GREEN FINANCE PROGRAM

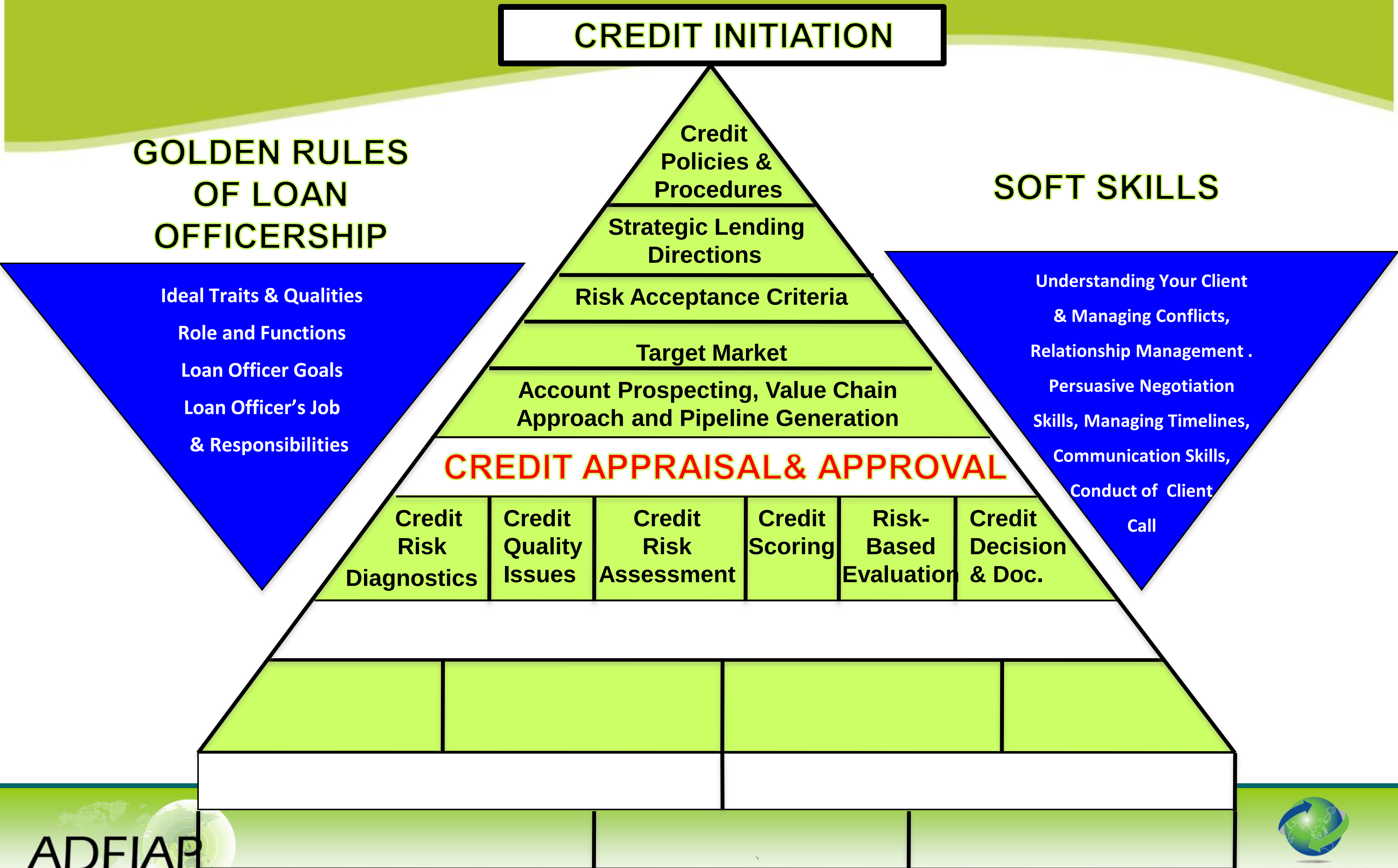
Credit Appraisal and Approval

ADFIAP Consulting

Asia Clean Energy Forum

June 6-10, 2016, ADB Headquarters

PROGRAM OVERVIEW



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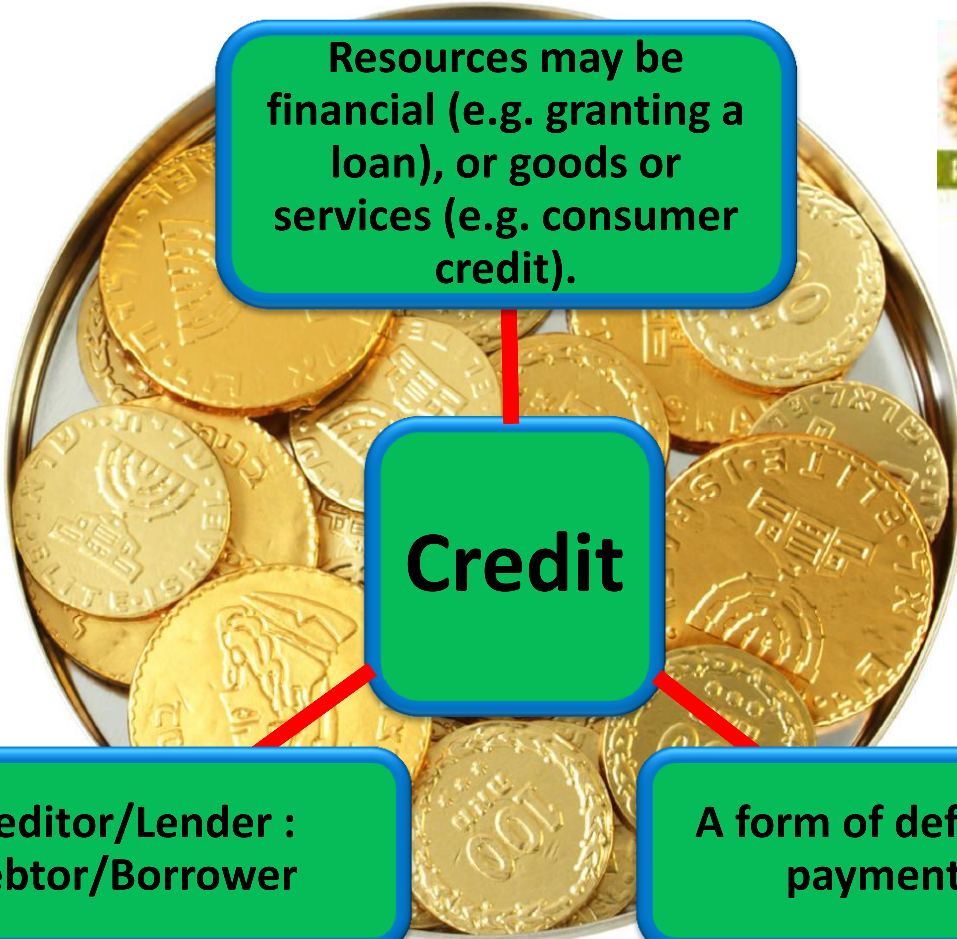
What is “Credit”?

From Latin word “credere”, "to believe"

The trust which allows one party to provide resources to another party where that second party does not reimburse the first party immediately (thereby generating a debt), but instead arranges either to repay or return those resources (or other materials of equal value) at a later date.

Elements of "Credit"



Resources may be financial (e.g. granting a loan), or goods or services (e.g. consumer credit).

Credit

Creditor/Lender : Debtor/Borrower

A form of deferred payment.

Source: Wikipedia

What is "Credit Appraisal"?

The process by which a lender appraises the:

- **technical feasibility**
- **economic viability**
- **bankability**
- **creditworthiness of borrower.**

What is "Project Appraisal"?

Systematic and comprehensive review of the:

- Economic
- Environmental
- Financial
- Social
- technical and
- other such aspects of a project

to determine if it will meet its objectives

What is "Risk-Based Lending"?

A system of lending that is based on an accurate assessment of credit risk in which the loan package (e.g. loan amount, interest and term) is determined and influenced by the credit technology to systematically assess the risk factors involved in a business applying for a loan.

A methodology of lending that systematically measures and manages the credit risk of the **borrower** such that repayment is assured and repayment defaults are minimized.

Compliant with Basel 1 and 2.

When RB Lending Became Popular

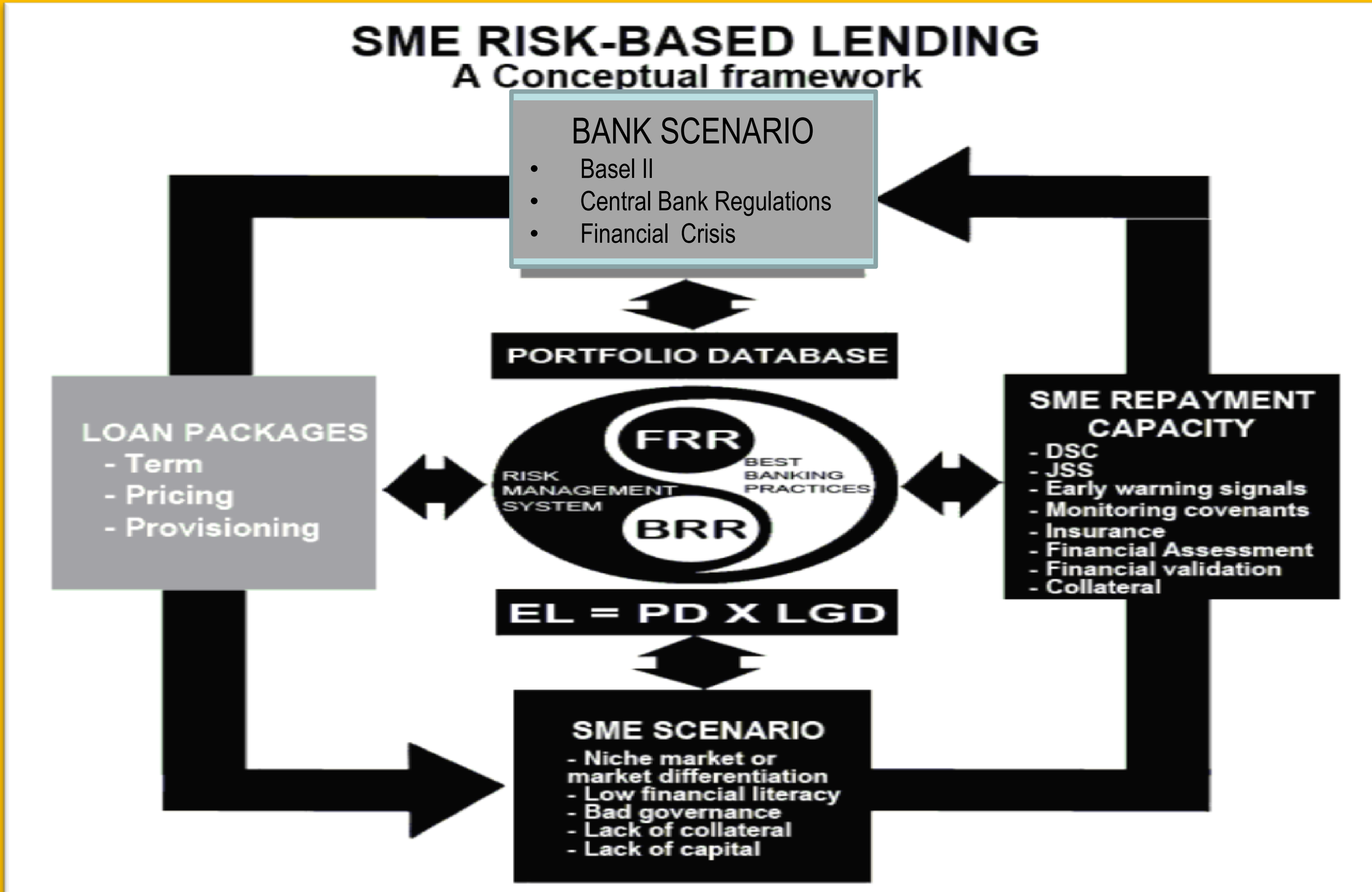
Became more popular:

- **After the collapse of venerable and respected financial institution (Barings Bank) in mid 1990s due to breakdown of risk management functions and internal controls, and**
- **The bursting of the US housing bubble which peaked in approximately 2005–2006 that eventually led to the closure of large financial institutions (e.g. Lehman Brothers, American Insurance Group, ANB Financial, Bear Stearns)**

"Risk-Based Lending" – Basel

- The first Basel Accord (Basel-I) was completed in 1988
- The reason was to create a **level playing field** for "internationally active banks"
- Purpose - to prevent international banks from building business volume without adequate capital backing
- Focus - on credit risk
- Set minimum capital standards for banks
- Became effective at the end of 1992

Risk-Based Lending: Conceptual Framework



Credit Risk Management System (CRMS) -Objectives-

1. Integrate internal risk rating with:

- account supervision
- risk assessment
- and risk mitigation.

2. Provide risk management and control throughout the life cycle of a loan; and

3. Provide a system for:

- documentation,
- access and
- profiling of portfolio data.

CRMS - Key Components

1. Independent Risk Management
2. Focused Lending Unit (SME)
3. Credit Policy Manual
4. Internal Credit Risk Rating
5. Loan Documentation
6. Risk Assessment (CRR review)
7. Credit Risk Pricing and Provisioning
8. Risk Mitigation

CRMS - Key Components

1. **Independent Risk Management**
   - Credit Review
   - Risk Management Policy
2. **Focused Lending Unit (SME)**
   - Normal risk
   - High risk
   - Very high risk
3. **Credit Policy Manual**
   - Credit approval criteria
   - Credit approving authority
   - ICRRS (BRR and FRR systems)
   - Acceptable collateral policy
   - CRMS
4. **Internal Credit Risk Rating**
   - BRR
   - FRR

CRMS - Key Components

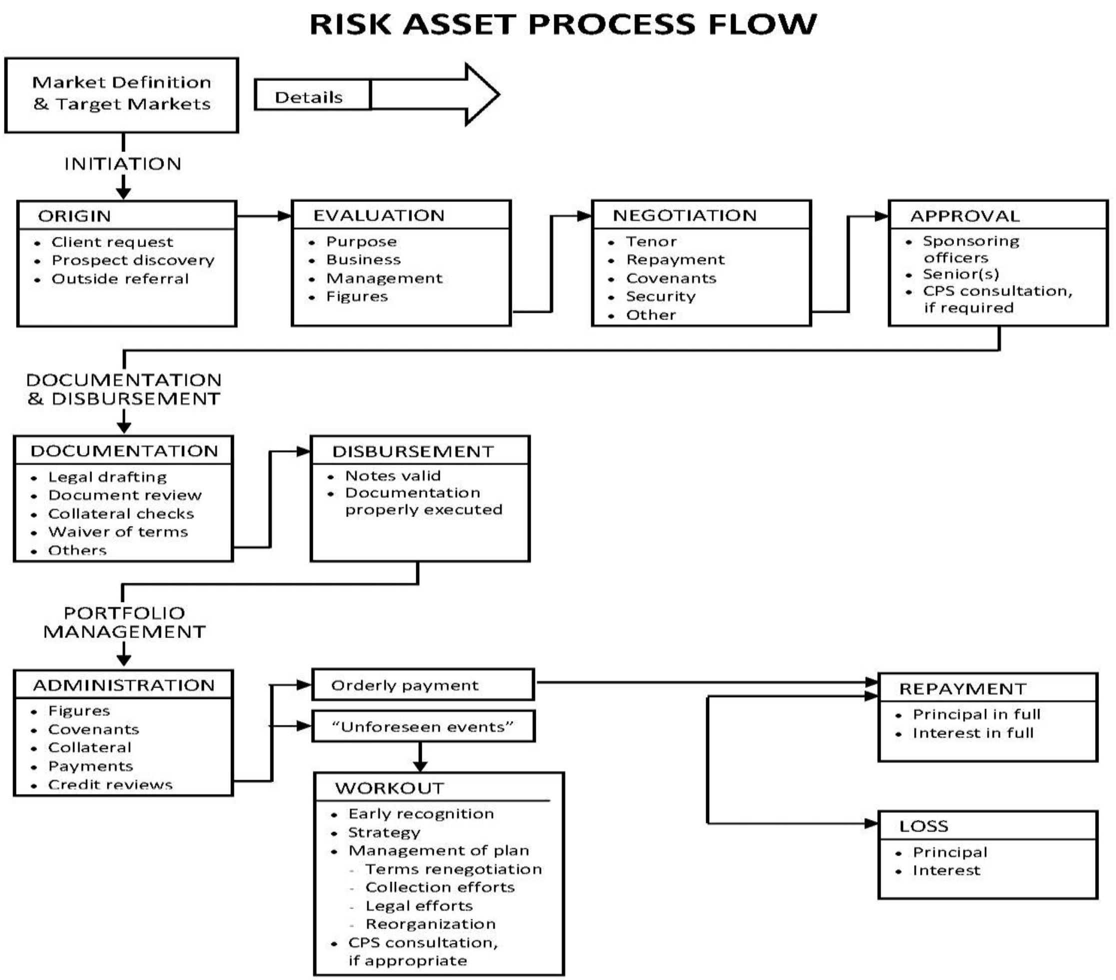
5. Loan Documentation
- Compliance Review

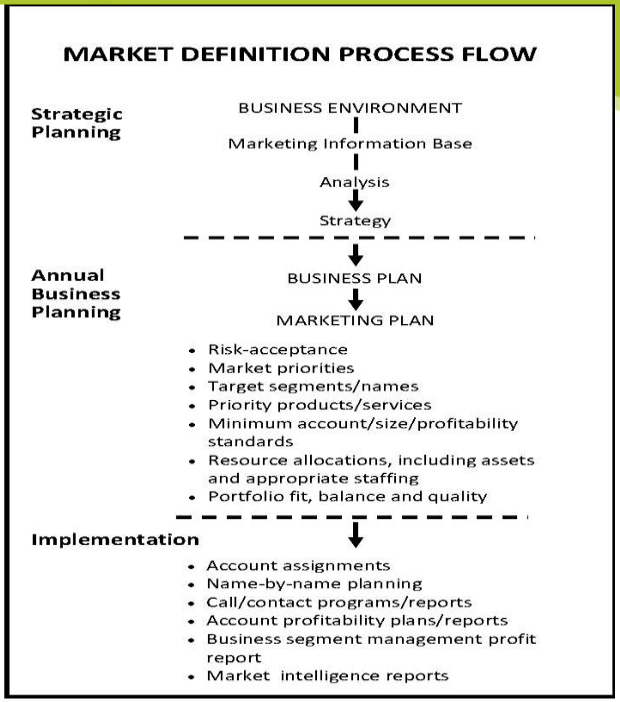
6. Risk Assessment (BRR review)
- Credit Investigation
- Character Checking
- Trade Checking
- Project Visit
- Financial Data Validation and Reconstruction

7. Credit Risk Pricing and Provisioning

8. Risk Mitigation
- Loan monitoring covenants
- Early warning signals

Credit Risk Appraisal Flowchart

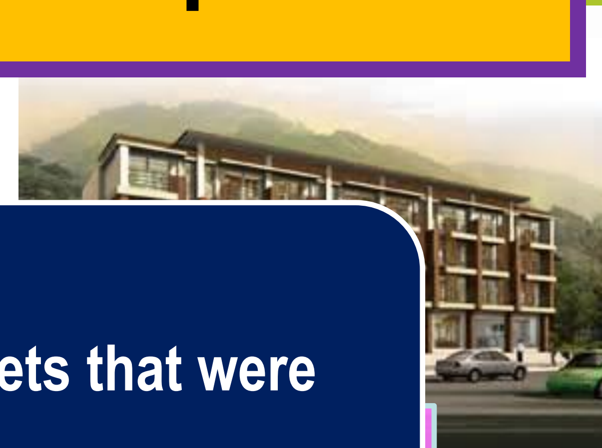




Risk-Based Lending Principles

1. Long term loans to finance long term assets, short term loans to finance short term assets.

Risk-Based Lending Principles



2. Collaterals should be from the assets that were the object of financing.

Risk-Based Lending Principles

3. If the risk cannot be priced, don't approve the loan.

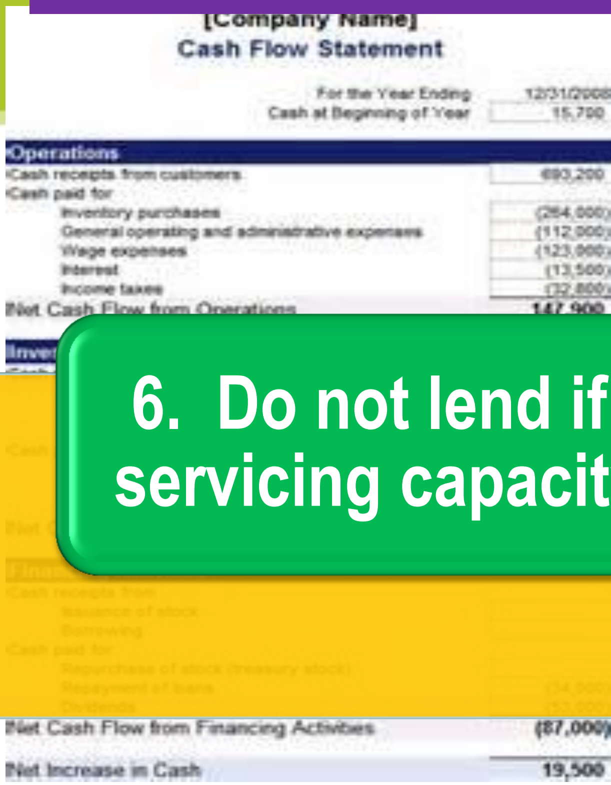
Risk-Based Lending Principles

4. If the credit risk cannot be mitigated, don't finance.

Risk-Based Lending Principles

5. Equity, not loan, should finance expansion.

Risk-Based Lending Principles



[Company Name]

Cash Flow Statement

For the Year Ending	12/31/2008
Cash at Beginning of Year	15,700
Operations	
Cash receipts from customers	693,200
Cash paid for	
Inventory purchases	(264,000)
General operating and administrative expenses	(112,000)
Wage expenses	(123,000)
Interest	(13,500)
Income taxes	(32,800)
Net Cash Flow from Operations	147,900
Net Cash Flow from Financing Activities	(87,000)
Net Increase in Cash	19,500

6. Do not lend if the borrower does not have debt servicing capacity.

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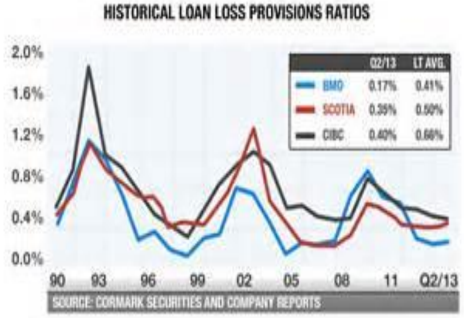
Risk-Based Lending Principles

7. Cover expected losses through provisioning and pricing.



Risk-Based Lending Principles

8. REM as collateral does not prevent the occurrence of default.

Nature of Collateral

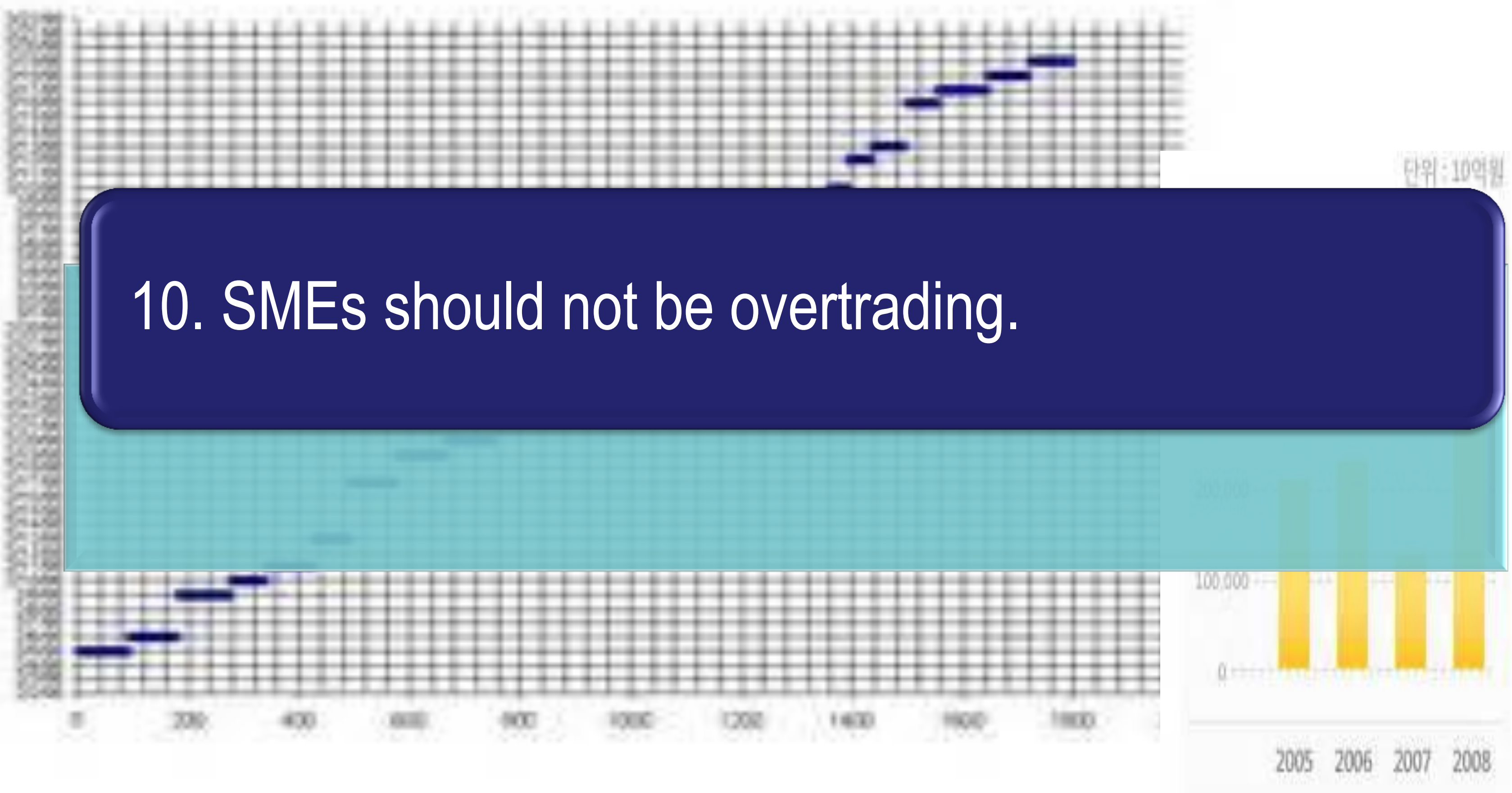
Collateral is just a "Second Way Out" or "Last Resort Protection" in case of default.

Collateral – Not a measure of "Creditworthiness"

Risk-Based Lending Principles

9. If more than 3-4 people should handle credit risk, the risk becomes more an operational risk.

Risk-Based Lending Principles



10. SMEs should not be overtrading.

Risk-Based Lending Principles

11. Start risk assessment with a market and business strategy analysis.

Risk-Based Lending Principles

12. Don't finance expenses, only assets.

Risk-Based Lending Principles

13. Risk mitigation is directly linked to debt servicing capacity.

Risk-Based Lending Principles

14. Judgment and mindset are still more important than the scorecard.

Risk-Based Lending Principles

15. The higher the past due, the more frequent monitoring is needed.

Risk-Based Lending Principles

16. Financial statements are not reliable, that's why they should be validated.

Risk-Based Lending Principles

17. Avoid emotional decisions.

Risk-Based Lending Principles

18. There must be risk sharing between the borrower and the bank.

Risk-Based Lending Principles

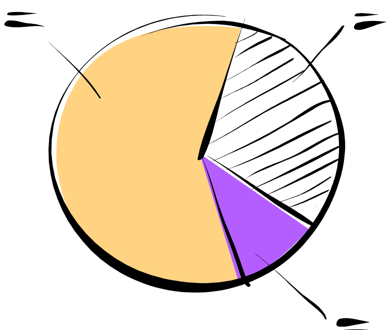
19. Monitoring plan is part and parcel of the approval process.

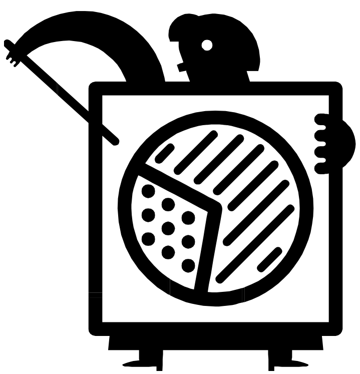
Risk-Based Lending Principles

20. There should always be transparency between the borrower and the bank.

Risk-Based Lending Principles

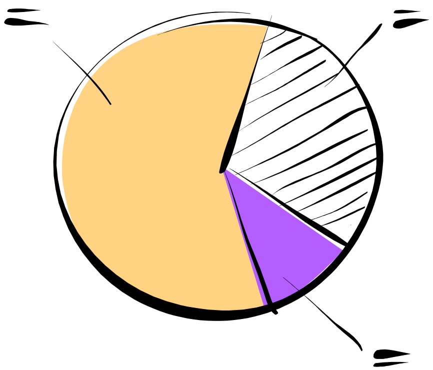
21. 90% of SME loans are working capital loans.





Risk-Based Lending Principles

22. Check your portfolio risk profile, if inconsistent with the SME risk profile, then there is something wrong with the rating.



Nature and Benefits of Risk-Based Lending

1. Identifies Risks
2. Quantifies Risks
3. Classifies Risks
4. Mitigates Risks

- ⇧ Monitoring: Single & Portfolio
- ⇧ Creditworthiness Procedures
- Reduces Costs
  - Operational
  - Admin
  - Work-Out
  - Equity
- ⇧ In Line with Basel Requirements
- Fairer Pricing
- Better Provisioning
- Improves your own Rating ➲ Funds
- Strengthens your market position
- Steered & Focused Growth

Collateral-Based vs. Risk-Based Lending

Factors	Collateral-Based	Risk-Based
1. Basis of approval	• Value, quality of collateral	• Quality of borrower • Capacity to repay loan
2. Financial Assessment	Projections	Track record & current income
3. Pricing	Not risk-based	Risk-based
4. Loan amount	Loan value of collateral	Actual need and repayment capacity
5. Expansion Projects	Usually financed by loan	Financed by equity and loan based on risk-sharing formula
6. Point of view	Looks at transactions as basis for financing	Looks at the business when evaluating the loan application. Relationship building.

Collateral-Based vs Risk-Based Lending

Factors	Collateral-Based	Risk-Based
7. Market Strategy	Not important	Important. Assess competitiveness
8. Post Release Monitoring	None usually	Monitoring covenants as risk mitigants.
9. Collateral	REM collaterals	• Collateral not a must • Mortgage only on assets financed.
10. Organizational Structure	No independent RMU	Independent RMU
11. Credit Packaging	Prone to commit mismatch	Ensures there is no credit mismatch.

Basel Requirement for Risk-Based Lending

Credit Risk Rating (CRR)

Measures the various business risks associated with the business and its owner. CRR is used to make a credit decision.

Facility Risk Rating (FRR)

Measures the quality of the security (or collateral) being offered by the borrower to secure the loan and affects the loan pricing and loan structuring (including the loan terms)

CRR and FRR

CRR measures the various business risks associated with the business and its owner. CRR is used to make a credit decision.

FRR measures the quality of the security (or collateral) offered by the borrower to secure the loan. FRR used for pricing and loan structuring

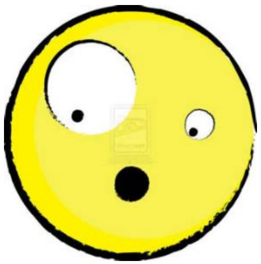
CAMP Analysis

CRR-Scoring; PD

FRR Rating

LGD, EAD, Price, Covenants

CRR Scores and Risk Rating Classification



Risk (CRR)	Description	PD (%)	Score	Risk Quality
1	Excellent	2%	>89	Very low risk
2	Strong	3%	80-89	Low risk
3	*Good*	4%	70-79	
4	Fair	6%	60-69	Moderate risk
5	Acceptable	8%	55-59	
6	Marginal	15%	50-54	**High risk**
7	Unsatisfactory	30%	45-49	
8	Substandard	50%	40-44	**Very high risk**
9	Doubtful	80%	35-39	
10	Expected Loss	100%	<35	

FRR Rating Table

Collateral	FRR	Max % financing	LGD	Term adjustment	Comments
Cash 1 (w/ the lender's FI)	**0**	100 (face value)	**0%**	No adjustment	
Cash 2 (w/ other FIs)	**1**	100 (face value)	**10%**	ST=+1, MT=0 LT=-1	
Shares (blue chips)	**2**	50 (market value)	**20%**	ST=+1, MT=0 LT=-1	Market value should be followed on a monthly basis
Residential building	**3**	70 (market value)	**30%**	ST=+1, MT=0 LT=-1	Market value has to be updated at least on a yearly basis
Commercial building	**4**	60 (Market Value)	**40%**	ST=+1, MT=0 LT=-1	Market value has to be updated at least on a yearly basis.
Large enterprise corp. guarantee	**5**	60 (tangible net worth)	**50%**	ST=+1, MT=0 LT=-1	Market value has to be updated at least on a yearly basis TNW= Total tangible assets minus total liabilities

FRR Rating Table

Collateral	FRR	Max % financing	LGD	Term adjustment	Comments
Equipment	**5**	50 (market value)	**50%**	ST=+1, MT=0 LT=-1	Market value has to be updated at least on a yearly basis
Other tangible assets	**5**	50 (market value)	**50%**	ST=+1, MT=0 LT=-1	Market value has to be updated at least on a yearly basis
Receivables	**6**	70 (total receivables minus 60 days past due and interrelated companies)	**60%**	ST=+1, MT=0 LT=-1	Receivables have to be monitored at least on a monthly basis
Inventory	**7**	40 (finished product and raw material)	**70%**	ST=+1, MT=0 LT=-1	Inventory has to be monitored at least on a monthly basis
SME corporate guarantee	**8**	60 (tangible net worth)	**80%**	ST=+1, MT=0 LT=-1	The value has to be verified on a yearly basis
Personal guarantee	**9**	60 (tangible net worth)	**90%**	ST=+1, MT=0 LT=-1	The value has to be verified on a yearly basis
Other intangible assets	**9**		**90%**	ST=+1, MT=0 LT=-1	
No collateral	**10**		**100%**	ST=+1, MT=0 LT=No	

What is CAMP?

CAMP stands for Cash, Management, Marketing and Production.

A scale of 10 is used, where 1 means very low risks and 10 is very high risk and ripe for collection.

Components of CAMP

Cash – (43%)
- Current Ratio
- DE ratio
- DSC
- AR Level

Administration (23%)
- EOM
- Age, health & succession
- Financial capacity (Networth)
- Attitude to Banks/Lenders

Market (11%)
- Cost or Differentiation
- Customers
- Sales (past 3 years) – Increasing, decreasing or no sufficient data?

Production (23%)
- No. of suppliers
- Inventory turnover
- Potential to increase
- Business location

Administration (23 Points)

Indicators	Item Mark
I. Administration	
Manpower capability for green projects	
With formal training and experience at least 2 years	5
With experience for < 2 years	3
With formal training but no experience	1
Training ongoing	0
Experience of owners/management	
>15 years	5
15≥ EOM ≥5	3
5 > EOM	0
Owner age, health and succession	
Less than 50 years old, with succession plan	5
Less than 50 years old, with no succession plan	3
More than 50 years old, with succession plan	3
With health concerns, with succession plan	3
More than 50 years old, with no succession plan	0
With health concerns, with no succession plan	0

Administration (23 Points)

Financial capacity of owners (personal net worth)	
Above 4x the total loans	4
Between 2.1 and 4.0	3
Between 1.0 and 2.0	2
Less than 1	0
Attitude to banks (Based on credit investigation)	
With established credit track record of at least 3 years	4
Limited track record with banks, with no adverse finding	2
With adverse findings	0
Maximum points/Sub-total	**23**

Market (11 Points)

II. Market	Item Mark
Clients	
No client more than 10% of sales	5
1 client between 10% to 20% of sales	3
More than 1 client over 10% or 1 client over 20%	1
Increase of Sales (average of last 3 years)	
≥10%	6
5%≤ Increase <10%	5
5%< or Stable	2
Decreasing sales or insufficient data	0
Maximum points/Sub-total	**11**

Production (23 Points)

III. Production	Item Mark
Environment Compliance Certificate Requirements	
Fully compliant (no penalty/sanction or restriction on business operation)	8
At least 1 for compliance within 1 year but no sanction/penalty or restriction on business operation.	4
A least 1 for compliance and constituting ground for sanction/penalty or restriction on business operation if not addressed within 1 year.	2
Sanction/penalty or restriction on business operation already imposed.	0
Suppliers	
No supplier	4
No supplier more than 20%	3
1 supplier between 20% and 30%	2
More than 1 supplier over 20% or 1 supplier over 30%	1

Production (23 Points)

Inventory	Item Mark
No inventory/Fast-moving inventory	4
Inventory level acceptable for type of industry	2
Slow-moving inventory/Perishable and/or high tech	0
Production/service capacity and potential to increase	
May accommodate expanded operations	4
Just sufficient for existing market	2
Inadequate for existing market	0
Business location (in terms of market and supply)	
Excellent location for type of business	3
Acceptable location for type of business	2
Poor location for type of business	0
Maximum points/Sub-total	**23**

Cash (43 Points)

IV. Cash	
Savings as a % of Operating Cost due to green projects	
Savings of > 50%	8
Savings of > 40% but < 50%	6
Savings of > 30% but < 40%	4
Savings of >20% but <30%	2
Savings of 20% and below	0
Current Ratio (excluding past due ARs and obsolete inventory)	
CR > 3	5
2 < CR ≤ 3	4
1 ≤ CR ≤ 2	3
CR < 1	0
Debt-Equity Ratio	
DER ≤ 50:50	5
50:50 < DER ≤ 67:33	4
67:33 < DER ≤ 75:25	3
DER > 75:25	0

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Cash (43 Points)

Debt servicing capacity	
DSC > 2	20
1.5 < DSC $\leq$ 2	10
1 $\leq$ DSC $\leq$ 1.5	5
DSC < 1	0
Accounts receivable level	
AR $\leq$ 90 days	5
90 days < AR $\leq$ 180 days	3
AR > 180 days	0
Maximum points/Sub-total	**43**
Total Maximum Points/Total Score	**100**
Credit Risk Rating (CRR)	**Passing Mark**
	5

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Pricing of Retail Loans - Formula

Loan Price	P	Loan Interest Rate
Mark-up Margin	S	Desired Return on Assets
Equity Cost	CE	Cost of Equity (CAR) X Market Interest Rate
Risk Cost	CR	PD (CRR) X LGD (FRR)
Admin Cost	CF	Overhead Expenses
Cost of Funds		Cost of Loan Funds

Provisioning Formula

Total Credit Risk (Expected Loss, EL) = PD x EAD x LGD

- EL($) = Cost of credit risk that requires provisioning

I. PD = Probability of Default; a function of BRR due to DSC

II. EAD (Exposure At Default) – latest outstanding balance based on books

III. LGD (Loss Given Default) – function of FRR

- LGD = (OL + WE + CC) – RVC, where:
- OL = Outstanding loan amount or approved credit line
- WE = Workout expenses
- CC = Carrying cost (i.e. interest foregone)
- RVC = Realizable value of collateral


THANK
YOU!