis	17
	2.5	Historical Progress of Credit Risk Analysis	19
	2.6	Need for Credit Risk Analysis	19
	2.7	Challenges of Credit Risk Analysis	22
	•	2.7.1 The Art and Science of Credit Risk Analysis	22
	2.8	Elements of Credit Risk Analysis	24
		Questions/Exercises	25
		it Risk Management	27
	3.1	Strategic Position of Credit Risk Management	27
	3,2	Credit Risk Management Context	28
	3.3	Credit Risk Management Objectives	28
,	3.4	Credit Risk Management Structure	29

vi	C	Contents		
	3.5	Credit	Risk Culture	29
			Risk Appetite	30
	3.7		Risk Management in Non-Financial Firms	31
	3.8		Risk Management in Financial Intermediaries	31
	5.0	3.8.1	Stages of Credit Risk Management in Financial Intermediaries	31
			Credit Risk Management Process	33
			ions/Exercises	34
T) A l	חת זו			
PA	RT II	FIKIVI	(OR) OBLIGOR CREDIT RISK	
4			al Firm/Obligor-Level Risks	37
	4.1	Firm ((or) Obligor Risk Classification	37
		4.1.1	Business Risks or Operating Risks (OR)	37
			Financial Risks (FR)	38
	4.2			39
	4.3	Differ	ent Risk Levels	39
		4.3.1	Low Operating Risk and Low Financial Risk	39
		4.3.2		39
		4.3.3	Low Operating Risk and High Financial Risk	4(
		4.3.4	Medium Operating Risk and Low Financial Risk	40
		4.3.5	Medium Operating Risk and Medium Financial Risk	40
		4.3.6	Medium Operating Risk and High Financial Risk	4(
		4.3.7	High Operating Risk and Low Financial Risk	4(
		4.3.8	High Operating Risk and Medium Financial Risk	4]
		4.3.9	High Operating Risk and High Financial Risk	41
		Questi	ions/Exercises	42
5	Exte	rnal Ri	sks	43
	5.1	Busin	ess Cycle	43
		5.1.1	Benefits of Study of Business Cycles	45
		5.1.2	Credit Risk in the Business Cycle	46
	5.2	Econo	omic Conditions	46
		5.2.1	Private Consumption	47
		5.2.2	Government Spending	47
		5.2.3	Investment	48
		5.2.4	Imports and Exports	48
		5.2.5	How to Link NI Components to the Firm	48
		5.2.6	₹	49
	5.3		on and Deflation	50
	5.4		ce of Payments and Exchange Rates	51
	5.5	Politic		52
	5.6		Policy	53
	5.7		tary Policy	53
	5.8		graphic Factors	54
	5.9		atory Framework	55
	5.10	Techn		55
	7 1 1	Hnvir	onment Issues	~

			Cor	itents	vii ——
	5.12	Interna	tional Developments		56
	5.13	Others			56
			ring External Risks	•	57
			ons/Exercises		58
6	Indu	stry Risl	ks		61
		•	tanding Obligor's Industry or Market		61
		6.1.1	Sector vs. Industry vs. Market Segment		61
		6.1.2	Challenges of Industry Classification		62
	6.2	Types of	of Industry Risks		63
	6.3	Industr	y Life Cycle		64
	6.4	Perman	nence of Industry		65
	6.5	Govern	ment Support		65
	6.6	Industr	y and Factors of Production		66
	6.7	Industr	y and Business Cycles		66
	6.8	Industr	y Profitability		67
		6.8.1	Competition Among the Existing Firms Within the Industry	7	68
		6.8.2	Threat of New Entrants		68
		6.8.3	Threat of Substitute Products		69
		6.8.4	Bargaining Power of Buyers		69
		6.8.5	Bargaining Power of Suppliers		70
	6.9	Compe	titor/Peer Group Analysis		71
		Questio	ons/Exercises		77
7	Entit	y-Level	Risks		79
	7.1	Unders	tanding the Activity		80
	7.2	Risk Co	ontext and Management		81
	7.3	Interna	l Risk Identification Steps		82
		7.3.1	Interviews and Questioning		82
		7.3.2	Market Developments and Peer Comparison		83
	7.4	SWOT	Analysis		83
	7.5	Busines	ss Strategy Analysis		84
		7.5.1	Cost Leadership		85
		7.5.2	Differentiation		86
		7.5.3	Contraction		86
•		7.5.4	Market Penetration		86
		7.5.5	New Markets		87
		7.5.6	New Products/Product Synergy Diversification		87
		7.5.7	Product/Market Diversification		87
		7.5.8	Consolidation		87
		7.5.9	Merger/Takeover		87
•		7.5.10	Expansion		88
		7.5.11	Cost Control		88
		7.5.12	Focus		88
	7.6	Pitfalls	in Strategy		89
	7.7	Manage	ement Analysis		90
		7.7.1	One-Man Rule		91
		7.7.2	Joint Chairman/CEO/MGD Position		91

•

viii	!	Contents		
		7.7.3	Imbalance in Top Management Team	·
		7.7.4	Weak Finance Function	2
		7.7.5	Lack of Skilled Managers (or Inability to Attract Skilled	-
			Managers in Key Positions)	9
		7.7.6	Disharmony in Management	9
		7.7.7	Change in Ownership	g
		7.7.8	Cultural Rigidity	9
		7.7.9	Lack of Internal Controls	9
		7.7.10	Will Indiate	9
		7.7.11	Fraudulent Management	9
		7.7.12	Myopic Vision	9
		7.7.13	Big Projects	9
		7.7.14	Inadequate Response to Change	9.
		7.7.15	Poor Corporate Governance	9.
	7.8		nternal Risks	9,
		Questio	ns/Exercises	9
8	Fina	ncial Risl	ks	99
	8.1	Importa	nce of Financial Statements	99
	8.2	Quality	and Quantity of Financial Statements	101
		8.2.1	Quality of Financial Statements	101
		8.2.2	Quantity of Financial Statements	102
	8.3	Role of 1	Historical Financial Statements	102
	8.4	Financia	al Analysis	103
		8.4.1	Balance Sheet	103
		8.4.2	Income Statement (or) Profit and Loss Account	103
		8.4.3	Cash Flow Statement (CFS)	105
	8.5	Analytic		105
			Accounting Analysis	105
		8.5.2	Common Sizing Analysis (CSA)	107
			Indexed Trend Analysis (ITA)	110
	0.		Ratio Analysis	113
	8.6	Solvency		115
		_	Liquidity Ratios	115
			Long Term Solvency Ratios	117
			External Finance Ratios	120
		8.6.4	Dividend and Equity Ratios	120

8.6.5

8.7.1

8.7.2

8.7.3

8.7.4

8.7.5

8.7.6

8.7

Operational Ratios

Cash Flow Ratios

Performance Ratios

Profitability Ratios

Return on Investment (ROI) Ratios

Cost-Volume-Profit (CVP) Ratios

Asset Management (or Activity) Ratios

Leverage (Operating and Financial) Ratios

120

121

123

123

124

125

126

128

133

		Contents	IX
	8.8	Encapsulated Ratios	134
		8.8.1 Dupont Model	134
		8.8.2 Predictive Power of Ratios	135
		Questions/Exercises	143
9	Integ	rated View of Firm-Level Risks	147
	9.1	Relevance of an Integrated View	147
	9.2	Judgement	147
	9.3	Identifying Significant Credit Risks	148
	9.4	Risk Mitigants	150
	9.5	Types of Mitigants	150
		9.5.1 Qualitative Mitigants	150
		9.5.2 Quantitative Mitigants	152
		9.5.3 Difference between Qualitative and Quantitative Mitigants	153
	9.6		153
	9.7	Monitoring of Credit Risk	154
		Appendix: Credit Risks and Possible Mitigants	155
		Questions/Exercises	158
10	Cred	it Rating and Probability of Default	161
	10.1	Credit Risk Grading	161
		10.1.1 Linking EIIF Evaluation to Credit Risk Grades	161
		10.1.2 Benefits of Credit Risk Grade System	163
	10.2		163
		10.2.1 Benefits of PD Values	165
		10.2.2 PD Values and Credit Decisions	165
	10.3	External vs. Internal Rating	166
		10.3.1 Reliability of External Ratings	167
		10.3.2 Internal Ratings	168
	10.4	PD in Credit Structural Models	169
		10.4.1 The Merton Model (1974)	169
		Questions/Exercises	172
PAI	RT III	CREDIT RISKS – PROJECT AND WORKING CAPITAL	
11		it Risks in Project Finance	177
		Distinctive Features of Project Finance	177
		Types of Project Finance	178
	11.3	Reasons for Project Finance	179
		11.3.1 Scarce Resources	179
		11.3.2 Risk Sharing	179
		11.3.3 Off-Balance Sheet Debt	179
		11.3.4 Avoidance of Restrictive Covenants	179
		11.3.5 Tax Considerations	180
		11.3.6 Extended Tenor	180

·

•

	11.4	1 Parties	s Involved in Project Finance	100
		11.4.1		180
		11.4.2	F	180
		11.4.3		180
		11.4.4	Governments	181
		11.4.5	Multilateral Agencies	181
	11.5	Phases	of Project and Risks	181
		11.5.1	_	182
			Start-Up Phase Risks	182
		11.5.3		182
	11.6		t Credit Risks	183
		11.6.1		183
		11.6.2		183
		11.6.3	Project Financial Viability Risks	184
	11.7	Financi	ial Study	186
		11.7.1	Cash Flow Forecasts	187
		11.7.2		187
		11.7.3	Assessing Creditworthiness – Building a Lender's Case	189
	11.8	Project	Credit Risk Mitigants	190
			ons/Exercises	192
				202
12	Cred	it Risks	in Working Capital	207
	12.1		on of Working Capital	207
		12.1.1	Working Capital Cycle - Finance Manager's Key Concern	207
		12.1.2	Working Capital Cycle - Lending Bank's Point of View	208
	12.2	Assessi	ng Working Capital through the Balance Sheet	208
	12.3	Working	g Capital Ratios	210
	12.4		g Capital Cycle	212
	12.5	Working	g Capital vs. Fixed Capital	216
	12.6	Working	g Capital Behaviour	216
		12.6.1	Availability of Finance	217
		12.6.2	Changes in Trade Terms	218
		12.6.3	Changes in Business Volume	219
		12.6.4	Price Changes	222
			Others	222
	12.7	Working	Capital, Profitability and Cash Flows	223
	12.8	Working	Capital Risks	225
		12.8.1	Over-trading	225
		12.8.2	Diversion Risk	227
		12.8.3	Inadequate Financial Management	228
		12.8.4	Inflation Risk	228
		12.8.5	Inadequate Provisioning of Working Capital in	420
			Original Project Costs	228
			Losses and Reducing Profitability	228
			Inadequate Structuring of Facilities by Banks	229
		12.8.8	Unforeseen Contingencies	229
	12.9	Impact	of Working Capital Risks	220

		Contents	xi
	12.10	Working Capital Risk Mitigants	230
	12.10	12.10.1 Covenants	230
		12.10.2 Cancellation/Tightening/Temporary Freeze of Facilities	230
		12.10.3 Increase Pricing	231
		12.10.4 Liquidation of Non-Core Assets	231
		12.10.5 Owners' Injection/Strengthening Net Working Capital	231
		12.10.6 Improvement of Working Capital Management	231
		12.10.7 Insure against the Risk from Unforeseen Contingencies	231
	12.11	Working Capital Financing	232
	12.11	Questions/Exercises	236
PA	RT IV	CREDIT PORTFOLIO RISKS	
13	Credit	Portfolio Fundamentals	241
		Credit Portfolio vs. Equity Portfolio	241
		Criticality of Portfolio Credit Risks	242
	13.3	Benefits of Credit Portfolio Study	242
	10.2	13.3.1 Active Credit Portfolio Management	242
		13.3.2 Overall Credit Risk Reduction	243
		13.3.3 Optimizes Liquidity	244
		13.3.4 Assists Sales and Marketing	244
		13.3.5 Insights into Sectoral Risk Exposures	244
		13.3.6 Solves the Capital Dilemma	245
		13.3.7 Portfolio Management Strategies	246
		13.3.8 Credit Quality Issues	247
	13.4	Portfolio Analysis	247
	13.5		249
	10.0	Appendix: Organizational Conflict in Credit Risk Management	249
		Questions/Exercises	251
14	Maio	· Portfolio Risks	253
	•	Systematic Risk	253
		14.1.1 Triggers of Systematic Risk	254
		14.1.2 Consequences of Systematic Risk	254
	14.2	Diversifiable Risk	255
		Concentration	258
	1113	14.3.1 Industry or Sector Concentration	258
		14.3.2 Exposure or Name Concentration	259
		14.3.3 Region/Location/Country Concentration	259
		14.3.4 Foreign Currency Concentration	259
		14.3.5 Collateral Risk	260
		14.3.6 Maturity Risks	260
		14.3.7 Funding Risk	261
		14.3.8 Correlation Risks	262
	14.4		263
	A T.T	Ouestions/Exercises	263

15	Firm	Risks to Portfolio Risks and Capital Adequacy	26
	15.1	_ · · · · ·	26:
	15.2		26
		15.2.1 Firm Credit Risk Migration	260
		15.2.2 Portfolio Risk Migration	268
		15.2.3 Benefits of Migration Risk Study	269
	15.3	Default Risk	269
		15.3.1 Firm-Level Defaults	269
		15.3.2 Portfolio-Level Defaults	270
	15.4	Loss Given Default (LGD)	270
	15.5	Expected Loss (EL)	27
		15.5.1 Obligor EL	271
		15.5.2 Portfolio EL	271
	15.6	Provisioning	272
		15.6.1 Provisioning – Firm Level	272
		15.6.2 Portfolio-Level Provisioning	273
	15.7	Credit Loss Distribution	274
		15.7.1 Characteristics of Credit Loss Distribution	275
		15.7.2 Benefits of Developing a Credit Risk (or Loss) Distribution	275
	15.8	Economic Capital	276
		15.8.1 Regulatory Capital vs. Economic Capital	277
		15.8.2 Measuring Economic Capital	278
		15.8.3 Optimizing Economic Capital	279
		Questions/Exercises	282
16	Credit	t Risk and The Basel Accords	285
	16.1	Basel Accords	285
	16.2	Basel I (1988) - First Basel Accord	286
		16.2.1 Criticisms of Basel I	287
	16.3	Basel Accord II (2006)	288
		16.3.1 Alternative Approaches for Credit Risk in Basel II	289
		16.3.2 Risk Weighted Assets (RWA) and Capital Adequacy	
		in Basel II	293
		16.3.3 Do Higher LGD and PD Always Translate into	
		Higher RWA under the IRB Approach?	294
		16.3.4 Criticisms of Basel II	295
	16.4	Basel III	296
		16.4.1 Credit Risk Measurement in Basel III	297
		16.4.2 Other Key Features of Basel III	298
		16.4.3 Can Basel III Prevent Future Financial/Credit Crises?	299
		Appendix	300
		Questions/Exercises	302
PAR	TV F	PORTFOLIO RISK MITIGANTS	
17	Credit	Risk Diversification	305
	17.1	Traditional Diversification	305

	·	Cont	tents xiii
		17.1.1 Industry Limit	306
		17.1.2 Counterparty Limit	307
		17.1.3 Region-Wise Restriction	307
		17.1.4 Size	308
	17.2	Modern Diversification of Credit Portfolio	309
		17.2.1 Portfolio Selection Theory	309
		17.2.2 Application of PS in Credit Portfolio	310
		17.2.3 More Tools to Study Diversification of Portfolio Risks	314
	17.3	Correlations in Credit Risk Models	315
		Questions/Exercises	315
18	Tradi	ng of Credit Assets	317
	18.1	Syndicated Loans/Credit Assets	317
	18.2	Securitization	318
		18.2.1 Asset Backed Securities (ABS)	319
		18.2.2 Collateralized Debt Obligations (CDO)	319
		18.2.3 Downfall of CDOs (and Similar Securitized Instruments)	321
	18.3		321
	18.4	Factoring	322
	18.5	Distressed Receivables	322
		Questions/Exercises	322
9	Credi	t Derivatives	323
	19.1	Meaning of a Credit Derivative	323
		19.1.1 Credit Event	324
	19.2	Credit Default Swap (CDS)	324
		19.2.1 Is CDS an Insurance?	326
	•	19.2.2 CDS and Speculation	327
		19.2.3 Uses of CDS	327
		19.2.4 Sovereign CDS	329
		19.2.5 Criticism of CDS	329
	19.3	Total Return Swap	330
		19.3.1 Uses of TR Swap	331
	19.4	Credit Option (CO)	332
	19.5	Credit Spread Options (CSO)	333
	19.6	Credit Derivative Linked Structures	333
	19.7	Future of Credit Derivatives	334
	19.8	Credit Derivatives and Over-the-Counter (OTC) Markets	334
		Questions/Exercises	334
PAF	RT VI	CREDIT RISK PRICING	
20	Pricin	g Basics	337
	20.1	Credit Pricing Factors	337
		20.1.1 Credit Risk Premium	337
		20.1.2 Portfolio Risk	339
		20.1.3 Cost of Capital	340

xiv	Co	ntents	
		20.1.4 Cost of Leverage	340
		20.1.5 Sector Risks	340
		20.1.5 Sector Kisks 20.1.6 Overheads	341
		20.1.0 Overneads 20.1.7 Other Factors	341
	20.2		342
	20.2	Pricing Structure 20.2.1 Interest Rates	342
		20.2.1 Interest Rates 20.2.2 Commission and Fees	344
	20.3	Credit Risk Pricing Model	344
	20.3	Prime Lending Rate	345
	20.7	Questions/Exercises	348
21	Driein	g Methods	349
21	21.1	RORAC (Return on Risk-Adjusted Capital) Based Pricing	349
	21.1	Market Determined	351
		Economic Profit Based Pricing	351
		Cost Plus	353
		Structured Pricing	353
		Grid Pricing	354
		Net Present Value (NPV) Pricing	354
	21.7	RANPV (Risk-Adjusted NPV) Pricing	355
	21.0	Questions/Exercises	355
PA:	RT VII	THE LAST LINE OF DEFENCE - SECURITY	
22	Securi	ty Basics	359
22	22.1	Need for Security	359
	22.2		360
	44.2	22.2.1 Advantages to the Creditor	360
		22.2.2 Disadvantages to the Creditor	360
		22.2.3 Advantages to the Borrower	361
		22.2.4 Disadvantages to the Borrower	361
	22.3	Attributes of a Good Security	362
	22.4	Security and Pricing	362
	22.5	Impact of Systematic Risks on Security	364
	22.6	Facility Grades	364
		Questions/Exercises	366
23	Collat	terals and Covenants	367
	23.1	Tangible Security	367
		23.1.1 Deposits (with Banks, Financial Institutions, etc.)	367
		23.1.2 Stock and Shares	367
		23.1.3 Property/Land	367
		23.1.4 Goods	368
		23.1.5 Gold or Other Precious Metals	368
		23.1.6 Bank Guarantees/Letters of Credit	368
	23.2		369
		23.2.1 Unregistered Charges	369

			Contents	xv
		23.2.2 Assignment of Debtors		369
		23.2.3 Corporate Guarantee		369
		23.2.4 Letter of Comfort (LOC)		370
		23.2.5 Letter of Awareness		370
		23.2.6 Letter of Negative Pledge		370
	23.3	Methods of Taking Security		371
·	_0.0	23.3.1 Mortgage		371
		23.3.2 Pledge		371
		23.3.3 Hypothecation		372
		23.3.4 Lien		372
	23.4	Realizing Security		372
		Covenants – A Trigger to Seek Additional Security		373
	20.0	23.5.1 Financial Covenants		373
		23.5.2 Non-Financial Covenants		376
		Questions/Exercises		377
PAl	RT VIII	CREDIT CRISIS		
24	Road (to Credit Crisis		381
	24.1	Credit and Growth		381
	24.2	Role of Banks		382
		24.2.1 Credit Creation		382
		24.2.2 Confidence in Banking		383
		24.2.3 Ultimate Use of Credit		384
	24.3	Formation of Credit Bubbles		385
	24.4	Types of Credit Bubble		386
	24.5	Credit Bubble Explosion		387
		Questions/Exercises		390
25	2008 C	Credit Crisis		393
	25.1	Credit Asset – Prime vs. Sub-Prime		393
	25.2	Securitization		394
		25.2.1 Higher Risk Appetite		394
		25.2.2 Availability of CDS		395
	25.3	US Housing Bubble		396
	25.4	Role of OTC Derivatives		398
		25.4.1 Reasons for Popularity of OTC Derivatives		399
		25.4.2 Complexity and Opaqueness - the Hallmark of OTC	•	
		Derivatives		399
		25.4.3 Systemic Risk and OTC Derivatives		400
	25.5	Role of Rating Agencies		400
	25.6	Why Did the Bubble Burst?		401
	25.7	Consequences		402
		25.7.1 2007		402
		25.7.2 2008		402
		25.7.3 2009		403
	25.8	Impact of the Lehman Collapse		403

•

<u>xvi</u>	xvi Contents		
	25.9	Housing Crisis to Credit Crisis to Economic Crisis	404
	25.10	Common Factors 1929 vs. 2009	406
	25.11	Lessons of the 2008 Credit Crisis	407
		Questions/Exercises	410
Bib	liograp	hy	411
Ind	ex		415

•