

GRUPPO SANPAOLO IMI

SEMINAR ON CREDIT RISK MANAGEMENT AND SME BUSINESS

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Head of Risk assessment and management

Turin, June 12, 2003

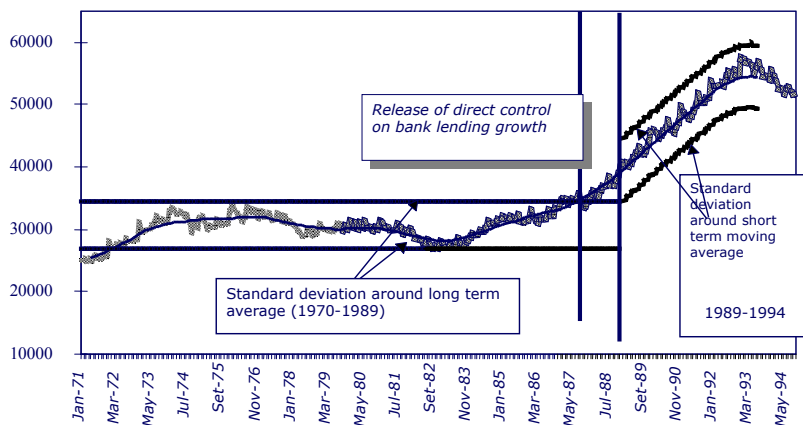
Agenda

- Italian market: the peculiarity of Italian SMEs in rating models estimation
- Credit Risk Mgmt: Guidelines, Organisation, Credit approval process
- Credit Risk Mgmt: tools & methodologies
 - Internal rating system
 - Portfolio Model
- Basel II & QIS 3 results: Italian SMEs are not penalised

ITALIAN MARKET:

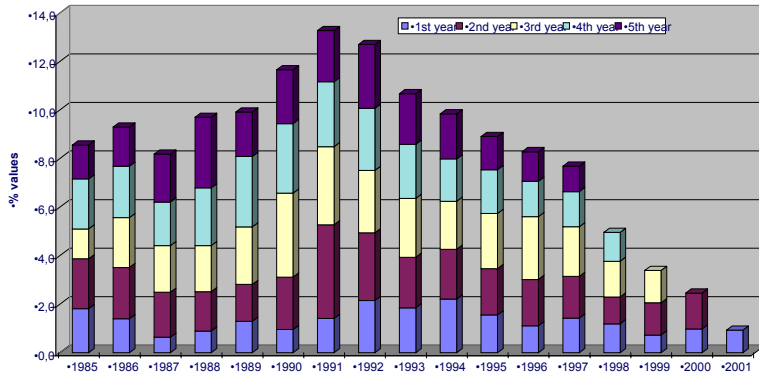
- Characteristics & trends
- The importance of local conditions in rating models estimation

ITALIAN MARKET: LIBERALISATION AND RELEASE OF CENTRAL CONTROLS



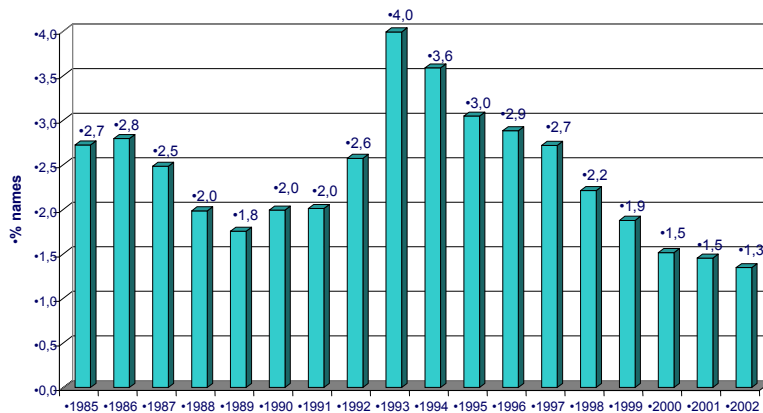
ITALIAN MARKET: CHANGE IN MIGRATION AND DEFAULT RATES

Annual defaults in the first 5 years of life of different loan vintage



ITALIAN MARKET: STRUCTURAL CHANGES IN DEFAULT RATES ALONG THE ECONOMIC CYCLE

Annual defaults (sofferenze)



CROSS BORDER COMPARISONS

Rating models for Italian customers are remarkably different from the ones estimated in other international contexts

FACTOR	UNITED STATES	CANADA	ENGLAND	SWITZERLAND	SPAIN	ITALY
• Liquidity	●	◐		◐		
• Capitalisation	◐	◐	●	◐	◐	●
• Profitability	◐	◐	◐	◐		●
• Interest Coverage	◐	◐	◐	●	●	●
• Company size					◐	◐
• Working Capital Requirement	◐					◐
• Empl.Cap. Change/Turn. Change	◐				◐	
• Equity/Employed Capital						●
• Cash flow/Employed Capital	●	●				◐
• Qualitative Data			●	●	●	●
• Behavioural Data						●

● Very important factor ◐ Important factor ◑ Minor factor

APPLICABILITY OF EXTERNAL RATING MODELS

Internal research demonstrates that it is not correct:

- to "import" externally developed rating models (e.g.: Altman model -1998 version- was applied to Sanpaolo IMI customers)

Internal Ratings directly estimated	Ratings obtained using the equation estimated by Altman							
	AAA	AA	A	BBB	BB	B	CCC + D	(*)
AAA	58.33%	4.17%	4.17%	8.33%	8.33%	4.17%	4.17%	8.33%
AA	1.38%	39.85%	5.53%	7.55%	12.54%	12.86%	9.25%	11.05%
A	0.15%	3.42%	25.94%	6.03%	12.43%	18.60%	22.02%	11.41%
BBB	0.25%	4.10%	1.74%	2.61%	6.47%	15.80%	58.83%	10.20%
BB	0.15%	0.73%	1.47%		2.35%	6.16%	78.15%	11.00%
B		0.48%	0.48%	0.24%	0.97%	2.42%	82.32%	13.08%
CCC					0.42%	2.51%	74.06%	23.01%

Cases in which it was not possible to obtain ratings using Altman's model (for example ratio with denominator equal to zero)

APPLICABILITY OF EXTERNAL RATING MODELS

(...) moreover variables that have proved to be relevant in other contexts may be not meaningful for the Italian market

Internal Ratings directly estimated	Ratings internally estimated using the variables of Altman's model							
	AAA	AA	A	BBB	BB	B	CCC + D	(*)
AAA	87.50%		4.17%					8.33%
AA	4.46%	81.30%	1.28%	0.85%	0.32%	0.43%	0.32%	11.05%
A	1.16%	18.60%	60.61%	4.00%	2.54%	1.24%	0.44%	11.41%
BBB	1.24%	24.88%	29.73%	10.45%	12.69%	9.33%	1.49%	10.20%
BB	0.88%	13.49%	19.50%	8.80%	17.89%	17.30%	11.14%	11.00%
B	0.48%	9.44%	11.86%	10.17%	12.83%	19.61%	22.52%	13.08%
CCC+CC	0.42%	7.53%	8.37%	4.18%	8.79%	16.32%	31.38%	23.01%

Cases in which it was not possible to obtain ratings using Altman's model
(for example ratio with denominator equal to zero)

CREDIT RISK MGMT:

- Guidelines
- Organisation
- Credit approval process

RISK MANAGEMENT: GUIDELINES

Sanpaolo IMI Group strongly emphasizes risk assessment and management, according to specific guidelines:

- Clear definition of responsibilities and limits for risk taking centres;
- Definition of measures and control systems consistent with international best practice;
- Separation of tasks between Risk Taking Units and Risk Control Functions.
- Credit and financial risks control and management at Group level

CREDIT COMMITTEE:
THE RELEVANCE OF CENTRALISED DECISIONS AT GROUP LEVEL



CEOs



Credit Committee

- Loan approval **at group level** (including market securities) over 25 Mio Euro and
 - up to Euro 500 Mio for counterparts with a minimum rating of A- (*)
 - up to Euro 250 Mio for investment grade(*) customers
 - up to Euro 100 Mio for non investment grade(*) borrowers
- Counterpart risk assessment and relationship strategy
- Loan risk-adjusted profitability analysis
- Loan policy guidelines

(*) Official agencies rating or internal level fixed by Risk Management applying Sanpaolo IMI's internal rating system

Voting Members: CEOs, Head of Group Credit Management, Head of Risk Management, Secretary of the Credit Committee.

Consulting Members: Sanpaolo Retail Network, Legal Department. Representatives of Banca OPI, Banca IMI, Banco Napoli, Cardine.

CORPORATE SEGMENT: CREDIT APPROVAL PROCESS

With regard to exposures over the Area Manager approval limits the "traditional" credit analysis is integrated by an internal rating analysis; rating is also used for pricing purposes



INTERNAL RATINGS ARE THEREFORE A CRUCIAL COMPONENT OF THE CREDIT APPROVAL PROCESS, DIRECTLY INVOLVING SENIOR MANAGEMENT AND A LARGE PART OF CORPORATE PORTFOLIO

For smaller amounts the credit approval and pricing are currently managed on the basis of a managerial risk classification provided by the loan officer (scores are used for central control purposes).

COUNTERPART CREDIT RISK ASSESSMENT IN SANPAOLO IMI:
STATE OF THE ART

(++++) Basel II compliant (+++) to be "fine-tuned" for Basel II validation
(++) good, to be upgraded (+) under development

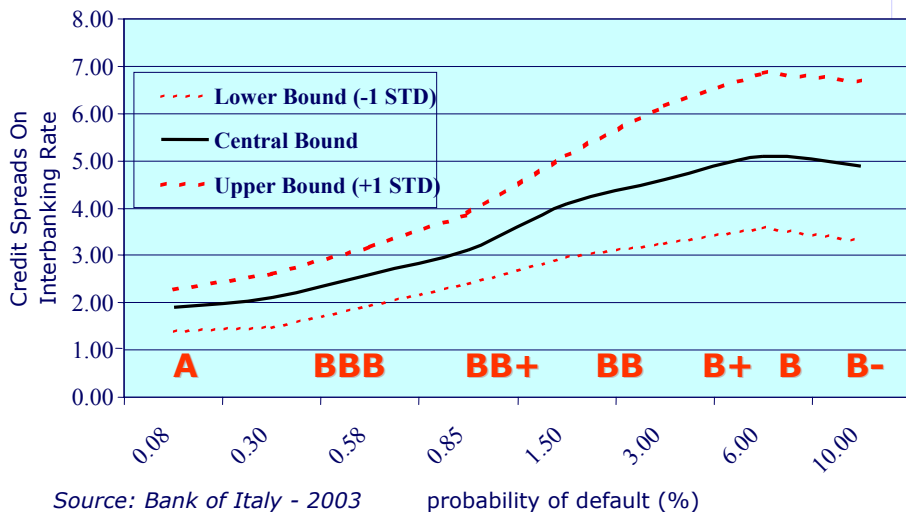
	Model specification	Daily usage (*)	Capital allocation	Control functions
Officially rated	++++	++++	++++	++++
Internally rated	▪ Large domestic corporate	++++	++++	++++
	▪ Large international corporate	++++	++++	++++
	▪ Middle market	+++	++	+++
	▪ Lower middle market	++	++	+++
Small business	++	+	++	+++

(*) Daily usage: identification of deliberative authorities, risk-adjusted pricing, managerial actions, performance measurement, definition of management incentives.

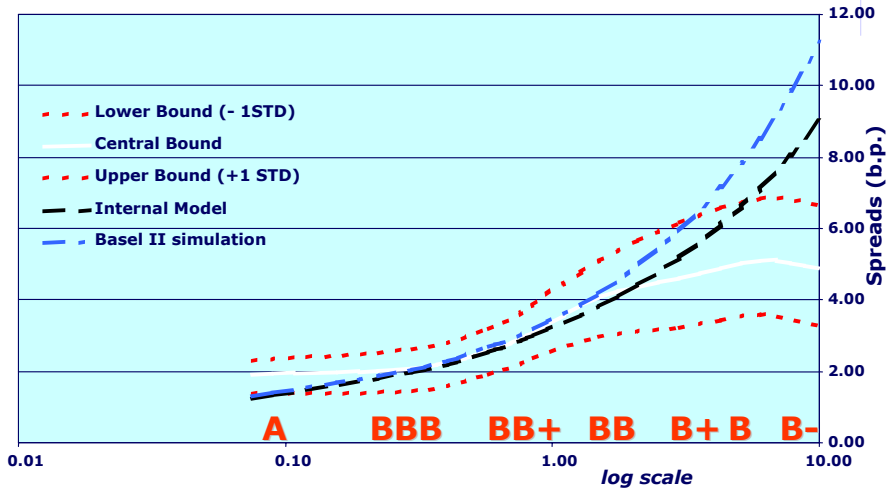
RISK ADJUSTED CREDIT PRICING

Pricing application (RARORAC approach) is based on:

- counterparty default probability evaluation during the whole life of the loan;
- assessment of the global exposure at the event of default;
- evaluation of severity in case of default (NPV of the cash flows along the recovery period);
- relevance of portfolio effect (correlation), due to diversification of risk and to distribution of counterparts, technical instruments, securities;
- assessment of expected loss volatility, to calculate economic capital (*value at risk*).

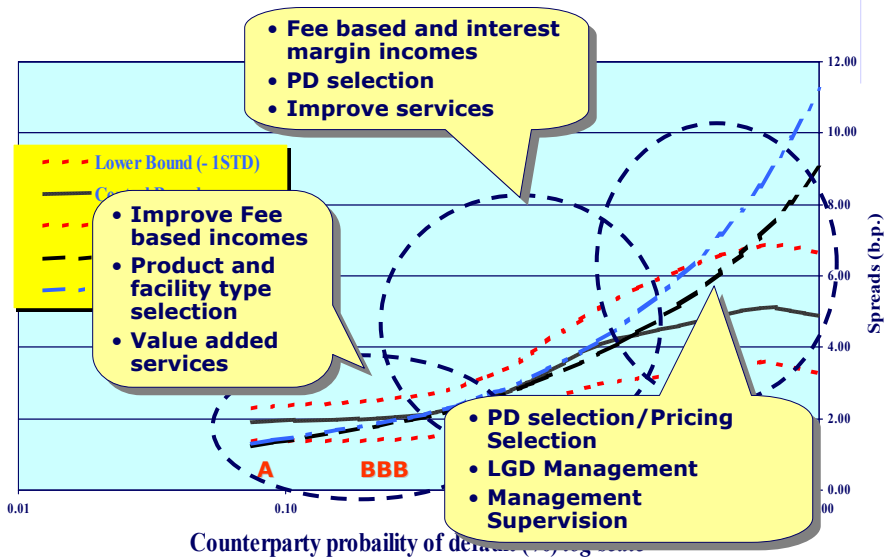
ITALIAN BANKING SYSTEM: CREDIT SPREADS VS. COUNTERPARTY RISK (END 2002) (+/- ONE STD)


ITALIAN CORPORATE LENDING CREDIT SPREADS: ACTUAL SPREADS, INTERNAL RISK ADJUSTED MODEL, BASEL II PRICING SIMULATION



Counterparty probability of default (%)

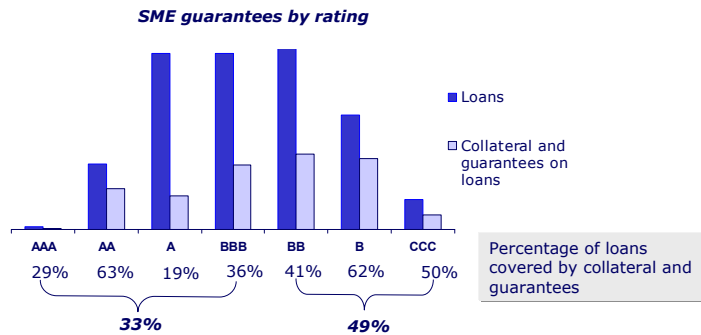
RISK ADJUSTED CREDIT RISK PRICING AND POLICIES



Counterparty probability of default (%)

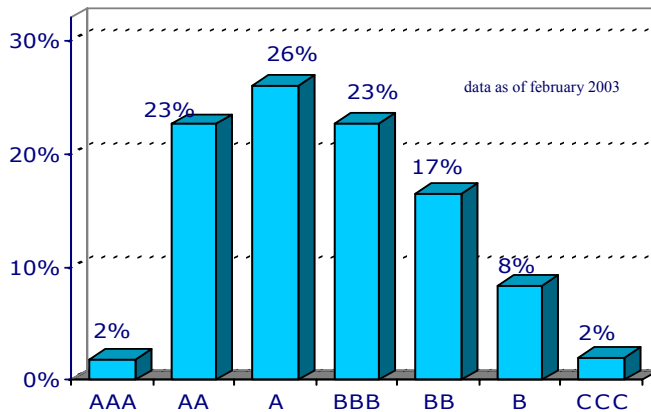
LOSS GIVEN DEFAULT MANAGEMENT

- ✓ Local presence and concentrated branch coverage
- ✓ Proven risk management tools
- ✓ Access to on and off balance sheet assets



THE RATING PROFILE

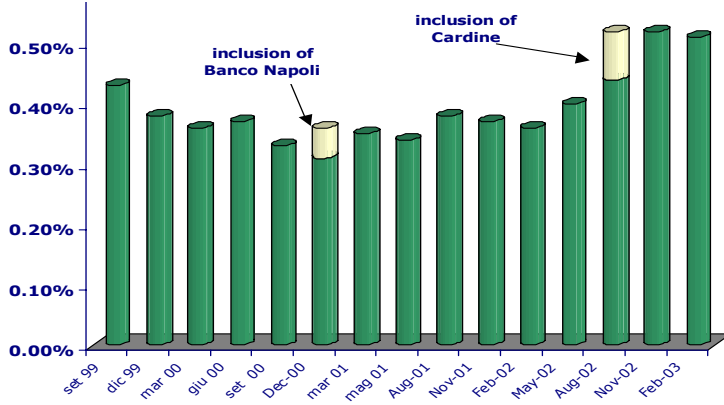
The portfolio shows a high quality profile, with almost three quarters of exposures rated investment grade



THE EXPECTED LOSS EVOLUTION

Despite the economic downturn, Sanpaolo IMI managed to maintain EL (*) around 50 basis points at the Group level

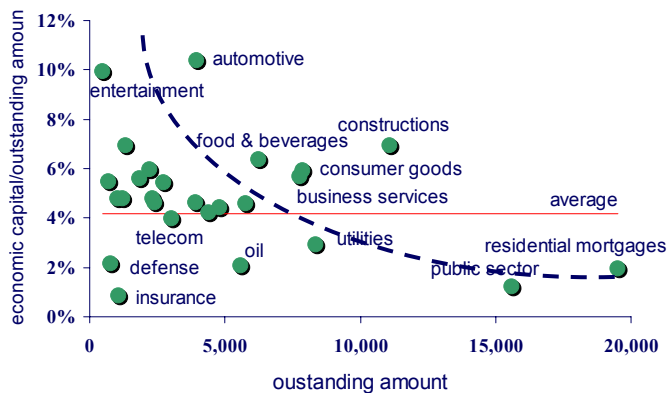
0.60% On balance sheet customer loans: EL/outstanding amount



() The EL is the product of probability of default, exposure at default and loss given default; the latter is measured with reference to an economic, as opposed to accounting, concept of loss comprehensive of legal costs, calculated prudently on the recoveries from disputes on a discounted base.

ANALYSIS BY BROAD INDUSTRY CATEGORIES

30% of Sanpaolo IMI's exposure is toward low risk segments (public sector and residential mortgages)



CREDIT RISK MGMT:

- Overview
- Sanpaolo IMI choices

CREDIT RISK MANAGEMENT

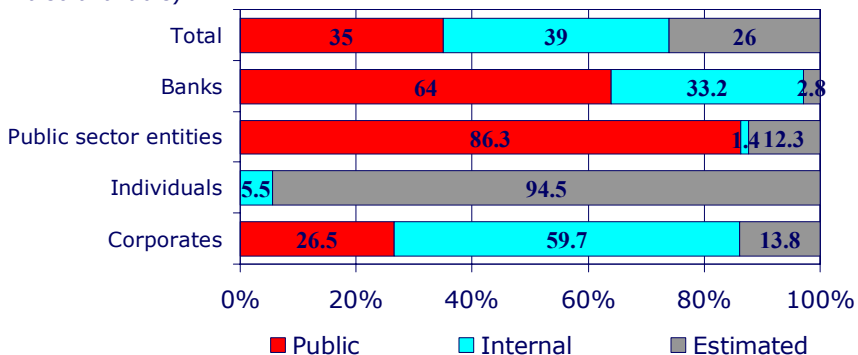
- Grading System
- Master Scale
- Portfolio Model (both Domestic and Foreign Exposures)
- Applications
 - Rating System for Corporate
 - "Risk Adjusted" Pricing for the credit line
 - Scenario Analysis

RATING MODELS: SANPAOLO IMI CHOICES

- **"Bottom up" approach** (all customers individually evaluated);
- **Counterpart rating** for *Corporate* counterparts;
- All rating models are calibrated using a common **"Master Scale"** to feed portfolio model;
- **Exposure at risk** and **recovery rates** are estimated according to facility type, guarantees and covenants;
- **Time horizon of estimates: 12 months**
 - ratings estimate default probability during the following 12 months,
 - however estimates have proved to be sound for periods up to 18-24 months as well.
- **Rating for Country Risk assessment**
- **Medium term transactions evaluated using transition matrices**
- Gradual process based on a preliminary managerial classification for retail counterparts, small business and family concerns

THE RATING MAP

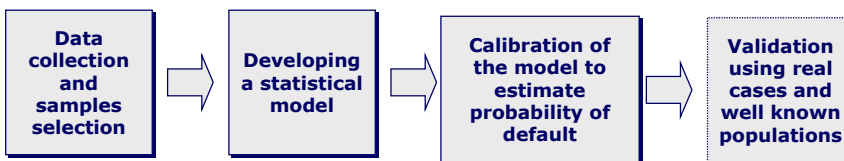
- An analytic rating, provided by specialized agencies or calculated on the basis of internal rating systems, is assigned to over 80% of the counterparts (in terms of drawn amounts)
- For the remaining counterparts, mostly individuals, the rating is based on the average probability of default (for most of these counterparts an internal classification -applied for customer management purposes- is also available)



CREDIT RISK MGMT TOOLS:

- internal rating system
- portfolio model

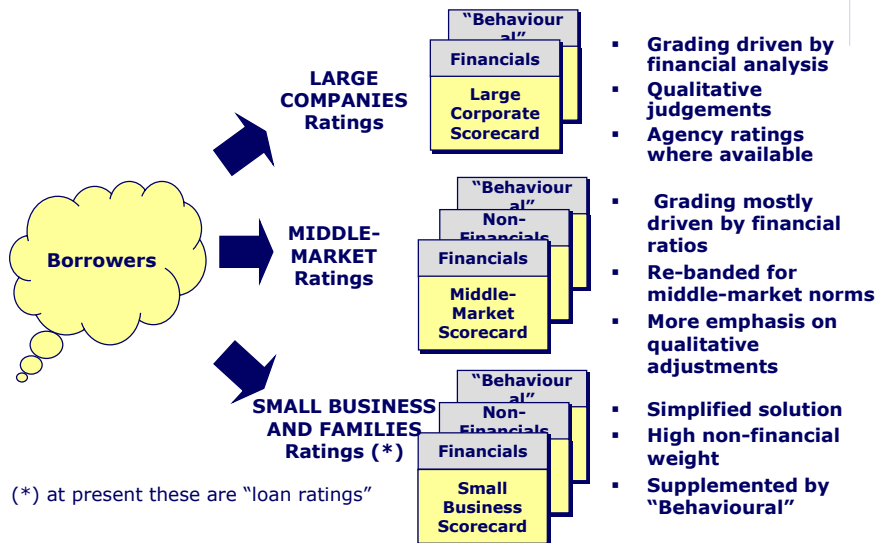
BUILDING AN INTERNAL RATING SYSTEM: MAJOR STEPS



KEY ISSUES

- **Definition of Default**
- **Selection of samples representative of the whole portfolio**
 - the advisability of differentiating models according to customer characteristics
 - the need to utilise "balanced" samples (with 50% "good" and 50% "bad")
- **Identification of the variables for the statistical estimate and preliminary treatment of information**
 - financial / non-financial / behavioural data
- **Models estimate using logistic functions**
- **Models selection**
- **Economic cycle adjustment**

INTERNAL RATING MODELS ARE DIFFERENTIATED ACCORDING TO CUSTOMER SEGMENTS



AN EXAMPLE: THE SIRS MODEL

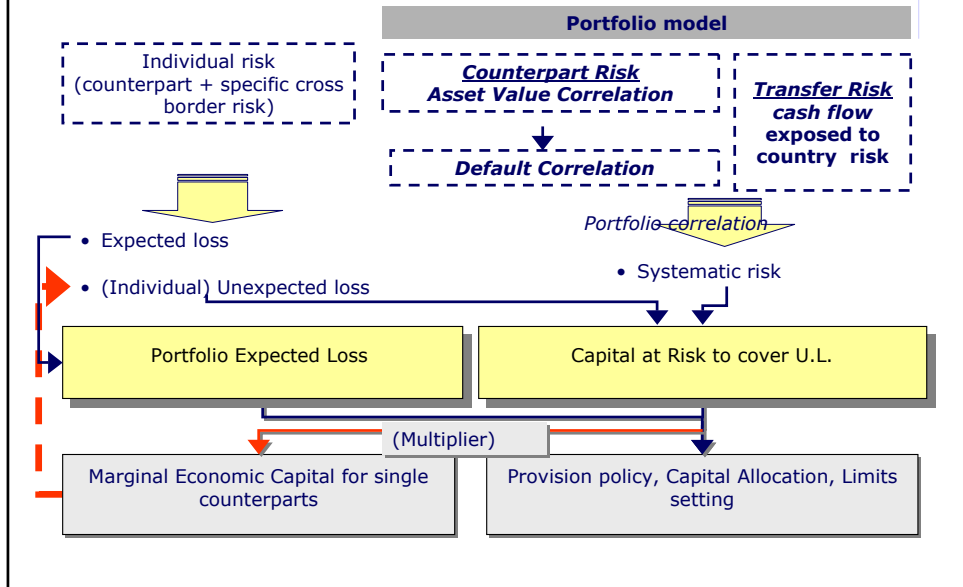
The areas of analysis taken into consideration:

- profitability / self-financing
 - financial structure
 - working capital
 - financial management
 - behavioural factors
 - competitive environment
- we sum single scores and determine the corresponding rating class.
 - we adjust the rating according to the economic cycle.
 - ratings are calibrated to S&P's e Moody's.



The model also performs scenario analysis, i.e. evaluates the potential impact on the counterpart credit quality of changes in macroeconomic factors.

SMES' ECONOMIC CAPITAL AT PORTFOLIO LEVEL



NEW BASEL CAPITAL ACCORD

- QIS 3 RESULTS

QIS 3: OVERALL RESULTS

ADVANCED APPROACH IS AN OPPORTUNITY

- In the Standardised Approach the capital requirement for the group as a whole increases by 6,3%. Moving to more advanced (IRB) approaches we have a progressive reduction in minimum regulatory capital: 5.7% and 11.2% respectively in the Foundation and Advanced Approach.
- In other words, **if the New Accord was already in place and Sanpaolo IMI internal models were validated by regulators, the capital adequacy ratio would rise from 9.5% to 11.1%** (other things being equal).

Approach	Total Capital Ratio	Capital requirement (RWA*8%)	
		Amount (Euro Mio)	% diff. from Current
Current	9,5% (*)	11.577	
Standardised	9.0%	12.306	+6,3%
IRB Foundation	10.3%	10.920	-5,7%
IRB Advanced	11.1%	10.282	-11,2%

Moreover the adoption of IRB approaches would increase the competitive distance from "Standardised" banks, strengthening the market position and the competitive advantage of more sophisticated banks.

(*) The group capital adequacy ratio at the end of June 2002 was 10%. The figure in the table is the result of QIS 3 instructions (Following Bank of Italy's indications, Italian banks did not include Tier 3 in regulatory capital).

QIS 3: RESULTS BY PORTFOLIOS COMPETITION IN THE SMES MARKET

Capital requirements under the different Basel II approaches (reference date 30th June 2002)

	Stand. vs. Current diff %	Found. vs. Current diff %	Advanced vs. Current diff %
<i>Corporate</i>	-9%	-37%	-42%
<i>Sovereign</i>	-34%	1,995%	1,782%
<i>Bank & PSE (*)</i>	7%	140%	61%
<i>Retail</i>	-18%	-17%	-17%
SME	-10%	-17%	-26%
<i>treated as corporate</i>	+1%	+5%	-13%
<i>treated as retail</i>	-21%	-38%	-38%
<i>Equity</i>	+14%	+238%	+238%
<i>Securitisation</i>	+106%	+104%	+104%
TOTAL banking book	-9%	-15%	-23%
memo: Generic Provision			
TOTAL REQUIREMENT	+6.3%	-5.7%	-11.2%

(*) Public Sector Entity.

BANK INTERNAL RATING SYSTEM: THE RELEVANCE OF THE DEFAULT DEFINITION



- In our credit risk management system, a loan is deemed to be in "default" once it migrates to a pre-defined "worst state" (risk categories defined by Bank of Italy).
- Precisely, our default condition is the "first entry in Incaglio or Sofferenza" of the loan (see next transparency).
- Our definition of risk is more severe than the international one based on bond issuer historical default observation.

INTERNAL VS. BASEL II DEFINITION

BASEL II:

A default is considered to have occurred with regard to a particular obligor when either or both of the two following events has taken place:

- The bank considers that the obligor is unlikely to pay its credit obligations to the banking group in full, without recourse by the bank to actions such as realising security (if held).
- The obligor is past due more than 90 days on any material credit obligation to the banking group. Overdrafts will be considered as being past due once the customer has breached an advised limit or been advised of a limit smaller than current outstandings.

THE RELEVANCE OF THE 90 DAYS PAST DUE CRITERION
IN THE ITALIAN MARKET

CONCLUDING REMARKS TO SUPPORT DISCUSSION

- **SMEs' Corporate Lending Italian market**
 - Is deeply changed (and still changing) after EMU and full globalised competition,
 - Nevertheless peculiarities still stand to justify specific approaches and to assure advantages where long term deeply rooted local relationships are already developed and maintained,
 - Segment profitability is positively changing and is aligning to risk adjusted measures and performances.
- **Sanpaolo IMI owns competencies, methodologies and experience to exploit value from SMEs relationships, supported by modern models and approaches.**
- **These experiences are also efficient in the new Basle II regulatory framework. Sanpaolo IMI SMEs' portfolio will grant less capital than today to support SMEs credit risk, offering new resources to sustain future growth and development.**

Disclaimer:

As in most presentations, the following discussion contains forward looking statements, and our actual results may differ from those discussed here. Additional information concerning factors that could cause such a difference can be found in our annual report and other publicly disclosed financial reports.