Risk Management: Closing Remarks

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F. Where does Risk Management Stand?

The following are my own views/conjectures.

- **Market Risk.**
  - The focus of much of the early effort in RM - has given us the VaR concept.
  - There is a feeling that market risks are well-understood and that all necessary methodology has been developed.
  - However concerns about residual extreme risk, liquidity risk and concentration risk suggest our work is unfinished. LTCM case is prime example.
Where does Risk Management Stand?

- **Credit Risk.**
  - Has been a widespread concern in the last few years.
  - Methodology is now available for portfolio credit risk, including models like CreditRisk+, KMV and CreditMetrics.
  - However relevant data are scarce and enterprises are faced with an enormous internal rating exercise.
  - Moreover, models may not be particularly well understood by their end-users and model risk is large; how do you model correlations between credit events?
  - Risk-transfer methodology (e.g. CLOs) to ease regulatory/economic capital requirements likely to increase in popularity. A lot of work remains in this area.

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• **Operational Risk.**
  ✴ Basel II has placed this on the agenda, although some maintain that desire to extend the VAR-based risk measurement philosophy to this area is misguided.
  ✴ Problem of definition; what exactly are operational risks?
  ✴ Problem of data; these are low frequency, high impact events we don’t often see. So are quantitative approaches realistic?

• **Other Risks.** These may not be new risk categories, but rather new ways of describing existing risks in the market and credit areas.
  ✴ Liquidity Risk - an issue since LTCM but very difficult to model.
  ✴ Concentration Risk - new methodology required and, in my opinion, possible.

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Too Little Rocket Science?

“In a sense, maybe the problem wasn’t too much rocket science, but too little. Extreme, synchronized rises and falls in financial markets occur infrequently - but they do occur. The problem with the models is that they did not assign a high enough chance of occurrence to the scenario in which many things go wrong at the same time the “perfect storm” scenario.”


I interpret this as a call for better, more sophisticated, risk management methodology.
Toward Models with More Concentration Risk

Normal Dependence

\begin{align*}
\text{Normal margins; correlation 70%; quantiles lines 0.5\% and 99.5\%.}
\end{align*}
More Comments on Basel II

(taken from “The New Basel Accord: an Explanatory Note”)

The major impetus for the 1988 Basel Capital Accord was the concern of the Governors of the G10 central banks that the capital of the world’s major banks had become dangerously low after persistent erosion through competition. Capital is necessary for banks as a cushion against losses and it provides an incentive for the owners of the business to manage it in a prudent manner.
Impact of Original 1988 Accord

Pros

The two principal purposes were to ensure an adequate level of capital in the international banking system and to create a “more level playing field” in competitive terms so that banks could no longer build business volume without adequate capital backing. These objectives have been achieved. The merits of the accord were widely recognised and during the 1990s the Accord became an accepted world standard in well over 100 countries.
Impact of Original 1988 Accord

Cons

However there have also been less positive features. The regulatory capital requirements have been in conflict with increasingly sophisticated internal measures of economic capital. The simple bucket approach with a flat 8% risk charge for claims on the private sector has given banks an incentive to move high quality assets off the balance sheet, thus reducing the average quality of bank loan portfolios. In addition, the 1988 Accord does not recognise credit mitigation techniques, such as collateral and guarantees. These are the principal reasons why the Basel Committee decided to propose a more risk-sensitive framework in June 1999.

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Questions and Answers Provided by Committee

What is the Basel Committee? A committee of central banks and bank regulators/supervisors from the major industrialised countries that meets every three months at the Bank for International Settlements.

Will it be Obligatory to Apply the New Accord? The present package will establish the basic capital frameworks for Committee member countries and the Committee expects that it will be adopted by supervisors across the world, as the current Accord is.

Will Banks Need to Hold More or Less Capital? Banks with a greater than average risk appetite will find their capital requirements increasing, and vice versa. The intention is to leave the total capital requirement for an average risk portfolio broadly unchanged.
Rationale for the New Accord

- **Existing Accord**
  - Proposed New Accord

- **Focus on a single risk measure**
  - More emphasis on banks’ own internal methodologies, supervisory review, and market discipline.

- **One size fits all**
  - Flexibility, menu of approaches, incentives for better risk management

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• Broad brush structure

★ More risk sensitivity

Three Pillars of the New Accord

★ First pillar: minimum capital requirement

★ Second pillar: supervisory review process

★ Third pillar: market discipline
How Capital Adequacy is Measured

\[
\frac{\text{Total capital}}{\text{Credit risk + Market risk + Op. risk}} = \text{bank’s capital ratio} \geq 8\%.
\]

New Menu for Credit

- Standardised approach
- Foundation internal rating based approach
- Advanced internal rating based approach

New Menu for Operational Risk

- Basic indicator approach or standardised approach
- Internal measurement approach
Credit Risk: the IRB Approach

Under the IRB approach, banks will be allowed to use their internal estimates of borrower creditworthiness to assess credit risk in their portfolios, subject to strict methodological and disclosure standards. Distinct analytical frameworks will be provided for different types of loan exposures, for example corporate and retail lending, whose loss characteristics are different.

Under the IRB approach a bank estimates each borrower’s creditworthiness, and the results are translated into estimates of a potential future loss amount, which form the basis of minimum capital requirements. The framework allows for both a foundation method and more advanced methodologies for corporate, sovereign and bank exposures.

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Credit IRB Approach: Foundation or Advanced

Foundation method - banks estimate default probabilities; supervisors supply other inputs.

Advance method - banks supply all inputs.

Operational Risk: the menu

The work on operational risk is in a developmental stage, but three approaches have been identified. Basic indicator approach uses one indicator of operational risk for a bank’s total activity. Standardised approach specifies different indicators for different business lines. the internal measurement approach requires banks to utilise their internal loss data. The Committee expects operational risk on average to constitute approximately 20% of the overall capital requirements.
First Lesson of all RM Disasters

$RM \approx MR$