

# The Operational Risk Management in Banking – Evolution of Concepts and Principles, Basel II Challenges

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## *Abstract*

*The operational risks in the banking sector are undeniable realities of contemporary specific environment and their correct treatment is now both a necessity and a prerequisite for effective overall management process. Operational risk management brings a double challenge for banks. On the one hand the need to align with regulations in order to meet the requirements of the system's regulators, on the other hand turning these requirements into a business opportunity.*

*This paper is meant to provide an overlook on the operational risk management specific to the banking sector. The study briefly defines operational risk in banking and reviews the evolution of the good practices principles regarding operational risk management in banking. In the last part the paper deals with the approaches used for establishing the regulatory capital for operational risk as they were set by the Basel Committee for Banking Supervision: basic indicator approach, standardized approach and advanced measurement approach.*

**Keywords:** *operational risk, operational risk management, basic indicator approach, standardised approach, advanced measurement approach.*

**JEL classification:** E42, G32.

## **Introduction**

Operational risk events affecting banking financial institutions in recent years have led to pressure for a reaction from industry stakeholders and consultative and supervisory bodies in the field on this issue along with a reconsideration of the vision of operational risk management from players in banking.

Basel Committee on Banking Supervision thus considered that "such risk management (operational) has become an important feature of sound risk management practices in modern financial markets. The most important types of operational risk involve violations of internal controls and corporate governance principles. These deviations can lead to financial losses through error, fraud or failure to perform in a timely manner or cause the interests of the bank which may be compromised in another way, for example, by its dealers, staff involved in lending or other category personnel who exceed their authority and shall carry out business in an unethical or risky. Other aspects of operational risk include major

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failure of information technology systems or effects from major events such as fires or other disasters "(Basel Committee on Banking Supervision, 1998. Operational Risk Management, p.1).

### **1. The Operational Risk Management - Evolution of Concepts and Principles**

The Basel Committee on Banking Supervision, in the Basel II Accord, defines operational risk as the risk of loss resulting from inadequate or failed internal processes, people and systems or from external events. According to this definition operational risk includes legal risk, but excludes strategic and reputational risk.

In the development of defining bank operational risk in the financial system, Duncan Wilson in Operational Risk (Lore & Borodovsky, 2000, p 385-386) mentions two main approaches to defining, as they have evolved on the Operational Risk Forum initiated by IBM (UK) on 21 May 1998. Thus the author identifies two ways:

➤ The "narrow" definition: some banks regard risk as resulting in departments called "Operations" and they define it as the errors and omissions of controls, systems and processes that can cause potential losses. Other risks such as reputational, legal, personnel can be managed by a global risk committee which considers bank exposure to all risks or either the operational risk management is the responsibility of individual department. Therefore, some banks did not consider the need for a separate function for operational risk.

➤ The "large" definition: other banks have adopted a much broader definition of operational risk. Some have defined it as including all risks, except market risk and the credit. The rationale is to consider all potential influences on the profit and loss account that are not considered by the risk measures for market risk and credit. This definition, however, has created problems and so many banks have agreed it should be restricted to what can be relatively easy measured. For example, in case of a system failure, loss can be quantified as the amount of lost earnings and additional costs while the system was not operational. For a transaction error, such as a delayed settlement, the loss can be measured as the sum of penalties, interest costs and labor of remedial action.

Given the development and characteristics of the banking industry, one year before the completion of Basel II, the Basel Committee on Banking Supervision made public final version of the Sound Practices for the Management and Supervision of Operational Risk after issuing, in each of the two years preceding publication, consultative versions of this paper. The final version of the paper is divided into 10 principles listed below, which address the following: the development of an appropriate framework for operational risk management, stages of operational risk management: identifying, assessing, monitoring and controlling / reducing, the role of supervisors and role of external communication.

In 2010 the Basel Committee on Banking Supervision began to reconsider these principles. Thus, the Committee issued a consultative version of the Sound Practices for the Management and Supervision of Operational Risk (Basel Committee on Banking Supervision, 2010).

The need to revise the document is considered to reside in the fact that in the period since the publication of the first final versions, banks and supervisors have extended their knowledge and experience in implementing operational risk management framework. Sphere of knowledge on best practices both for banking and for supervisors is deemed to have been improved as a result of loss data collection exercises, quantitative impact studies, and as a result of the review of a range of practices regarding governance, but also due to issues related to data and modeling.

After reviewing the consultative version of the document based on comments received the Committee published the final version of the document in June 2011. The final version of the Principles for Sound Practices for Operational Risk Management - includes as such observations on the evolution of best practices in the sector and sets out eleven principles for sound practices for operational risk management, divided into the following centralized directions: governance, risk management and the role of external communication. The Committee believes that the principles contained in the document set out sound practice for all banks, thus the document updating accordingly the Basel II Accord.

The ultimate goal of the review is to promote and improve operational risk management efficiency throughout the banking system. It is considered that a sound internal governance underpins an effective operational risk management. The common practice observed in banking regarding best practices of governance of operational risk often is based on three lines of defense - (i) management of business lines, (ii) a independent corporate function of operational risk management (iii) a independent review (verification and validation). It is believed that good communication between the three lines of defense and a strong risk culture are important characteristics of good governance of operational risk. It highlights the role of internal audit whose expansion area should be adequate to independently verify whether the implementation framework was implemented as planned and whether it is operating effectively.

Observing the changing business environment and evolutionary development of operational risk management the Committee believes that management should ensure that policies, processes and systems of the created framework remain sufficiently robust.

The table below shows a comparative representation of the principles established by the Basel Committee on Banking Supervision in 2003 versus 2011.

**Table 1. Evolving principles of operational risk management practices**

Principles that define the sound practices of operational risk management under Basel Committee on Banking Supervision, 2003 - Sound Practices for the Management and Supervision of Operational Risk, Bank for International Settlements:	Current principles of sound operational risk management practices established by the Basel Committee on Banking Supervision, 2011 - Principles for the Sound Management of Operational Risk, Bank for International Settlements:
	Fundamental principles of operational risk management
	Principle 1: Board should take the initiative of establishing a strong risk management culture. Board of Directors and executive management should establish a corporate culture that is guided by a strong risk management and supporting and providing appropriate standards and incentives to behave professionally and responsibly. In this sense, it is the responsibility of the Board to ensure that throughout the entire organization exists a strong culture of operational risk management.
	Principle 2: Banks should develop, implement and maintain a framework that is fully integrated into overall risk management processes existing within the bank. Operational risk management framework chosen by a given bank will depend on a number of factors, including its risk nature, size, complexity and profile.
Developing an appropriate risk management framework	Governance
	Board of Directors
Principle 1: The Board of Directors should be aware of the major aspects of the bank's operational risks, regarded as a distinct risk category that should be managed, and should approve and periodically review operational risk management framework. The framework should provide a valid definition of operational risk throughout the organization and to establish principles concerning the way in which operational risks must be identified, assessed, monitored and controlled / mitigated.	Principle 3: The Board should establish, approve and periodically review the framework. Board should oversee the executive management to ensure that policies, processes and systems are effectively implemented at all levels of decision.

Principle 2: Board of Directors should ensure submission of operational risk management framework of an effective and comprehensive internal audit conducted by independent operational staff, properly trained and competent. The internal audit function should not be directly responsible for managing operational risk.	
	Principle 4: The board of directors should approve and review the statement on risk appetite and related tolerance for operational risk to articulate the nature, type and level of operational risk the bank is willing to assume.
	Executive Management
Principle 3: The Executive Management would be responsible for implementing the operational risk management framework approved by the Board. The framework should be implemented consistently across the bank, and all levels of staff should understand their responsibilities with respect to operational risk management. The Executive Management should also have the responsibility of developing policies, processes and procedures for managing operational risk on all material products, activities, processes and systems of the bank.	Principle 5: The Executive Management should develop for approval by the Board a clear, efficient and robust governance structure with lines of responsibility clearly defined, transparent and consistent. Executive management is responsible for implementing and maintaining consistently throughout the organization policies, processes and operational risk management systems in all material products, activities, processes and systems consistent with the bank's risk appetite and tolerance related.
Risk Management Identify, assess, monitor and control / mitigation	Risk management environment Identification and Evaluation
Principle 4: Banks should identify and assess the operational risk inherent in all material products, activities, processes and systems. Banks should also ensure that, before entering or making new products, activities, processes and systems, operational risk inherent in them is subject to adequate assessment procedures.	
	Principle 6: Executive Management should ensure the identification and assessment of operational risk inherent in all material products, activities, processes and systems of the bank to ensure that inherent risks and incentives are well understood.

	Principle 7: Executive Management should ensure that there is an approval process for all products, activities, processes and new systems that fully assesses operational risk.
	Monitoring and reporting
Principle 5: Banks should implement a process to regularly monitor operational risk profiles and material exposures to losses. There also should be regular reports containing relevant information for executive management and board of directors, to support proactive management of operational risk.	Principle 8: Executive Management should implement a process to regularly monitor operational risk profiles and material exposures to losses. There also should be adequate reporting mechanisms implemented for the board of directors, executive management and the business lines that support proactive management of operational risk.
	Control and mitigation
Principle 6: Banks should have policies, processes and procedures to control and / or mitigate material operational risks. Banks should periodically review their strategies for limiting and controlling risk and should adjust their operational risk profile accordingly using appropriate strategies correlated with overall risk appetite and profile.	Principle 9: Banks must have a strong control framework that uses policies, processes and systems, adequate internal controls and appropriate risk mitigation and / or transfer strategies.
	Resilience and continuity
Principle 7: Banks should have emergency and business continuity plans to ensure the ability to operate on a continuous basis and to limit losses in the event of severe business disruption.	Principle 10: Banks should have established business continuity plans to ensure the ability to operate on a continuous basis and to limit losses in the event of severe business disruption
The role of supervisors	
Principle 8: Banking supervisors should require that all banks, regardless of size, have to implement an efficient framework to identify, assess, monitor and control / reduce significant operational risks as part of a comprehensive approach to risk management .	
Principle 9: supervisors should conduct, directly or indirectly, regular independent assessments of policies, procedures and practices relating to operational risks of banks. Supervisors should ensure that appropriate mechanisms are implemented which allow them to remain informed of the developments in banks.	

The role of disclosure (public communication)	The role of disclosure (public communication)
Principle 10: Banks should provide sufficient public data so that market participants be allowed to evaluate the approach to operational risk management.	Principle 11: Public disclosure of information made by banks should allow stakeholders to evaluate the approach to operational risk management.

**Source:** own processing based on data for Banking Supervision Basel Committee

The need to review these principles resided primarily in the evolution of the sector, in the development of knowledge and the enhanced experience in the field.

As result of the comparison, can be noted the introduction and enhancement, as a fundamental principles for a sound management of operational risk, of a strong risk management culture but also the need for a operational risk framework fully integrated into overall risk framework of the institution.

It is believed that a strong culture of risk management and ethical business practices provides premises for the lack of emergence of potentially damaging operational risk events. It is thus recommended and recognised the importance of the establishment of a code of conduct and of an ethics policy.

In order for the risk to be completely taken into consideration when making decisions, projects which have different levels of risk are evaluated according to the manager's personal attitude towards risk assessing. These attitudes are divided into three categories: risk-adverse managers, neutral mangers and managers who prefer risk (Popescu, 2007).

As shown the new principles cover aspects regarding governance, risk management environment and the role of disclosure, while supervisory issues are no longer treated in the same document, but are given due consideration in separate documents. It can be noted, also, the emphasis on corporate governance principles relating to operational risk including the introduction of requirements regarding the establishment of operational risk appetite and risk tolerance.

## **2. Operational Risk in Basel II context – requirements for capital allocation and calculation methods**

In the context set out above, the Basel Committee considered that Basel I capital allocated for credit risk, and then market risk that should also cover other risks faced by a bank, does not correspond any more to current market realities. Thus, the banking practices such as securitization, outsourcing, specialized trading operations and trust in the rapid evolution of technology and products but also complex financial strategies suggests that these other risks are important factors and should be reflected in reliable capital assessments for both supervisors and banks. As such, operational risk is considered to be a significant risk for the banks, for which they must allocate capital to protect against possible losses due to operational risk event.

It is relatively easy for an organization to establish and meet specific levels, measurable market risk and credit risk, as there are models with which to predict the potential impact of market movements or changes in the cost of credit. By contrast, it is relatively difficult to identify or evaluate the operational risk and its sources. Organizations, historically accepted operational risk as an inevitable cost of doing business. On the methods of operational risk management Basel II and supervisory bodies of different countries - have prescribed various standards of reliability for operational risk management in banks and similar financial institutions. To complement these standards, Basel II guidelines issued three general methods for computing capital for operational risk:

1. The basic approach - based on annual income of the financial institution, is a set of operational risk measurement techniques proposed under Basel II rules on capital adequacy for banks. Basel II requires all banking institutions to allocate capital for operational risk. Basic indicator approach is much simpler when compared with alternative approaches (eg, standardized approach for operational risk and the advanced measurement approach, the first one based on differentiated business lines and the second approach based on the bank's internal models) and this was recommended for banks without significant international operations. According to the Basel II Accord, banks using the basic indicator method to allocate capital for operational risk equal to the average for the last three years of a fixed percentage of the base. Figures for any year in which annual gross result is negative or zero should be excluded in calculating the average. Fixed percentage "Alfa" is usually 15% of annual gross revenue.

2. The standardised approach - based on annual revenues of each of the general business lines of the financial institution. In the context of operational risk the standardised approach is a set of operational risk measurement techniques proposed under Basel II rules for capital adequacy for banks. The standardised approach is between the basic indicator approach and the advanced measurement approach regarding the complexity. Under the Basel II Accord, the standardized approach divides the banks' activities into eight business lines: corporate finance, trading & sales, retail banking, commercial banking, payment & settlement, agency services, asset management, and retail brokerage. For each of the business lines, gross income is a general indicator showing and scale of business operations and thus the likely scale of operational risk exposure within each of these business lines. The capital to allocate for each business line is calculated by multiplying the gross income by a factor (denoted beta) assigned to that business line, according to the table 2.

Total allocation of capital is calculated as an average three-year simple summation of the regulatory capital allocation on each of the business lines in each year.



**Table 2. Required capital for each business line, standardized approach to operational risk**

<b>Lines of business</b>	<b>Beta coefficient</b>
Corporate finance	18%
Trading and sales	18%
Retail brokerage	12%
Commercial banking	15%
Payments and settlements	18%
Agency services	15%
Asset management	12%
Retail banking	12%

**Source:** Basel Committee on Banking Supervision

3. Advanced measurement approach - based on the bank's internal models to measure risk. In accordance with this method ("Advanced Measurement Approach" or AMA) banks are allowed to develop their own empirical models to quantify the capital required for operational risk. Banks can use this approach only subject to approval by the local regulatory authorities. Once AMA adopted by the bank, it can not return to a simpler approach without approval from the supervisor.

Advanced method for measuring operational risk does not require use of a particular modeling techniques, but the general approach taken by the banking sector is loss distribution approach (Loss Distribution Approach - LDA). By this method, the bank divides its operational losses in homogeneous segments called units. For each measure, the bank then constructs a losses distribution which represents expectations to total losses that may materialize in a one-year horizon. Since the sufficiency of data is a major challenge in the sector annual loss distribution cannot be constructed directly using annual figures of losses. Instead, the Bank will develop a frequency distribution that describes the number of events-loss in a given year, and a severity distribution that describes the amount of loss of a single loss event. Frequency and severity distributions are assumed to be independent. By interleaving the results of these two distributions annual loss distribution is obtained.

### **Conclusions**

In the context of the internationalization of banking activities, the Basel II Accord developed the issue of operational risk in banking, recognizing the importance of operational risk management and its place among other risks and therefore requiring the need to allocate capital for operational risk.

In such a conjuncture a good operational risk management will always increase performance and can be a strong competitive advantage compared to other market players by implementing a framework and principles that translate into a strong culture of operational risk management to generate a more efficient activity.

Thus banking institutions can significantly improve the risk profile and can record multiple benefits at strategic and operational levels.

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