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The emergence of credit ratings tools

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The 2008 financial crisis has shown that the reference context for supervisors, banks, public entities, non-financial firms, and even families had changed more than expected. From the perspective of banks' risk management, it is necessary to acknowledge the development of:

- New contracts (credit derivatives, loan sales, ABS, MBS, CDO, and so on).
- New tools to measure and manage risk (credit scoring, credit ratings, portfolio models, and the entire capital allocation framework).
- New players (hedge funds, sovereign funds, insurance companies, non-financial institutions entered into the financial arena).
- New regulations (Basel II, IAS/IFRS, etc.).
- New forces pushing towards profitability and growth (the apparently distant banking deregulation of the 1980s, contestable equity markets for banks and non-financial firms, management incentive schemes, etc.).

There are three key aspects to consider:

1. none of the aforementioned innovations can be considered relevant without the existence of the others;
2. each of the aforementioned innovations is useful to achieve higher levels of efficiency in managing banks;
3. all of these innovations are essentially procyclical.

Developing, Validating and Using Internal Ratings: Methodologies and Case Studies Giacomo De Laurentis, Renato Maino and Luca Molteni © 2010 John Wiley & Sons, Ltd

The problem is that the dynamic interaction among these innovations has created disequilibrium in both the financial and real economies.

As they are individually useful and all interconnected, a new equilibrium cannot be achieved by simply intervening in a few of them.

With this broader perspective in mind, we will focus on credit risk. In recent years, the conceptualization of credit risk has greatly improved. Concepts such as ‘rating’, ‘expected loss’, ‘economic capital’, and ‘value at risk’, just to name a few, have become familiar to bank managers. Applying these concepts has radically changed lending approaches in both commercial and investment banks, in fund management, in the insurance sector, and also for chief financial officers of large non-financial firms.

Changes concern tools, policies, organizational systems, and regulations related to underwriting, managing, and controlling credit risk. In particular, systems to measure expected losses (and their components: probability of default, loss given default, exposure at default) and unexpected losses (usually using portfolio VAR models) are tools which are nowadays regarded as a basic requirement. The competitive value of these tools pushes for an in-house building of models, also in accordance with the Basel Committee on Banking Supervision hopes.

The rating system is at the root of this revolution and represents the fundamental piece of every modern credit risk management system. According to the capital adequacy regulations, known as Basel II, the term rating system ‘comprises all of the methods, processes, controls, and data collection and IT systems that support the assessment of credit risk, the assignment of internal risk ratings, and the quantification of default and loss estimates’ (Basel Committee, 2004, p.394).

This signifies that ‘risk models’ must be part of a larger framework where, on one hand, their limits are perfectly understood and managed in order to avoid their dogmatic use, and, on the other hand, their formalization is not wasted by procedures characterized by excessive discretionary elements. To further outline this critical issue, how the current paradigm of risk measurements has been achieved in history and which decisions can be satisfactorily addressed by models (compared to those that should rest at the subjective discretion of managers) are addressed in this book.

The first provider of information concerning firms’ creditworthiness was *Dun & Bradstreet*, which started in the beginning of the nineteenth century in the United States. At the end of the century, the first national financial market emerged in the United States; this financed immense infrastructures, such as railways connecting the east coast with the west coast. The issuing of bonds became widespread, in addition to more traditional shares. This evolution favored the creation of rating agencies, as they offer a systematic, autonomous, and independent judgment of bond quality. Since 1920, Moody’s has produced ratings for more than 16 000 issuers and 30 000 issues; today it offers ratings for 4800 issuers. Standard & Poor’s presently produces ratings of 3500 issuers. FITCH was created more recently by the merging of three other agencies: Fitch, IBCA, Duff & Phelps.

Internal ratings have a different anecdote. Banks started to internally classify borrowers in the United States in the second half of the 1980s when, after the

collapse of more than 2800 savings banks, the FDIC and OCC introduced a formal subdivision of bank loans in different classes. The regulation required loans to be classified, with an initial confusion on what to rate (borrowers or facilities), in at least six classes, three of which today we would define as 'performing' and three as 'non-performing' (*substandard*, *doubtful* and *loss*). Provisions had to be set according to this classification of loans.

This regulatory innovation had an influential effect for banks, which started to classify counterparties and to accumulate statistical and financial data. During the 1990s, the most innovative banks were able to use a new analytical framework, based on the distinction of:

- the average frequency of default events for each rating class (the probability of default);
- the average loss in case of default (the loss given default);
- the amount involved in recovery processes for each facility (the exposure at default).

The new conceptual framework (initially adopted primarily by the investment banks, which are more involved in corporate finance) has rapidly shown its competitive value for commercial banks, in order to set more precise credit and commercial policies, and for defining pricing policies linked more to risk than to the mere bargaining power of the counterparts.

Quantitative data on borrowers and facilities' credit quality has allowed the creation of tools for portfolio analysis and for active asset management. Concepts such as diversification and capital at risk have been transposed to asset classes exposed to credit risk, and have enabled commercial banks to apply advanced and innovative forms of risk management.

By the end of the 1990s, after more than 10 years of positive experimentation, internal ratings appeared to be a good starting point for setting more risk-sensitive capital requirements for credit risk. The new regulation, known as Basel II, which has been gradually adopted by countries all over the world, has definitively consolidated these tools as essential measurements of credit risk, linking them with:

- The minimum capital requirement for credit risk, according to simplified representations of portfolios of loans (the First Pillar of the Basel II regulation).
- Capital requirements for concentration risk and the integration of credit risk with other risks (financial, operating, liquidity, business and strategy risks) in a holistic vision of capital adequacy (a key aspect of ICAAP, the *Internal Capital Adequacy Assessment Process* of the Second Pillar).
- Higher levels of disclosure of banks' exposure to risks in their communications to the market (the Third Pillar); this is functional to enhance the 'market discipline' by penalizing on financial markets those banks that take too much risk.