Credit Analysis of International Banks

Summer Seminar 2016

Frank Scherf | GRM CRC FISP FI | Frankfurt / 07.07.2016

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Agenda

1. ABOUT US - Organizational Structure of Commerzbank Group

Board of Managing Directors

Group Management

- Group Compliance
- Group Finance
- Group Finance Operations
- Group Audit
- Group Investor Relations

- **Group Credit Risk Management Core**
- Group Risk Controlling & Capital Management
- Group Market Risk Management
- Group Intensive Care
- Group Credit Risk Management Non-Core

- Group Development & Strategy
- Group Communications
- Group Legal
- Group Human Resources
- Group Treasury

- Group IT
- Group Organization
- Group Support
- Group Security

Operating Units

Core Bank

Private Customers
- Private Customers
- Retail and Business Customers
- Wealth Manage-ment
- Direct Banking
- Commerz Real

MSB (Mittelstandsbank)
- Corporate Banking
- Small and Medium Enterprises
- Large Corporates
- Corporates International
- **Financial Institutions**

CEE
- mBank

Corporates & Markets
- Advisory & Primary Markets
- Client Governance Performance
- Equity Markets & Commodities
- Fixed Income & Currencies
- Credit Port. Management
- Research

Non Core

Non-Core Assets
- Commercial Real Estate
- Deutsche Schiffsbank
- Public Finance

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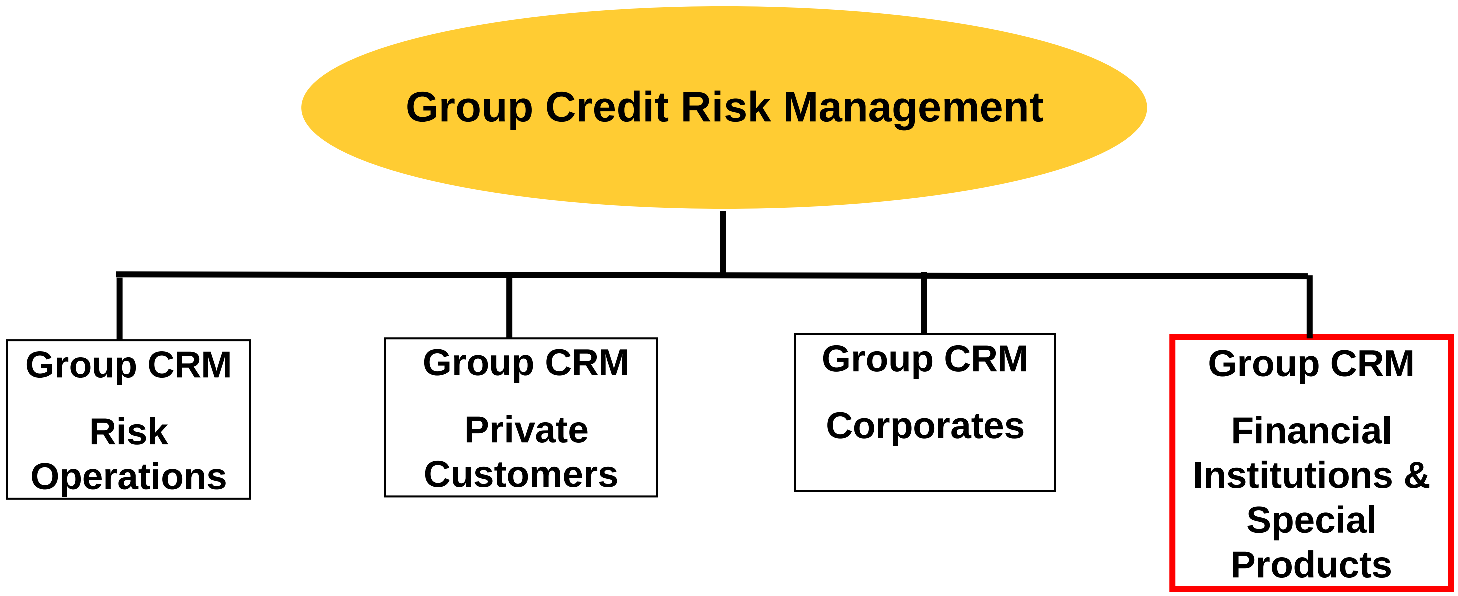
1. ABOUT US: Group Credit Risk Management



1. ABOUT US: CRC–FISP FI

Group Risk Management

Group Credit Risk Management

Group Credit Risk Management Financial Institutions & Special Products (CR FISP)

LBO / Structured Finance / ABS Conduit

NBFI

Financial Institutions

Credit Risk & Special Products (USA)

Public Sector & Country Risk

- **Global Banks, Australia & Japan**
- **Europe, North America & South Africa**
- **Asia & Latin America**
- **Central & Eastern Europe**
- **Middle East & Africa**

Responsible for Developed Market & Emerging Market

- In consideration of risk profiles and analyst's focus

- Use of different credit processes

Analysis teams in regional principle

- Building up regional know-how

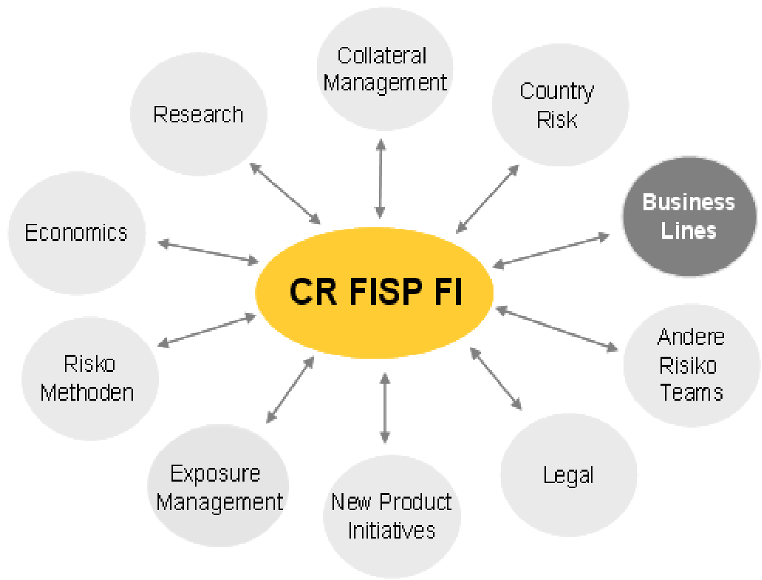
- Consideration of adequate communication

Portfolios are assigned considering: geographic location, regional similarities, portfolio size & complexity

1. ABOUT US
Roles & Responsibilities – Strategic Independent Partner

› **Financial Institutions / Banks**

- Identify and actively manage credit risks
- Prepare and approve credit applications & ratings
- Guide business through approval processes
- Advise on risk mitigation and hedging strategy
- Accompany Master or Loan Agreement negotiation
- Projekt management: enhance our customized IT solutions and platforms



Our mission is an efficient and forward-looking risk management from a risk-return perspective while securing the bank‘s equity and keeping the liquidity risks controllable at all times!

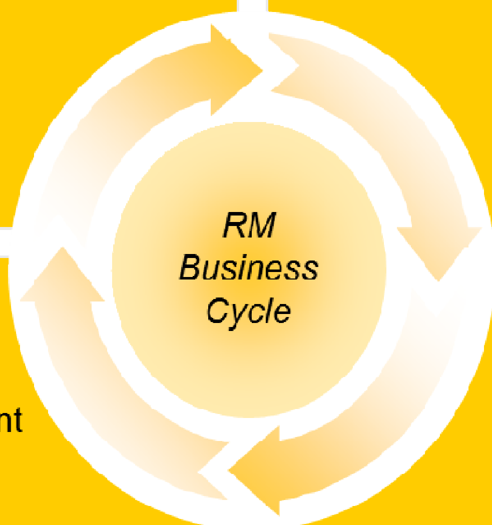
1. ABOUT US: Risk Management Cycle

Application

- Limit Applications
- Annual Reviews

Rating / Analysis

- Precondition for a New Relationship
- Credit Based Rating Actions
- Annual Rating Updates



Monitoring / Follow-up

- Pro-active Risk Management Approach
- Limit / Exposure Management
- Early Warning Signals

Decision / Approval

- Efficient & Risk Adjusted Credit Processes
- IT-based Solutions to Implement and Document Approvals

2. RISK IDENTIFICATION
Challenges - Prevention is better than cure

- All risks must be fully understood, this requires an open discussion of all risks involved. Transparency and communication is crucial for an effective risk management
  - If something appears to be too complex to comprehend, it was probably designed that way
  - The major risk drivers must be transparent and potential interdependence of risk drivers needs to be disclosed
- Risks are interconnected and need to be managed in an integrated way (no bunker mentality)
- Risk Management know-how needs to be spread within the whole institutions **(3 lines of defence approach)**
  - Front Office as the „first line of defence“
  - Risk Management as “second line of defence”
  - Audit/Regulator as “third line of defence”

2. RISK IDENTIFICATION
Challenges - Risk is measured and managed by people not mathematical models

- Models reduce complexity of the real world by making behavioural assumptions…
- They often require data (e.g. correlations) which are derived from past experience
- These limitations have to be taken into account when assessing the model output → e.g. validity of market values in times of stress / historic asset correlation
- Results therefore need to be complemented by real world experience for decision making
- **It is an illusion to be able to calculate all risks 100% accurately**

2. RISK IDENTIFICATION

Types of Risk - Credit risk is the leading source for problems in banks worldwide

Credit Risk

- Cash risk
- Replacement risk
- Other

Market Risk

- Interest rate risk
- FX risk
- Equity / asset prices risk
- Commodity prices risk
- Liquidity risk

Operational Risk

- Failure of systems
- Frauds
- Typing errors
- Legal risk

Reputational Risk

- Conflict of Interest
- Religious
- Nuclear
- Weapons

Credit risk is the leading source of problems in banks worldwide.
Risk types are almost always interlinked with each other.

2. RISK IDENTIFICATION

Credit risk is defined as the potential that a borrower or counterparty will fail to meet its obligations in accordance with agreed terms.

Credit Risk

Cash Risk

Replacement Risk

Other
Issuer Risk
Settlement Risk
Contingent Liabilities
Country Risk

- “Traditional” form of credit risk
- **Risk:** Borrower (guarantor) of cash funds does not perform (Principal, Interest, Fees)
- **Transaction Types:** Loans & overdraft facilities
- **Exposure Profile:** Constant over lifetime, unless amortizing or accreting
- **Risk Mitigation:** Collateral, Covenants, Credit Derivatives / Guarantees

2. RISK IDENTIFICATION

Credit risk is defined as the potential that a borrower or counterparty will fail to meet its obligations in accordance with agreed terms.

Credit Risk

Cash Risk

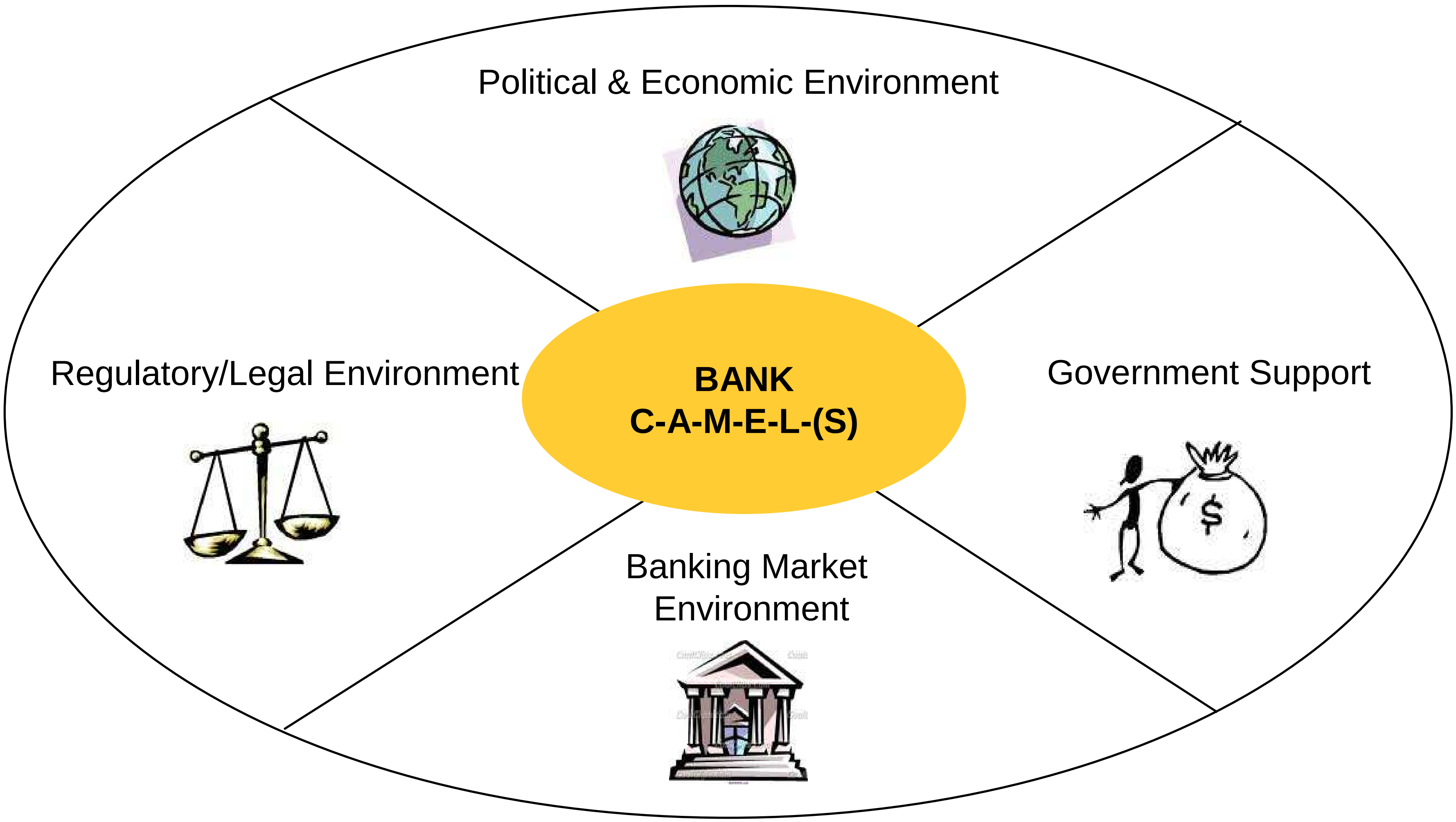
Replacement Risk

Other
Issuer Risk
Settlement Risk
Contingent Liabilities

- Non-traditional form of credit risk (**market-price risk induced**)
- **Risk:** Resulting from transactions where transaction date and the ultimate settlement date differ.
- **Transaction Types:** FX/IR Swaps, Repos, CDS, etc.
- **Exposure Profile:**
  - Current Exposure (MTM) **+** Future Potential Exposure over contract lifetime
  - Actual credit losses occur if counterparty defaults and contract is negative MTM
- **Risk Mitigation:** Collateralized Trading, Credit Derivatives, Break Clauses, Close-out Netting

3. RISK ASSESSMENT

Factors influencing obligors' creditworthiness



3. RISK ASSESSMENT

Political & Economic Environment

- **Economic Environment**
  - Health and Structure of the Economy
  - Macro-economic Indicators (GDP, Unemployment, FX–Reserves…)
  - Fiscal Policy (current account status)
  - Monetary Policy (Debt Ratio, Interest Rate, Inflation Rate,…)
  - Exchange Rate Policy
- **Political Environment (esp. in EM Markets)**
  - Political Stability
  - Government Effectiveness and Transparency
  - Attitude towards Corruption

3. RISK ASSESSMENT
Banking Market Environment / Probability of Government Support

› **Banking Market Characteristics**
  - › Level of competition / Degree of system consolidation
  - › Transparency - Disclosure of Risk Relevant Information, Reporting (timeliness & frequency)
  - › Accounting Standards (local GAAP, IFRS,…)
  - › Franchise Value (market share, diversification)

- **Support Environment**
  - Shareholder Background / State-Owned Bank
  - Ability & Willingness of Support
  - Track-Record of Support

“Understanding the financial system and the bank’s role within”

3. RISK ASSESSMENT
Regulatory / Legal Environment

› **Prudential Regulation**

- Quality of bank regulation, supervision, and enforcement
- Capital Adequacy Standards
- Minimum Capital Requirements
- Legal Reserves Requirements
- Liquidity Requirements
- Asset Quality Requirements (i.e. Legal Lending limits, NPL, Provisioning, Write-off standards etc.)

› **Legal Environment**

- Enforceability of Collateral / Contracts

"A good regulator clearly improves the risk perception of a banking market."

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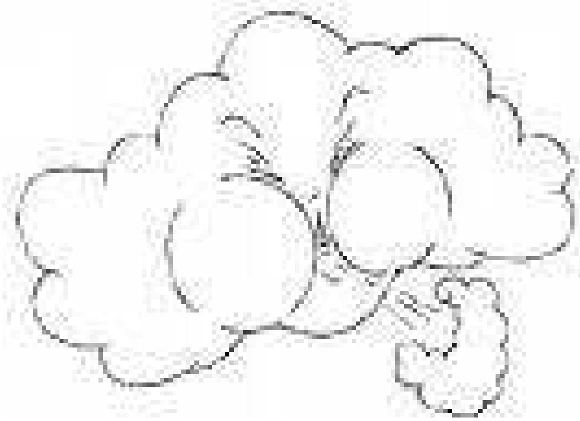
4. COUNTERPARTY ANALYSIS
Two sides of a bank's Balance Sheet – The left side and the right side

Assets	Liabilities
	

„The left side of the balance sheet has nothing right and the right side of the balance sheet has nothing left. But they are equal to each other. So accounting-wise we are fine."

AIG Vice Chairman Jacob Frenkel

(dispensing some gallows humor at a bankers gathering on October 11, 2008)

4. COUNTERPARTY ANALYSIS

Typical structure of a bank balance sheet *(Commerzbank 2014)*

Balance sheet

Assets | €m	Notes	31.12.2014	31.12.2013[1]
Cash reserve	(7, 46)	4,897	12,397
Claims on banks	(8, 9, 10, 47, 49, 50, 79)	80,036	87,545
of which pledged as collateral	(78)	–	29
Claims on customers	(8, 9, 10, 48, 49, 50, 79)	232,867	245,938
of which pledged as collateral	(78)	–	–
Value adjustment portfolio fair value hedges	(11, 51)	415	74
Positive fair values of derivative hedging instruments	(12, 52)	4,456	3,641
Trading assets	(13, 53, 79)	130,343	103,616
of which pledged as collateral	(78)	5,532	3,601
Financial investments	(14, 54, 79)	90,358	82,051
of which pledged as collateral	(78)	569	1,921
Holdings in companies accounted for using the equity method	(4, 55)	677	719
Intangible assets	(15, 56)	3,330	3,207
Fixed assets	(16, 57)	1,916	1,768
Investment properties	(18, 59)	620	638
Non-current assets and disposal groups held for sale	(19, 60)	421	1,166
Current tax assets	(26, 58)	716	812
Deferred tax assets	(26, 58)	3,358	3,146
Other assets	(17, 61)	3,199	2,936
Total		**557,609**	**549,654**

Liabilities and equity | €m	Notes	31.12.2014	31.12.2013[1]
Liabilities to banks	(10, 20, 62, 79)	99,443	77,694
Liabilities to customers	(10, 20, 63, 79)	248,977	276,486
Securitised liabilities	(20, 64, 79)	48,813	64,670
Value adjustment portfolio fair value hedges	(11, 65)	1,278	714
Negative fair values of derivative hedging instruments	(21, 66)	9,355	7,655
Trading liabilities	(22, 67, 79)	97,163	71,010
Provisions	(23, 24, 68)	5,251	3,875
Current tax liabilities	(26, 69)	239	245
Deferred tax liabilities	(26, 69)	131	83
Liabilities from disposal groups held for sale	(19, 70)	142	24
Other liabilities	(71)	7,499	6,551
Subordinated debt instruments	(27, 72, 79)	12,358	13,714
Equity	(30, 73, 74, 75)	26,960	26,933
Subscribed capital	(73)	1,139	1,139
Capital reserve	(73)	15,928	15,928
Retained earnings	(73)	10,383	10,660
Silent participations	(73)	–	–
Other reserves	(5, 6, 14, 73)	–1,396	–1,744
Total before non-controlling interests		26,054	25,983
Non-controlling interests	(73)	906	950
Total		**557,609**	**549,654**

Customer loans, interbank loans, securities, cash assets, intangible & fixed assets, deferred tax assets

Deposits, interbank funding, wholesale funds (trading & securtized liabilities), subordinated debt, equity

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4. COUNTERPARTY ANALYSIS

Typical structure of a bank income statement *(Commerzbank 2014)*

Income statement

€m	Notes	1.1.–31.12.2014	1.1.–31.12.2013[1]	Change in %
Interest income	(31)	12,555	13,871	–9.5
Interest expenses	(31)	6,948	7,710	–9.9
Net interest income	(31)	5,607	6,161	–9.0
Loan loss provisions	(32)	–1,144	–1,747	–34.5
Net interest income after loan loss provisions		4,463	4,414	1.1
Commission income	(33)	3,837	3,776	1.6
Commission expense	(33)	632	570	10.9
Net commission income	(33)	3,205	3,206	0.0
Net trading income	(34)	377	–96	.
Net income from hedge accounting	(35)	16	14	14.3
Net trading income and net income from hedge accounting	(34, 35)	393	–82	.
Net investment income	(36)	82	17	.
Current net income from companies accounted for using the equity method	(37)	44	60	–26.7
Other net income	(38)	–577	–87	.
Operating expenses	(39)	6,926	6,797	1.9
Restructuring expenses	–40	61	493	–87.6
Pre-tax profit or loss		**623**	**238**	**.**
Taxes on income	(41)	253	66	.
Consolidated profit or loss		**370**	**172**	**.**

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4. COUNTERPARTY ANALYSIS

Structural approaches to asses a banks creditworthiness

CAMEL(S)

Capital	**Capital structure** **Leverage effect**
Asset Quality	**The most important facet of bank analysis**
Management	**How does the bank manage its business and risks**
Earnings	**The most realistic indicator for a bank's „franchise value"**
Liquidity	**Often the main reason of bank failures**
(Sensitivities)	**Market risks**

CAMEL(S) Method standardized the bank analysis

4. COUNTERPARTY ANALYSIS

Capital Adequacy - Capital Structure

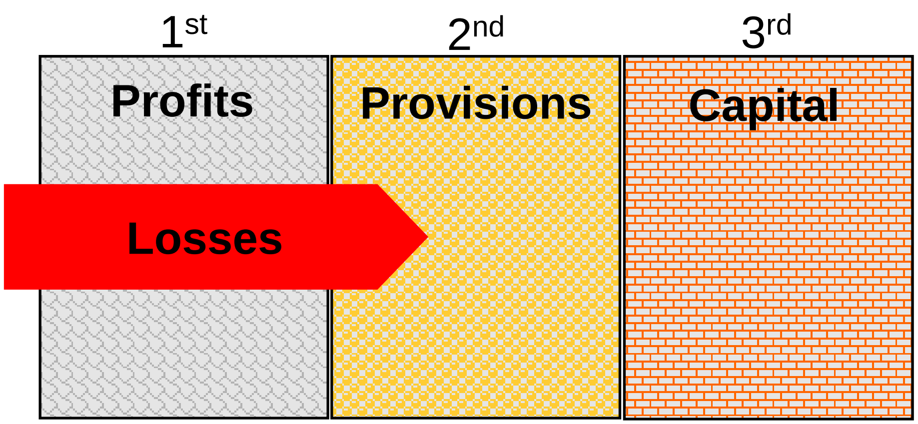
Regulatory capital
(simplified)

Core Tier 1		Share capital
		Retained earnings
		Other Comprehensive Income
	less	Goodwill Deferred Tax Assets Minority Interest
Add.T 1		Preference Shares
		Innovative capital
Tier 2		Subordinated debts

- Regulatory Capital is an artificial construct - not to be confused with shareholder's equity
- Regulatory Capital ratios are based on risk weighted assets definition
- **Quality of the capital base need to be assessed**
  - Available Capital Resources
  - Capital Structure, e.g. share of subordinated debt?
  - Tenor structure of subordinated debt?
  - Intrinsic value of intangible assets? (e.g. large share of goodwill)
  - Capital generation capacity (internal / external)?

4. COUNTERPARTY ANALYSIS
Capital Adequacy

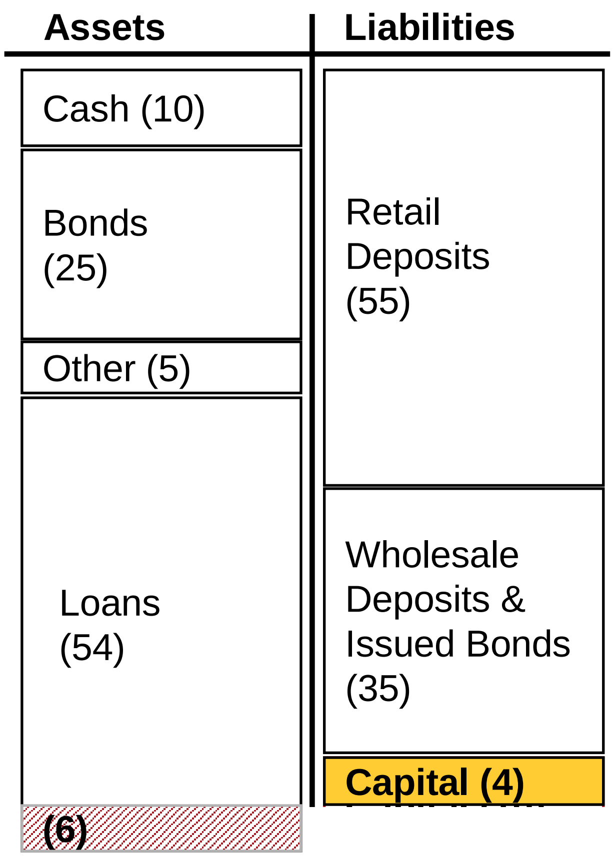
Lines of Defence against Losses



Source: 'The Bank Credit Analysis Handbook' - *Jonathan Golin* -

- Profits form the first line of defence against loan losses
- New provisioning will be deducted from profits to compensate for identified likely loan loss or expected losses
- Cumulated provisions (Loan Loss Reserve) form the second line of defence
- Write-offs of actual loan losses will come from here
- **Finally, capital is the last line of defence covering unexpected losses**

4. COUNTERPARTY ANALYSIS
Capitalisation - Leverage Effect



As banks are mostly highly leveraged (compared to corporate clients), small losses can already have a large effect

In this example loan losses of 10% lead to capital reduction of 60%

In contrary the leverage also triggers incentive to take risks!

4. COUNTERPARTY ANALYSIS

Asset Quality - the most important and the most difficult facet of bank analysis

Asset Quality Indicators

- Total Loan Growth
- Concentration Risk
- Non-Performing Loans (NPL Ratio)
- Provisions / Write-offs
- Loan Loss Reserves (NPL Coverage Ratio)

Rules of Thumb

› 5-15% loan growth in an emerging economy is respectable

› Per annum loan growth > 20% should be scrutinized

› NPL ratio ≤ 2% is excellent

› NPL ratio > 20% indicates severe problems

› NPL Coverage Ratio 25-50% is weak

Problems

› Level of Disclosure / Timeliness of disclosure

› Asset Quality metrics are lagging indicators

› Strongly biased in case of strong asset growth

› Therefore, esp. in emerging markets, they are of limited worth as a early warning signals

4. COUNTERPARTY ANALYSIS

Management - How does the bank manage its business / its risks

Management & Credit Culture

Management Team / Experience
Management Turnover

Corporate Governance and Control

Risk Attitude, Credit Culture, Track Record

Risk Management Capabilities
Approval Processes / Tools / Controls

Quality and Quantity of Reporting, Transparency

"The management is experienced and conservative"
(Always?)

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4. COUNTERPARTY ANALYSIS

Earnings - The most realistic indicator for a banks “franchise value”

Earnings & Profitability

- Net Interest Income and Non-interest Income
- Funding Expenses
- Extraordinary Items and Loan Provisionning
- Cost Income Ratio
- Profitability Ratios

› **RM needs to assess the “quality” of earnings**

  › Sustainability / Recurrence / Diversification

  › Are earnings based on the bank’s core competences or do they have one-off character

› Earnings are the first line of defence against losses (Provisions are build up through earnings)

› **Profitability ratios as indicators for a bank’s ability to generate capital internally**

4. COUNTERPARTY ANALYSIS

Liquidity & Funding - Often the main reason of bank failures

Liquidity & Funding

- Deposit Base
- Funding Structure
- Size of the Institution
- Key Liquidity Ratios

› **The focus lies on the banks ability to fund itself even under stress scenarios**

› **Retail deposits** tend to be quite sticky, despite their usually short tenors

› Large retail banks often have an advantage over smaller ones as a result of their larger branch networks

› In contrary **wholesale deposits** and **capital market funding** is much more sensitive to changes in the creditworthiness

› Maturity structure and diversification (clients, sources) matters

4. COUNTERPARTY ANALYSIS

Forward Looking Analysis - Scrutinizing business models is crucial

			Sample Questions
Future Strength	Market Appeal	**Market Development**	Profitable market segment? Growth opportunities?
		Competition Intensity	Consolidated market? Any entry barriers?
	Company Appeal	**Market Standing**	What is the market share? Opportunities to increase it?
		Business Portfolio	Dependence on single clients? Access to growth?
		Cost structure/ Efficiency	Efficient cost structure? Exposure to currency and commodity price changes?

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4. COUNTERPARTY ANALYSIS
Rating - Why Banks Assign Internal Ratings

- Timely updates independently from external opinions
- Regulatory requirements (Basel framework and for economic capital calculations)
- Internal assessment of portfolio
- Pre-requisite for risk-adjusted pricing
- Not all counterparties are externally rated

S & P	Moody's	
AAA	Aaa	Investment Grade
AA+	Aa1	
AA	Aa2	
AA-	Aa3	
A+	A1	
A	A2	
A-	A3	
BBB+	Baa1	
BBB	Baa2	
BBB-	Baa3	
BB+	Ba1	Non-Investment Grade
BB	Ba2	
BB-	Ba3	
B+	B1	
B	B2	
B-	B3	
CCC	Caa	
CC,C	Ca,C	
D, SD	D, SD	Default
D, SD	D, SD	

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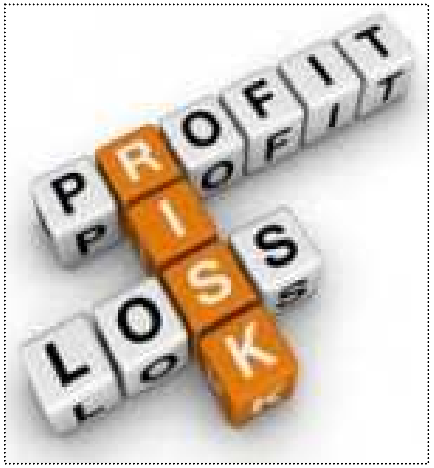
5. RISK & RETURN
Return alone is only half the equation

- **Business comes with risks**
- We need to achieve:
  - Better risk awareness in line with the business strategy
  - Appropriate risk appetite which is enough to compensate for the risks
  - If it sounds too good to be true, it probably is!

Again, our aim is to help taking the right risks and make (sustainable) business possible



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6. NO END OF FINANCIAL CRISIS?
Lessons learned from the financial crisis

- **„Too big to fail“ is no longer a valid form of risk management**
- **Governmental support is more uncertain than ever given governmental constraints**
- **Relation of size of the financial system to GDP of a country is an important measurement approach**
- **Qualitative and quantitative analysis is paramount for a thorough analysis**
- **Scrutinizing business models of Financial Institutions helps to make the world a better place**
- **Black swans exist**

6. LESSONS LEARNED FROM THE FINANCIAL CRISIS

Events in the past 5 years in the Financial Sector

Three months after clean bill of health in EU stress test, €4 billion loss for 2Q11

Problem already pre-crisis (wholesale funded, capitalisation deteriorated by large unrealised losses)

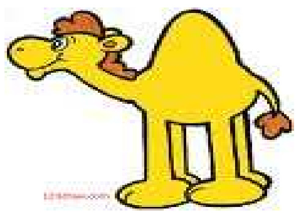
Government Support (Willingness) can not be taken for granted (e.g. Lehman, Defaults in Kazakhstan and Denmark)

Government Support (Ability) - „Too Big to Fail“ vs. “Too big to Rescue” (e.g. Iceland)

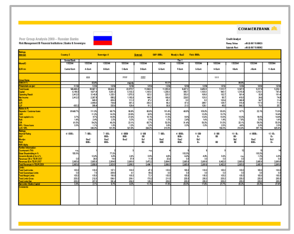
Large Exposure (e.g. real estate exposure in Dubai Crisis)

6. NO END OF FINANCIAL CRISIS?

Lessons learned how to reduce credit risk

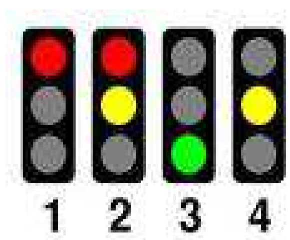


Regular credit analysis (CAMEL) /
Understanding business and risks

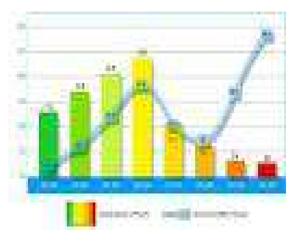


Peer-Group Comparison /
Focus on ‚good' clients

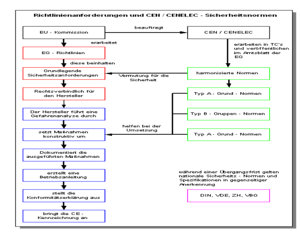
Increase of collateral level /
Reduction of business tenors



Introduction of bulk risks criteria /
Minimisation of bulk risks or
overreliance on single clients



Proactive
management of
credit portfolio



Clear definition and
maintenance of internal
guidelines and procedures

Q & A

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GRM Credit Risk Core Financial Institutions

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Frank Scherf
Senior Credit Officer

Tel.: +49 69 136-4 00 92
E-Mail: frank.scherf@commerzbank.com

Visitors‘ address:
Kaiserstraße 16
60311 Frankfurt/Main
www.commerzbank.de

Postal adress:
60261 Frankfurt/Main
Tel.: +49 69 136-20
Mail: info@commerzbank.com