Introduction to the world of Managing Credit Risk under Basel

Important Notice

Please Note

Basel's Findings

Basel Accords - Findings

1. Some banks are not very good with carrying out thorough credit assessments or basic due diligence. These include:
    1. **Approving credits based on simple indicators**. Also new information may not be available, specially that used in assessing new counterparties (institutional investors or highly leveraged entities).
    2. **Lack of testing and validation** of new lending techniques without the benefit of sound principles and due diligence (eg use of credit scoring models in the US which led to large losses).
    3. **Subjective decision making** by senior management.
    4. **Lack of an effective credit review process**. Has to be independent from the economic beneficiary of the credit. Credit review has to have the checks and balances to ensure it abides by bank policies, provides judgment on quality, and strengthens accountability.

Credit Process Issues

Basel Accords - Findings contd

5. **Failure to monitor borrower or collateral values**. Lack of periodic financials or appraisals; hence lack of recognition of early warning signs.
6. **Inability to detect credit-related fraud**, due to lack of checking financials, credit, and collateral.
7. **Lack of risk-sensitive pricing**, and hence lack of counter-balance to risks.
8. Lack of validation of **correlation between borrower and underlying asset values** (leasing, asset based financing, real estate). Concentration of income from the assets.
9. **Lack of accounting of business cycle effects**. Hence the use of optimistic assumptions (cyclical industries include retailing, real estate, utilities, consumer lending), where it is linked to the product cycle (rapidly growing etc). Need to stress-test.
10. **Lack of consideration of a downside scenario**. Vulnerability to specific factors (commodities, competition, etc). Again stress tests are needed.

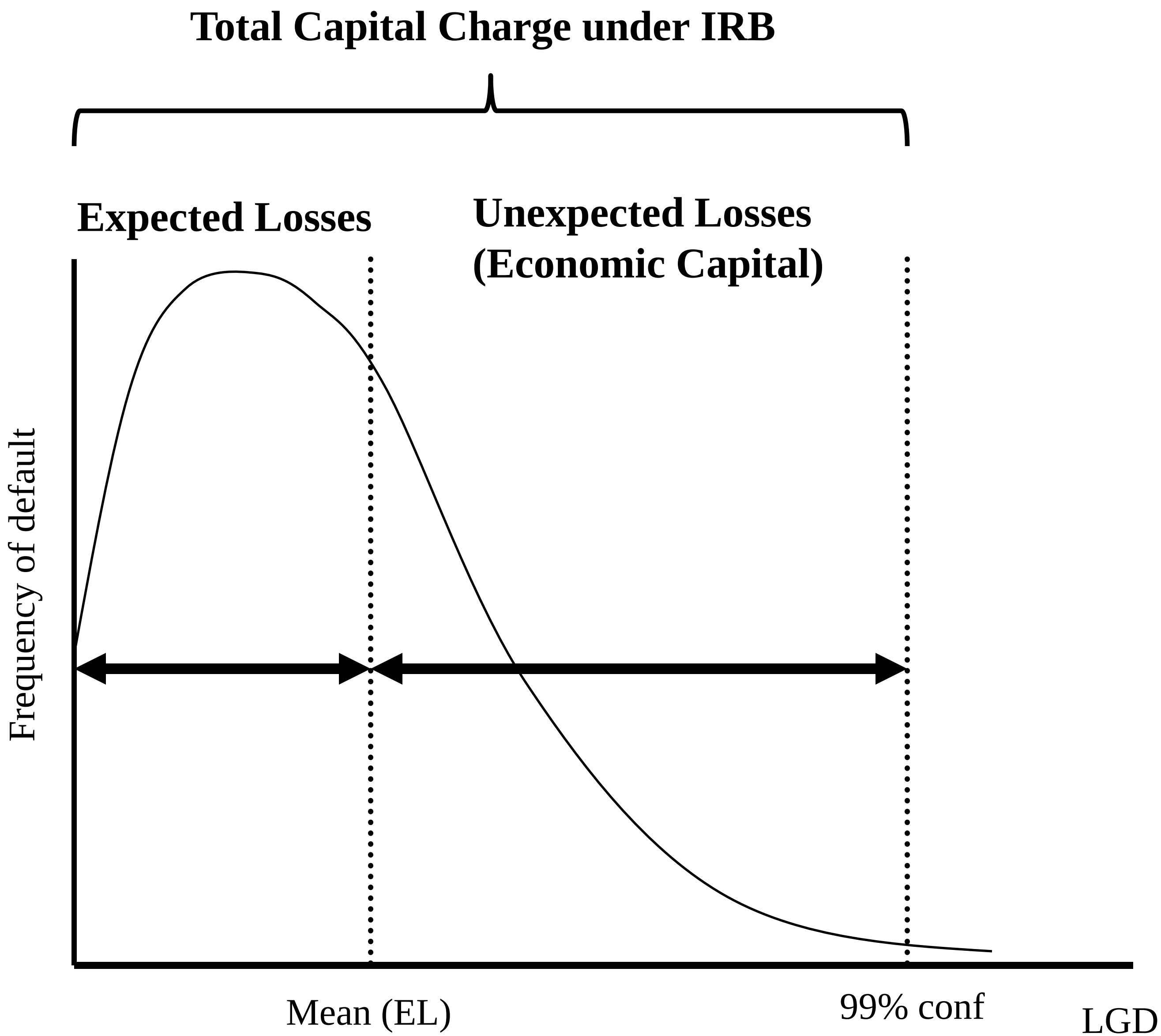
Credit Process Issues

How Risk is defined

Risk and Capital

Capital Adequacy = Risk ➔ Capital	10.5%
Credit Risk + Market Risk + Operational Risk	Risk
177 Criteria: Financial + Mgt + Industry + Environment	Credit Risk
Historical + Projected + Sensitivity	Financial
These Determine Expected Loss (EL) and Unexpected Loss (UL), and Capital (EL+UL)	PD x LGD

EL and UL – Probability Density Function of Losses (PDF)



A Credit Risk Model encompasses all of the policies, procedures, and practices used by a bank in estimating a credit portfolio's PDF.

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Essentially Credit Risk is ……..

$$\frac{\sum \text{each Facility EAR x PD x LGD}}{\text{Total EAR}}$$

Facility Type and Amount (Xsell, R/E, RORAC)

TM (Risk Rating) & RACs (CPPs, SOW)

Collateral, RR Management & Problem Recognition

PRR

Bank needs to manage all these at all times

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Degrees of Sophistication

So How Does Basel Do It?

Capital Adequacy = EAR x 10.5% : eq. PRR of 6+	Standardized
Capital Adequacy = EAR x PD x 45%	IRB F
Capital Adequacy = EAR x PD x LGD	IRB A

# of Defaulters / Total # Obligors per Risk Rating	PDs assessed
1. **Definition of Default:** 7 days, 30 days, 60 days or 90 days + 2. **Risk Rating:** Has to be as granular as possible to remain consistent	Challenges

177 Criteria: Financial + Mgt + Industry + Environment	Risk Rating
Historical + Projected + Sensitivity	Financial

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Example of Risk Weighting under Standardized

Co	Facility No	Type	Limit	Loan Eq.	Risk Adj.
A	1	OD	2,178	100%	2,178
	2	OD	250	100%	250
	3	FX	2,550	50%	1,275
	4	FX	500	50%	250
B	1	OD	817	100%	817
	2	LCR	2,000	100%	2,000
	3	LG	1,089	50%	545
C	1	LC	1,361	20%	272
	2	LG	2,450	50%	1,225
D	1	OD	2,178	100%	2,178
	2	LC	100	20%	20
	3	LG	2,178	50%	1,089
E	1	TL	1651	100%	1,651
	2	FX	550	50%	275
		Total	19,852		14,025
			Capital	8%	1122

1. Assume a 100% RW clients.
2. CCFed total = 14,025
3. Total Capital required: 8%x100%x14,025 = 1,122

Simple Example of Reduced Capital Allocation under IRB

Co	Facility No	Type	Limit	Loan Eq.	Risk Adj.	RR	Loss Norms (bpts)	Weighted Average
A	1	OD	2,178	100%	2,178	AA	0	0
	2	OD	250	100%	250	AA	0	0
	3	FX	2,550	50%	1,275	AA	0	0
	4	FX	500	50%	250	AA	0	0
B	1	OD	817	100%	817	A	0.4	327
	2	LCR	2,000	100%	2,000	A	0.4	800
	3	LG	1,089	50%	545	A	0.4	218
C	1	LC	1,361	20%	272	Baa	7	1,905
	2	LG	2,450	50%	1,225	Baa	7	8,575
D	1	OD	2,178	100%	2,178	Ba	56	121,968
	2	LC	100	20%	20	Ba	56	1,120
	3	LG	2,178	50%	1,089	Ba	56	60,984
E	1	TL	1651	100%	1,651	B	291	480,441
	2	FX	550	50%	275	B	291	80,025
		Total	19,852		14,025		54	756,363
			Capital	8%	1,122		EL =	76
			Basel III	10.5%	1,473		EL+UL =	150

Exposure Converted into Loan Equivalent Amounts

Total Reserves calculated using Loss Norms (in IRB Advanced approach)

Standardized Cap.= 1,473
IRB Capital = 150

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Banking Business Model (RAROC)

Revenues (net of funding costs) ie Marketing / Selling

less Expenses (Wages, Rent, etc) from **Rev/Exp ratio**

less Cost of Credit (Specific Provisions + **EL**)

Net Profits before Taxes and Other Reserves

NP = Economic Capital (**UL**) x ROEC

Based on the adopted Risk Rating System and verified by empirical evidence for measuring PD and LGD

Business Margin

Loss Norm = EAR*PD*LGD

EL and UL

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Application

Issues Relating to Cost of Credit

- Is dependent on various factors including financials, management, industry, environment etc
- Its value is verified using empirical evidence
- Should be controlled and managed over time

PD

- Process to be managed to ensure maximum recoveries
- Can be reduced using specific methodologies
- Also influenced by seniority of exposure and collateral
- Effectiveness of control is assessed using empirical evidence

LGD

- Help balance risk with rewards.
- Covers Credit, Operational and Market Risks
- Involve:
  - ✓ Basel II (following Basel I)
  - ✓ Standardized Approach
  - ✓ IRB Foundation & Advanced Approaches

Basel Accords

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Common Reasons for Corporate Failures

Too much debt	28%
Inadequate leadership	17%
Poor planning	14%
Failure to change	11%
Inexperienced management	9%
Not enough revenue	8%
Other	13%
(source ibisassoc.co.uk)	100%

Total

Management

51%

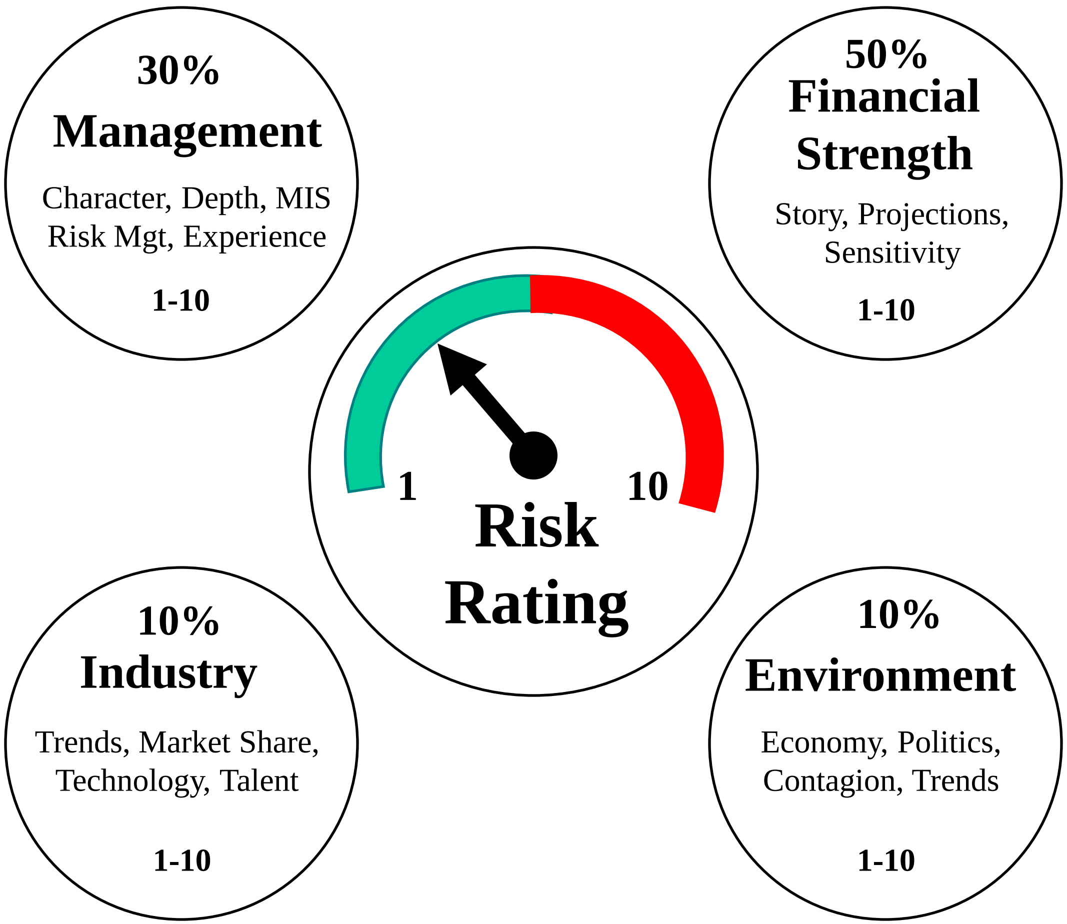
Dunn and Bradstreet rates it higher at 87% covering:

- Incompetence 46%
- Lack of Management Experience 30%
- Lack of Product and Service Experience 11%

Inexperience includes:

1. too much credit to clients
2. inadequate inventory levels
3. inadequate borrowing practices

Pillars of a Risk Rating System



1. Used to show degree of riskiness
2. Includes both financial and non financial elements – each rated on a scale of 1 to 10 (1 lowest risk)

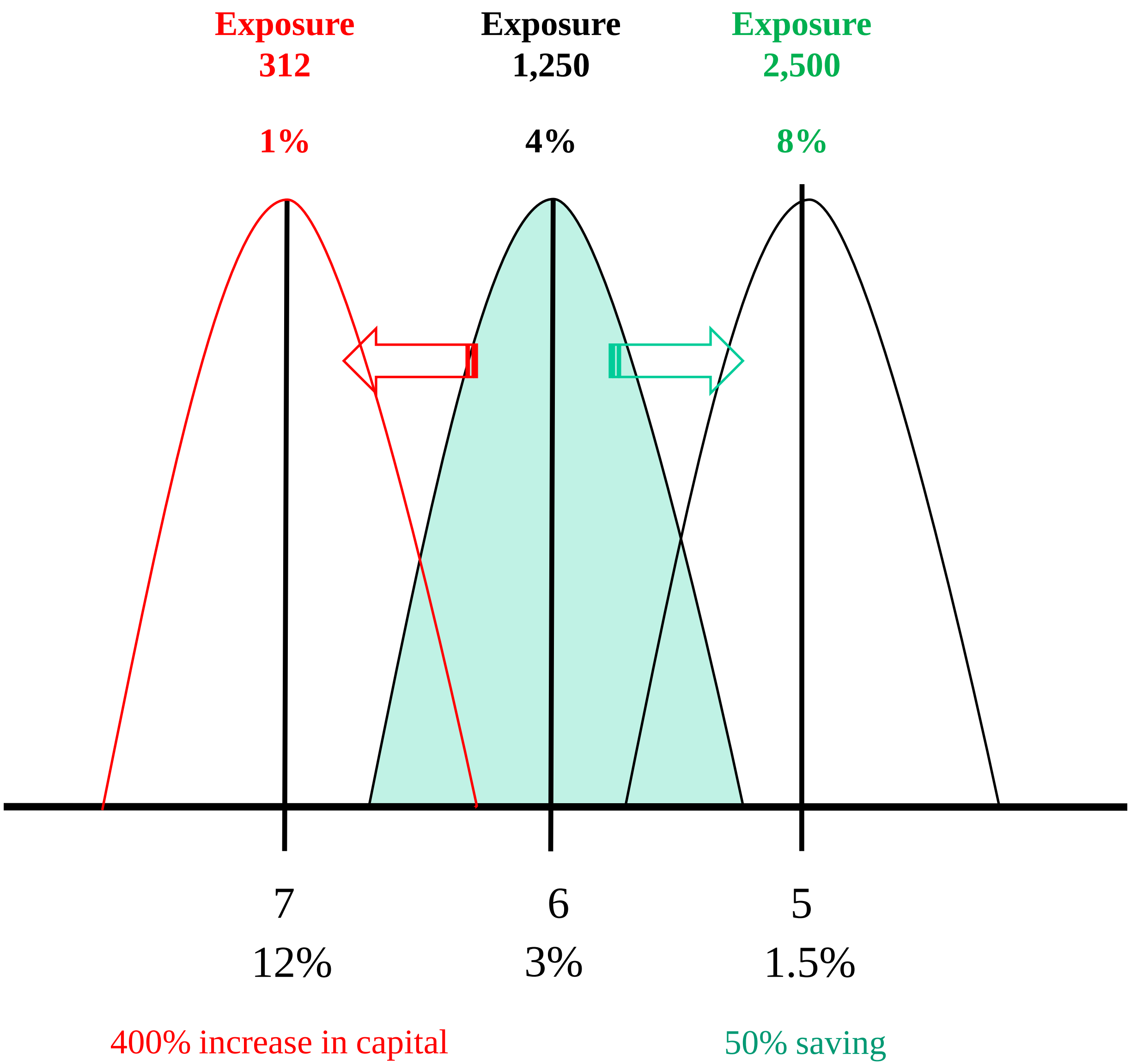
How to Reduce Probability of Default

➢ Identify and Stick to a Target Market and Risk Acceptance Criteria (TM & RACs)	**Chose Your Clients Carefully**
➢ Use appropriate analytical techniques to assess financials, identify associated risks, and measure them	**Assess Financial Performance**
➢ Assess Management, and other non-financial risks	**Assess non-Financial Attributes**
➢ Amount, Duration, Covenants, Collateral ➢ Does the client need it, can it repay on time etc…	**Structure Facilities Appropriately**

How to Reduce Loss Given Default

➢ Hire effective and experienced relationship managers	**Quality Credit Hierarchy**
➢ Understand and React to Early Warning Signals	**Early Problem Recognition**
➢ Manage Internal Information and Approval Processes Efficiently	**Classification System & Control**
➢ Manage Negotiations Effectively ➢ Increase Collateral ➢ Tighten Structuring	**Effective Negotiation Skills**

Why Improve the PRR and How?



for Capital = 100

ROC

By:

1. Type of Client
2. Number of Clients
3. Type of Facility
4. Amount of Facility
5. Collateral Security
6. Early Problem Recognition

The Training: Financial Analysis

How to Analyze Financials?

1. Can Obligor generate Cash?	2. Is CF Enough?	3. What is obligor behavior?	
Business Model	DSCR Interest	Withdrawals	Historical
EBITDA %	DSCR Short Term	Investments	
CC %	DSCR Total Debt	Related Parties	
NOCF + or -			

Sales Growth COGS % SG&A %	+	Receivable Aging Inventory Aging Payable Aging	=	Future IS, BS, CF NOCF DSCRs	Future
Impact on future NOCF and DSCRs from deviations to projections					Sensitivity

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The Consultancy

Basel's Principle for Managing Credit Risk

1. The bank should conduct itself along a **set of Principals** which are subject to Board Approval. These Principals are derived from a variety of experiences, rules and regulations and recommendations from various entities, and are in line with Basel II guidelines.

2. The **objective of these Principals** is to allow the bank to identify, measure and control credit risk, and in the process determine the amount of Capital needed against it. As such, the bank's processes and procedures should allow its personnel to:

   - Establish appropriate **credit environments**;
   - Operate under a sound **credit-granting process**;
   - Maintain an appropriate **credit administration**; and
   - Ensure adequate **controls** over credit risk.

3. The Principals are divided into 2 **groups** covering 18 specific guidelines as follows:

   - **Processes and Procedures**
   - **Risk Management**

Processes and Procedures

1. Governance – Board of Directors
2. Governance – Senior Management
3. Management Role
4. Credit Granting Criteria
5. Establishing Limits
6. Well Defined Process and Procedures
7. Objective and Arm's Length Assessments
8. Credit Administration
9. Monitoring Credits

Coverage

Risk Management

10. Utilizing a Risk Rating System
11. Use of MIS
12. Portfolio Management
13. Stress Testing
14. Reporting and Feedback
15. Prudential Supervision
16. Early Problem Recognition and Remedial Management
17. MIS & Compliance
18. Capital Adequacy Calculation (extra)
19. Responsibilities (extra)

Coverage

The Risk Rating Platform