

# Banking Risk Management: An Increasingly Complex Process

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**Abstract.** *Investigation of risk in banking is lost in the mists of time, and its main approach aimed at creating programs for the prevention and correction of drift occurring in the delivery of financial services. Besides, risk is the object of a particular type of management, called risk management. Numerous approaches to risk management reveal that, over time, it has developed a process of risk prevention. It aims to guide the management of organizations in their actions to minimize the consequences associated undesirable events. From this perspective, banks are advised of the need to address risk sources. These sources are called “threats” and must be subject to rigorous scrutiny.*

**Keywords:** management, asymmetry, vision, risk, crisis, future.

**JEL classification:** E52, E58, F3.

## 1. Introduction

Constant alignment of bank management to strategic stakes and real politics of diversification of financial services develop customer trust in the bank. Aligning role is to strengthen customer confidence in the bank. Diversification of financial services and strengthen customer trust in the bank depends on the quality of management. For example, the practice of *integrated management of processes-risk* is likely to create optimal conditions for expression of individual and collective professionalism of the bank. By practicing integrated management processes, risks, the bank manages to improve activism and produce information useful for composing profile customers in a geographic area.

Practicing integrated management of processes-risks implies also, appreciate Kerebel (2009), a subtle integration between processes and risks based on models and metamodels. Based on these risks can be located at the entrance of a process, out of the process, at the level of control factors and at the level of resources. Upon entering the process, an inaccurate assessment of the quality of risk identification misdirected borrower will repay the loan. On leaving the process, granting credit to a borrower of low quality will determine losses as a consequence of bank credit non-reimbursement. Level control factors – such as constraints and decisions – is likely to bear the negative effects caused by an error in perception of quality borrower's decision. An error in the security proposed borrower may lead to a significant loss to the bank. A situation of balance of power or jurisdiction may affect the level of resources, quality of lending. Conversely, the quality of lending requirements may have a positive impact on the bank. Also, a good management of the lending process can be an opportunity to protect the bank against credit risk and other risk categories.

Thus, in terms of procedural appeared, in risk management, the concept of *risk management process*. There are about this process architecture a variety of views on its structure. Most researchers opt for a structured risk management process in stages. In general, the process of risk management is viewed as a succession of 4-5 straight or circular stages: Maders and Masselin (2009) – 5 stages, Nguena (2008), Constantinescu and Nistorescu (2008) – 4 stages. The analysis of ideas stated by mentioned authors enables us to ascertain an unity of different perspectives. This unity of views is consistent

with standard ISO 31000/2009<sup>1</sup>. In Figure 1 we represent the structure of the risk management process.

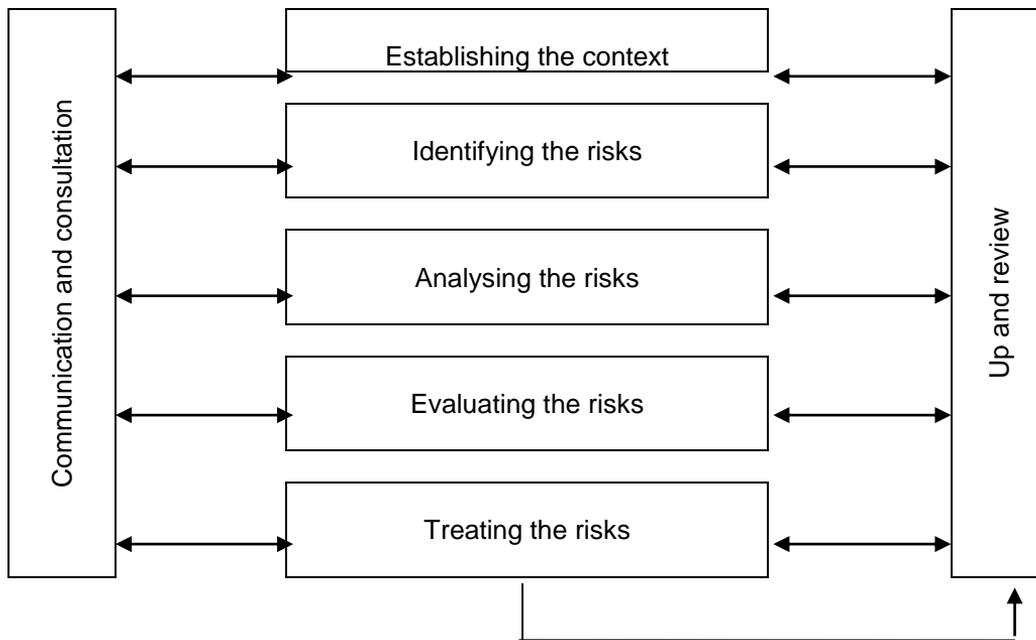


Figure 1. Risk management process, according to ISO 31000/2009

Taking as a reference standard ISO 31000/2009 and approaches mentioned authors, we investigate banking risks using a structured risk management process in 5 stages: identification, analysis, evaluation, treatment, monitoring and control.

## 2. Identifying the risks

Identifying the risks can be done in several ways, but the way in facilitating the implementation of risk management in multiple situations is recommended. "The basic condition for the proper functioning of risk management is the correct risk identification" (Constantinescu and Nistorescu, 2008a, p.156). Through a correct and complete identification of risks creating we obtain an appropriate framework for moving to other phases of risk management. From the point of view of protection and security of banking, undervalued or overvalued risk generates a cost and insufficient respectively excessive cost to cover losses in case of embodiment.

**Risk identification stage** comprises two phases:

- setting the context risks;
- proper identification of risks.

**The establishment of the context of a risk** is preceded by the development of a scenario in order to discover the context. This discovery is called modelling. Typically, we use three models: functional, organizational and that of value targets. Functional context reflects the interrelation of bank functions and interrelation of processes (central, of support and that of piloting risk). The organizational context of risk is determined

<sup>1</sup> ISO 31000 International Standards for Business, Risk Management-Principles and guidelines, 2009.

based on both organizational model and the model based on value targets. Organizational context captures interrelation of human resources that form the subdivisions of the bank in the process. Finally, the context of integration objectives highlights the value of the bank's subdivisions value targets in the process.

Regarding the context of the risks, Nguéna (2008, p.61) considers that the main instrument used is “the grille of comprehensive risk research” (Figure 2). By adopting this grid develops risk location capabilities. For a bank, captures potentially hazardous new locations (five locations within the bank and outside its four seats). Within the grid, the central (lending amounts of deposit, etc.) interferes with the largest share in value creation. This process generates its own risk and cumulative effect of all the risks manifested in other places:

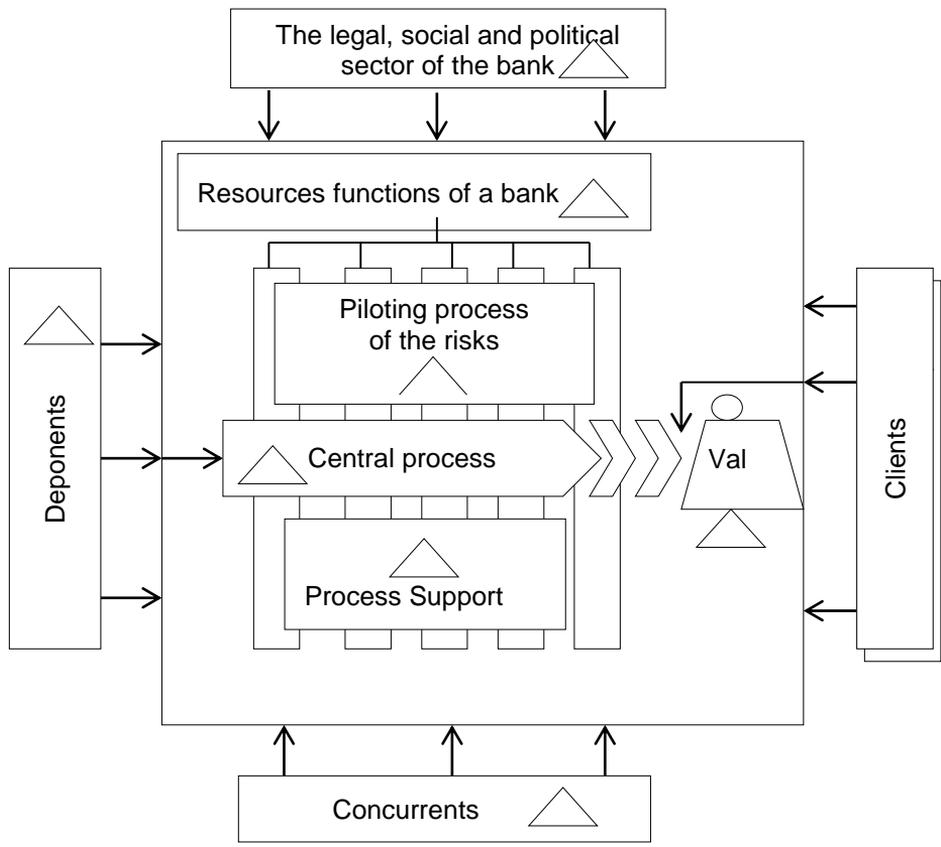


Figure 2. The grille of risk context's global research

Risk context is exposed in a speech synthetic sheet risk. Context refers to specific functional, organizational and values targets interrelationships.

Entries, processing and outgoes phase of establishing the context of risk are:

- Entries
- summaries on functional interrelationships;
  - summaries on organizational interrelationships;
  - summaries on interrelationships of values targets;
  - historical repertoire of risks.

Processing (characterization): { - functional context;  
 - organizational context;  
 - values targets context.

Outgoes { - risks sheets (data about context of risks);  
 - new risks repertoire.

*Identifying itself*, the second phase of the first stage of risk management, is mainly focused on the production risk profile. To this end, proper risk identification should be based on a qualitative-quantitative research to enable a comprehensive approach. Grille of research global risk context (Figure 2) provides information about the possible multiple expressions of risk.

The risk profile is a referential phase proper identification. Langevin (2007, p.226) provides “a list of 12 questions covering ordinary uncertainty factors: regulatory requirements, technical requirements, quality etc.”. The risk profile is specific to each bank considering its strengths and weaknesses.

Entries, processing and outgoes phase proper to identification phase of risk are:

Entries { - data on the bank's internal processes (core processes, support and piloting risk);  
 - individual and collective uncertainty about the bank's internal and external environment;  
 - data about the context of the risks;  
 - historical repertoire of risks.

Processing (characterization): { - documentation about the context in which fall risk;  
 - statements concerning the typology of risks;

Outgoes { - risks sheets (each sheet contains mentions of risk name, the context and where it is possible to produce risk);  
 - repertoire of new risks identified (in this phase adds information related to the context and identification);  
 - list of identified risks.

Nguéna (2008, p.65-67), based on the idea that a company is “a mosaic of activities and processes” recommended method for risk identification method centers and processes.

In terms of method centers can be considered a bank is a mosaic of activity centers. Risk identification is an approach that highlights risks affecting all center activities and, lastly, achieves their targets. Risks center activities affect the general objectives of the bank. Identification of the risks, through the centers method, is based on interviews with managers and operators of activities center.

The method through processes suggests that risk identification to be performed at the level of each process<sup>2</sup>.

The approach to hazard identification processes is structured in three stages:

- identifying the most representative banking processes;
- highlighting the objectives of processes to identify possible links with the bank's objectives;

<sup>2</sup> The notion of process is made by Lobino (1995, p. 55): “a set of interrelated activities through multiple exchanges (of goods, services, etc.) and contributing to the provision of benefits to an internal or external client the enterprise”.

- description of processes identified using flowcharts in order to highlight the weak points and vulnerabilities associated with each process.

In connection with the two methods of risk identification it is necessary to note that the method of work centers are not interested in the links between centers.

Risk identification only operates in each activity center and not at the interfaces between the centers of activities. Risk identification centers where activity is more restricted. A risk identification process is keen to analyze all process activities and links between activities. This means identifying risks and at the interfaces between activities. Study interfaces lead to more extensive risk identification.

### 3. The Analysis of Risks

Risk analysis is the stage following the identification. Risk analysis sets its roots in studies of functional safety (Lobez, 1997). Research Dependability (reliability) aims to identify solutions to maximize system availability and the risk analysis seeks to detect the appearance of an event that may produce a negative impact. The overall process of risk analysis (risk assessment) is part of an approach structured in three parts: preliminary risk analysis, zonal analysis and qualitative analysis.

*Preliminary analysis* complements identification stage. Through consistent arguments confirm or deny the place of event risk. However, preliminary analysis provides a more accurate description of weaknesses and consequences of the manifestation of risks. Basically, the preliminary analysis is an analysis system that aims to identify the main functions, the goals and their interactions. Preliminary analysis involves a query opportunities deviation relative to prescribed operation of the system. If interrogation, the preliminary analysis is using keywords applied to operating parameters.

Preliminary analysis develops after interrogation, “flow chart and tabular presentation forms” (Dickson, 1991). Based on the two instruments, the preliminary analysis enables analyses of the weaknesses of each system component. Simultaneously, preliminary analysis provides information about the consequences of weaknesses and their impact on system operation.

*Zonal analysis* facilitates a plan or program, identify opportunities for spreading weakness. Zonal analysis is an extension of the preliminary analysis both in content and in repertoire analysis tools. At the end of zonal analysis we obtain a more complete picture of the risks. Through zonal analysis we bring substantial corrections to outgoes of identification stage of risks.

Risk analysis stage ends with qualitative analysis. This analysis provides a better contoured about identifying risks. Qualitative analysis uses scenario analysis, and finally a new image causes and consequences of the risks. For the analysis of scenarios, considers Leroy and Signoret (1992), the principal tools are “weaknesses tree” and “the tree of events.” The combination of two analysis tools allows the modelling of a potentially hazardous event.

Entries, processing and outgoes phase proper to risk analysis stage:

- |             |   |   |
|-------------|---|---|
| Entries:    | { | <ul style="list-style-type: none"> <li>- risks files resulting from identification stage;</li> <li>- list of risks (summary sheets of identified risks);</li> <li>- historical repertoire of risks identified;</li> </ul> |
| Processing: | { | <ul style="list-style-type: none"> <li>- preliminary risk analysis;</li> <li>- zonal risk analysis;</li> <li>- qualitative risk analysis;</li> </ul>  |
| Outgoes:    | { | <ul style="list-style-type: none"> <li>- risks identified and analyzed records;</li> <li>- list of identified and analyzed risks;</li> <li>- repertoire of new risks analyzed.</li> </ul>                                 |

#### 4. The Evaluation of Risks

Stages of identification and risk analysis are completed by a list of risks identified and analysed, as the list of potential risks. This list does not show any information about the impact, severity and potential risk acceptability events. The bank, based on the list of potential risks cannot commit actions of risk prevention and protection in case of materialization of undesirable events. For the bank to orient its actions risk treatment (stage whose objective is to prevent and protect against risks) is required to conduct *risk evaluation*.

Following the evaluation, the risks get listing in order to be ranked and classified. The hierarchy should not be confused with prioritization. Hierarchy enables a precise demarcation between the major risks and minor risks. The classification was based on hierarchy and aims at adding new information about risk acceptability and unacceptability. Boundaries between acceptability and unacceptability are based on knowing the limit of acceptability.

Nature stage risk assessment is given by operations hierarchy and classification, both operations dependent on the existence of a set of parameters (criteria). Set of parameters for setting up the risk assessment approaches will appeal to authors: Curaba et al. (2009) and Nguéna (2008): impact; gravity; appearance; acceptability; control.

As a result of hierarchisation – the parameters occurrence and severity (Nguéna, 2008, p. 72) and the scale of occurrence and severity on 4 levels (Curaba et al, 2009, p. 102) – the risks are grouped in three categories (Figure 3):

- major risks (increased levels of occurrence and severity);
- minor risks (present low levels of occurrence and severity);
- intermediate risk (occurrence and severity are simultaneously high or low).

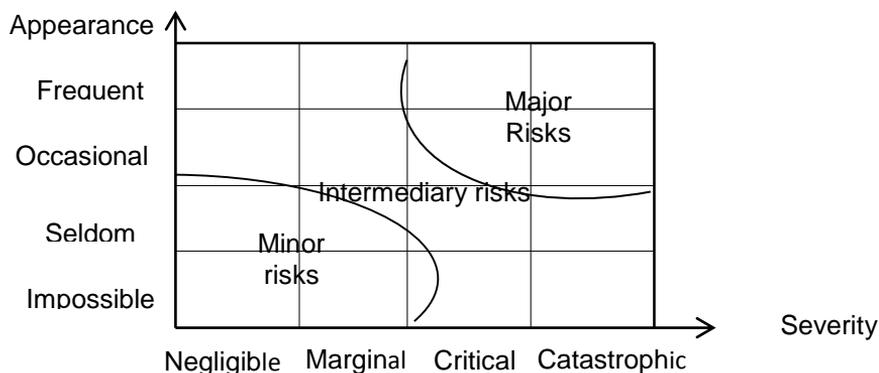


Figure 3. Risk hierarchy based on occurrence and severity

The attitude towards the major risks is obvious “risk aversion” (Nguéna, 2008, p. 74). Accepting a risk is a complex decision that must be assumed by the Board.

Minor risks are “always viewed through an attitude of thrift, prudence maximum” (Nguéna, 2008, p. 74). In light of these risks appears an attitude of tolerance, even acceptance.

The most difficult decisions related to interpreting intermediate risk. In this regard, it must be noted, according to intermediate risk area shown in Fig. 2 that some risk is characterized by a frequent occurrence and elsewhere through a catastrophic severity. In both cases, the extent of the bank's risk aversion is high. For intermediate risk, the bank is interested in further clarifications. In fact, bank interest is to know which risks can be accepted. A good explanation in this respect is achieved when all risks are divided into two categories: acceptable and unacceptable. To this end, Nguéna (2008, p. 76) proposes a classification of risks by knowing the limit of acceptability (Figure 4).

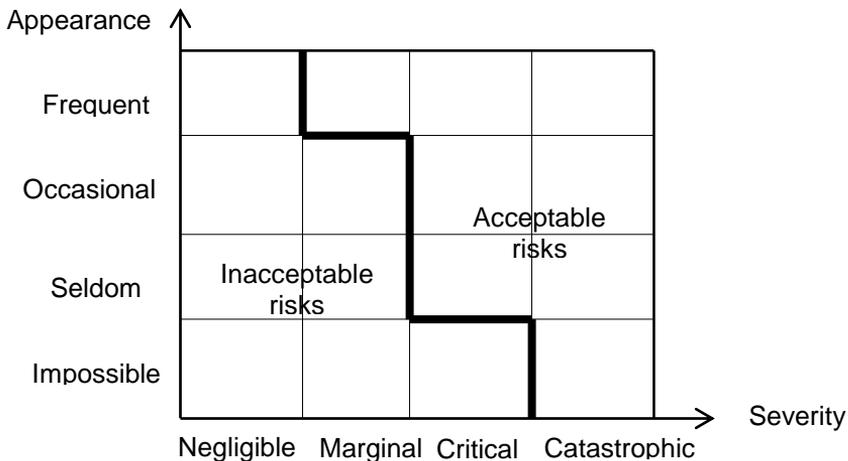


Figure 4. Limit of acceptability

In conclusion, the bank can accept (in terms of appearance and seriousness) The following categories of risk:

- appearance with “common” and severity “negligible” severity;
- appearance with “occasional and rare” and “negligible and marginal” severity;
- appearance with “unlikely” and “negligible, marginal and critical” severity.

Entries, processing and outgoes phase proper to evaluation stage are:

- |            |   |  |
|------------|---|--|
| Entries    | { | - sheets of risks resulting from analysis stage;                   |
|            |   | - list of analysed risks;  |
|            |   | - parameters selected for evaluation;                              |
|            |   | - historic repertoire of analysed risks;                           |
| Processing | { | - hierarchy of risk evaluation;                                    |
|            |   | - establishing the limit of acceptability and risk classification; |

- Outgoes {
- sheets of risks resulting from analysis stage (in the schedule risk analysis adds data resulting from the operations of hierarchy and classification);
  - list of evaluated risks;
  - repertoire of new evaluated risks.

**5. Treating the Risks**

Corbel (2012, pp. 124-134), Maders and Masselin (2009, pp. 95-110) and Nguéna (2008, pp. 87-97) believes that after the risks have been assessed, prioritized and classified can move on the step of treating. About the treating of risks Nguéna states (2008, p. 87) that is “develops from the major risks to the minor risks”. This means that major risks should be regarded as unacceptable risks and minor risks as acceptable risks.

For major risks, risk management should be based on a policy of outsourcing. Maders and Masselin (2009, p. 98) that “outsourcing, as transfer risk to outside firm can bring an important contribution to addressing the risks.” Of course, in addressing the risks by outsourcing it is necessary to proceed from the idea of partial transfer of risks and only if it is even possible total. It is possible that some of the major risks to be treated. Treatment of this side will aim to reduce risks impact, severity and duration of exposure. Treated major risks can become accepted risks.

Minor risks, as the risks accepted, are a treatment process that “is based on prevention and protection” (Nguéna, 2008, p. 88). Prevention comes through action to reduce emerging risks, while protection actions opposing consequences. Where risks are treated simultaneously create conditions prevention and protection as major risks to move to the minor risks. In Figure 5 we represent the effects of treatment risks through preventive action and protection. Efforts to prevent contribute to reducing the occurrence, as common risks are rare and unlikely risks. Protection actions reduce the severity of risk, as the risk of catastrophic risks is marginal and negligible gravity.

Through the combined actions of prevention and protection, major risks (unacceptable) moves towards minor risks (acceptable).

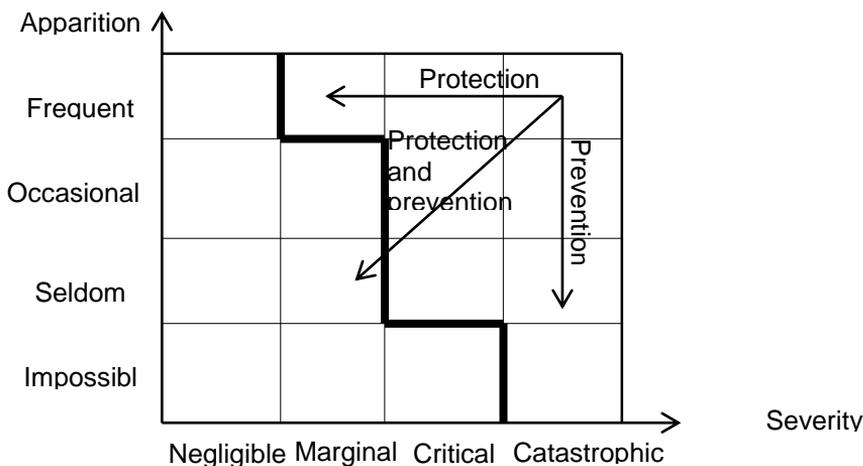


Figure 5. Effects of treatment risks through preventive action and protection

Corbel (2012) and Nguéna (2008) suggest that the selection of risk treatment actions should be based on quantitative method. Corbel (2012, pp. 125-129) proposed target cost and Nguéna (2008, pp. 88-89) suggests that selection decision is based on two parameters: cost and cost variance.

Target cost is a “desire” of the manufacturer of a product or provider of a service (bank, for example). Reaching the target cost involves duplication, after some time, the costs resulting from the two approaches. The first approach, specific pro-innovation is the fact that starting from a high cost may be reduced by continuous innovation. A second approach is the fact that an existing system is under the initial constraint and, as a result, the cost of starting is unique. As the product manufacturer or service provider is facing different problems and increase the cost adds unnecessary functions. After a while, spreads cost target – cost approach (first or second) are zero overlap and target cost. This cost target will be used for evaluating the actions of treatment (Corbel, 2012, pp. 125-129).

Nguéna (2008, pp. 88-89) believe that risk involves current and future costs. The charges relate to the prevention and protection in order to avoid, reduce, sharing, transfer and acceptance risks. The second parameter, the change in risk by comparing the cost of risk is obtained in two ways: the risk occurs in conditions of gravity the risk of catastrophic or under gravity occurs negligible (or does not occur). Thus, variation in the cost is the cost difference between maximum and minimum cost of treatment actions.

Researching the relationship variation-cost is a matter of measuring the effectiveness of risk treatment. Actions risk treatment will be effective when the gain resulting from increased variance is greater than the loss incurred on account of decreasing variation. The effectiveness of treatment can be assessed based on the “solvency limit and limit profitability.” (Nguéna, 2008, p. 93).

*Solvency limit* positive depends on the size of the working capital, the need for working capital and bank indebtedness. A higher working capital shows that the bank has liquidity to cope with risks. Also, a balanced level of indebtedness shows a good ability to counter risk on the size of the working capital, the need for working capital and bank indebtedness. A higher working capital shows that the bank has liquidity to cope with risks. Also, a balanced level of indebtedness shows a good ability to counter risk. *Profitability limit* is not a problem of profit under increased cost avoidance, reduction, sharing, transfer and risk acceptance. The problem of the bank is to know their limit and any financial exercise to end with an higher revenues than costs.

Entries, processing and outgoes phase proper to evaluation stage are:

- |            |   |   |
|------------|---|---|
| Entries    | { | <ul style="list-style-type: none"> <li>- sheets of risks resulting from evaluation stage;</li> <li>- list of evaluated risks;</li> <li>- historic repertoire of evaluated risks;</li> <li>- planning resources;</li> <li>- limits and constraints of planning;</li> </ul> |
| Processing | { | <ul style="list-style-type: none"> <li>- elaboration of action plan for prevention and protection;</li> <li>- implementing the action plan for prevention and protection;</li> </ul>  |
| Outgoes    | { | <ul style="list-style-type: none"> <li>- sheets of risks resulting from treating stage;</li> <li>- list of treated risks;</li> <li>- list of risks that contains the treatment;</li> <li>- repertoire of evaluated new risks.</li> </ul>                                  |

## 6. Monitoring and Controlling Risks

Last stage of risk management is monitoring and control. This step is involved in all the other stages. Constantinescu and Nistorescu (2008, p. 178) considers that “risk profiles should be monitored and controlled to check if initial responses are effective.” The last phase of risk management process integrates two phases: monitoring and control.

*Monitoring stage* has three tasks: gathering information, convergence of information and communication of results. Phase tracking is based on process-specific integrated management approach. Integrated order management practice is to facilitate the harmonization of piloting risks arising from the specific requirements of central and support processes. Through integrated management monitoring phase adds a preventive vision.

To achieve the three activities, phase tracking is based on the following entries:

- action plan for prevention and protection;
- risk sheets completed a stage of risk management;
- risk list results in a stage of risk management;
- historic repertoire risk results in a stage of risk management;
- the resources stage of the process of risk management;
- measures based on indicators and triggers.

Processing phase tracking start by collecting information needed to carry out several actions:

- identify measures to improve risk consequences;
- information on the processes that are likely to have impact on risk;
- updating information about risk assessment parameters;
- collect all information necessary additional clarifications risk management process steps.

Convergence of information involves a set of attributes which essentially consist of analyzing and determining each risk. In the course of these attributes should be given to the triggers. They provide useful warnings starting, running or suspending actions specific to each stage of the process of risk management.

Communication of results is work which contributes to the initiation, conduct and completion of both information collection and to ensure the convergence of information. Communication of information about risk management process is carried out by the documents of all stages, mainly by risk returns. The outgoes of monitoring phase are:

- action plan to prevent and protect updated;
- descriptions risks include the words “current situation of risk”, as “enhanced risk” or “risk to be improved”;
- improved risk list;
- list of risk to be improved;
- progressing report;
- repertoire of new monitoring risks.

*Control phase* is to analyze progress reports issued by the prosecution stage, to begin a process control decision-making and decisions implemented. Analysis, initiation and control activities are components of phase control.

Regarding risk controls, Langevin (2007, p. 243) considers that to carry out this phase of the management “is necessary to create a change management system in which control is a major change.”

With reference to claims made, it may be deemed to control phase contains two sequences: proper control and control of changes.

*Control itself*, according to the authors Maders and Masselin (2009, pp. 103-105), is a device that integrates 4 levels of control: permanent operational control,

permanent control of first level, second level permanent control and periodic control of the level 3.

The risk management process, changes are attributable risk events, operational actors, managers and customers. Change control involves *conducting phase change*. The banking risk management meets generally three types of changes:

- in content (changes from changing banking regulations, administration control processes and support, etc.);
- imposed by the implementation of action plans;
- piloting the proposed risk group.

The specific procedure of control phase change proposed by Constantinescu and Nistorescu (2008, p. 180), is shown in Figure 6

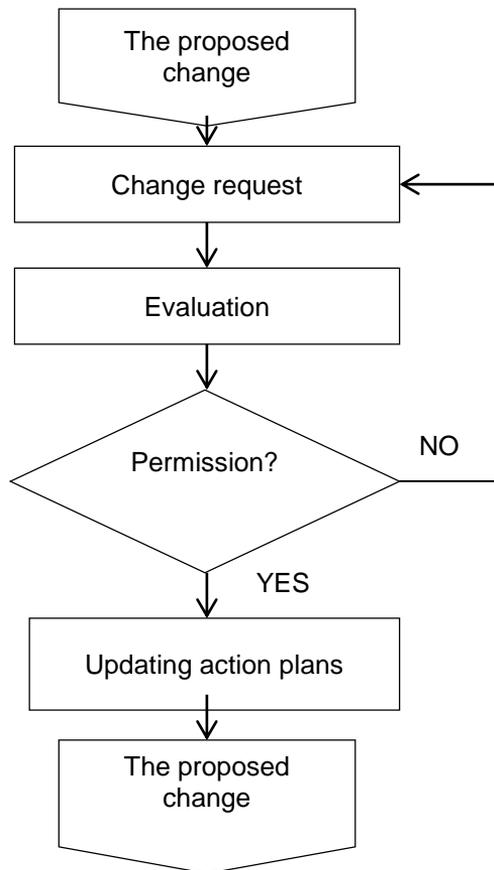
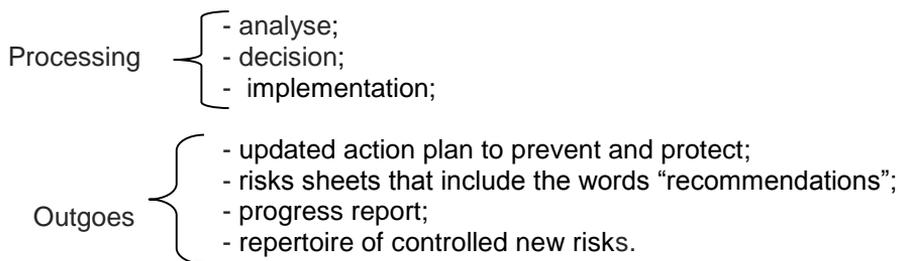


Figure 6. Specific procedure of control change's phase

Entries, processing and outgoes phase proper to control of risks stage are:

- Entries
- action plan for prevention and protection;
  - completed risk's sheets of a risks' management stage;
  - list of risk's sheets of a risks' management stage;
  - historical repertoire of risk's sheets of a risks' management stage;
  - resources of controlled risks' management stage;



## 7. Conclusions

Taking as a reference the legislation and the approaches of some prestigious authors, we intend to structure the risk management process into five stages: identification, analysis, evaluation, treatment, monitoring and control.

In a systemic vision, we considered that the risk management presents these attributes: inputs, system status, outputs and external feedback. State of the risk management system process emphasizes the interrelation between subsystems: operational, instrumentation and connection subsystem. The latter subsystem is also called "information and communication subsystem". Operational and instrumentation subsystems configures the operational and instrumentation sides of the risk management process. The connection subsystem facilitates the internal feed-back and the communication between the operational and instrumentation subsystem.

In conclusion, we believe that credit risk is a chronic problem of banking systems today, driven by phenomena that determine the identity of their activities, among which: the economic downturn, reducing the sovereign creditworthiness, the transition to implementation of new capital standards, the type of support provided to banks.

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