OPERATIONAL RISK MANAGEMENT
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ABSTRACT

Associated risk is a vital economic activities undertaken under well established and can bring value to represent a process of risk management becomes competitive advantage ("art" to make decisions and act on the basis of insufficient data). Basel Committee on Banking Supervision has developed rules and regulations which recognized the impact of operational risk (emphasizing that the implementation of proper management of risks is vital for the existence of a financial institution). This paper aims to establish the optimal method for determining capital requirements for institution analyzed.

Keywords: Operational risk, Operational risk management, expected loss, PE, LGE, unexpected loss, provisions, capital.

1. INTRODUCTION

Banks' capitalization required under the Basel I and II proved to be insufficient so there was need complex prudential policies grouped under a new Basel III. Such new standards aimed at: improving risk management, strengthening transparency requirements, problems systemically important banks, in a word decrease the negative effects of financial crisis by increasing the requirements on capital adequacy, liquidity requirements and leverage.

Operational risk as defined by the Committee on Banking Supervision in Basel is the "risk of direct or indirect loss resulting from deficiencies or failures of procedures, personnel, internal systems or external events".

Thus the main categories of operational risk are:
- Internal Fraud involves intentional losses due to failure of the internal regulations of the institution's policy, laws, involving at least one company employee
- External fraud is based on a third party business losses due to fraud, prevent compliance or to acquire goods / values, violations of security systems
- Risks arising from relationships with customers, products and business practices are a product of customer negligence or professional obligations in the nature and design of product, improper business practices or market
- Involve damage to tangible losses materialized in damage, loss of physical assets of the organization and the impact on business
- Business disruption and system availability resulting from the operation.
- Execution, delivery and management processes involving losses due to faulty registration and transaction execution, monitoring and reporting faulty
- Conditions related staffing and job security due to loss-making activities contrary to law and conventions on employment, health and safety at work.

Because administration of many monetary instruments, monitoring and correcting large exposures, the number of transactions increased in a relatively short period, from several sites, including e-banking service, the complexity and volatility of the banking system and through breaches legislative and regulatory, in a word, due to internal factors and external determinants of operational risk can record a series of losses or profits estimated realizable.

Given the literature we conclude that there is a wide variety of views on operational risk and its management methods.

This was treated as operational risk, financial risk "residual" after eliminating the credit and market risk, is a vague definition which includes business risk (including market positioning, management competence, etc.).

It is also considered that operational risk arises from conduct financial transactions with the error sources, disorders, deficiencies of systems, equipment, people, techniques, etc. regardless of intentional acts performed by employees or outside the institution for fraud. Operational risk has been treated as a risk, business risk exclusion, which arises from the existence of inadequate internal control system, which also takes account of catastrophic natural events and dishonest acts within and outside the institution.

A final treatment of operational risk considers that it is direct or indirect loss resulting from technological processes, inadequate internal control procedures, technological disturbances, unauthorized activities of employees or external influence.

Enhancing operational risk is explained by changes [16] in business environment, infrastructure and organizations that have arisen because competition becoming more heated, automated technologies and electronic commerce, emergence of increasingly complex products, due to globalization, decentralization, changes since the banking system through mergers, acquisitions and consolidations, increased activity of retail trade, which led to a more careful management of this risk materialized in the assessment and allocation of capital.

Risk management is a management process that includes techniques and methods used for risk

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assessment and analysis (measurement, control, reporting and taking decisions) in order to provide a vision of the future into which develops policies and strategies.

Efficient risk management leads to increase of the institution by preventing crises, failures, protecting reputation, improving performance, understanding of risk. Basel Committee supports vigilant risk management standard drawing up a risk-based capital adequacy ratio (increasing stability, the credibility of the banking system, equal competition).

Activity of institutions is subject to the availability and/or capital cost of providing stability and absorption losses and thus increases bank reputation.

Capital cannot be considered a substitute for appropriate management. Operational risk can occur not only in banking and that the last time manifested an intense interest in this type of risk.

Until recently, most banking institutions have treated already operational risk based on events that took place, focusing on effects rather than the causes, there was no such risk management.

But lately put increasing emphasis on proactive management that works on the principle "better to prevent than to realize a fact." This approach is based on: the identification and determination of capital for operational risk also for credit risk and market liquidity, combining types of risk and capital to aggregate risk, obtaining information on operational risk factors, choice of coverage or funding operational risk.

For institutions that have an operational risk management performance, characterized by a distant time horizon proactive management turns into a prospective, trying to identify the exposure time at which it is vulnerable due to strategic or environmental changes.

For operational risk management practices must be respected pillar of Basel aimed at setting a minimum capital of minimum funds to cover unexpected losses that may occur in the activity of financial institutions.

Measuring operational risk management is best used to determine the expected loss of operational failures, to determine the worst case loss for a confidence interval, to determine the economic capital required for operational risk and concentration risk.

If the public perceives poor operational risk management, the institution can come to a break or serious damage to business, materialized view and the legal risk.

Thus in the following a try to present an advanced model for determining the capital requirement needed to cover losses that may occur from event risk.

2. DETERMINING THE CAPITAL REQUIREMENT

Since the information provided by the institution which has made analysis were presented in the aggregate an internal assessment approach to apply the following steps.

Initial must be built operational risk matrix that contains information on seven types of events and eight standard business lines.

Next to each line of business should be determined average gross income, and for each matrix cell corresponding operational risk should determine the parameters:

- Probability of loss Event (PE) the likelihood of loss-causing events for using internal historical data on the number of transactions with operating losses and the total number of transactions on-line business

For example if the banking business if there were 1.4 million transactions, and of these systems due to security risks there were 0.18 million loss a commercial, that will have an indicator value of 0.1285714 , which means that the probability of loss due to system security risks in commercial banking business line is 12.85714%.

Loss Given Event (LGE) proportion of exposure that will record the operating loss.

For example, losses of 13.125 million mu systems due to security risks in commercial banking business line, which has recovered millions 8.53125 um, so the remaining loss recognized 4.59375 million mu, LGE indicator is 0.35.

Determining the expected loss will be the product between the parameters previously determined average gross income

And unexpected loss determination that the product of the expected loss of institutions and \( \gamma \) factor (multiplier cell compared to the square root of loss) for every 1 year and a 99.9% confidence threshold.

For example the cell (due to business interruption losses and improper operation of systems in commercial banking activity) \( \gamma = 0.007283 \) for a level of confidence 99.9% loss will not be more than 0.007283 · 2211402.878 = 16106.08722 um. What is the maximum amount to be allocated to operational risk that can occur within the cell.

Capital requirements will determine the amount of expected losses and unexpected of all operational risk matrix cells.

To highlight the superiority of advanced method we determined the corresponding capital requirement for operational risk if the institutions with less elaborate methods such as

- Basic indicator approach implies that the amount of capital that it must determine constitution entity afferent multiplying average gross income of a period of three years by a factor of 15%, and
- Standardized approach involving business lines dividing the work for the allocation of gross income for each sector and a coefficient between 12% and 18%

Thus in the following figure we synthesized the three methods outlined above for the institution on which analysis was performed.
3. CONCLUSIONS

In last time manifested an intense interest in this type of risk and operational risk because it can occur in any sector of the economy not only in banking. So we make a statement that this risk may be caused by:

- Internal processes including risks arising from relationships with customers, products and business practices and Execution, Delivery and Process Management
- Human risk including internal fraud, conditions related staffing and job security, risks arising from relationships with customers, products and business practices.
- Risk Business disruption and systems comprising operation
- External events such as events involving external fraud, damage to physical assets and business interruption and operation.

Establishing actual optimal level of capitalization is particularly important because it allows capital to fulfill their protective function force (absorb unexpected losses - decrease the probability of bankruptcy of the bank and increase the level of implicit trust in the banking system).

Thus there is no one best method to quantify operational risk quantification approaches proposed by the Basel Agreement has some shortcomings implicitly lead to incorrect measurement of this risk:

- While methods "simple" does not require complex database and calculation formulas are simple between indicators of operational risk exposure and cannot establish any connection (increased income is penalized by capital growth and ultimately result in lower gain entity which is the opposite strategy), in addition there is a negative correlation between losses and capital needs. Also these methods do not take into account the internal process-specific differences between institutions and markets in which it operates, cannot demonstrate what the key risk factors and of course the cost of capital is high

- Unlike the simple methods, advanced methods of risk sensitivity has a high capital cost is low but it is difficult implementation and management of data is a laborious process.

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