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Banking Risk Management between the Prudential and the Operational Approaches

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***Abstract*—**Since the nineties, all Moroccan banking institutions have to respect an arsenal of prudential ratios. The respect of these prudential measures aims to ensure the financial system stability. In order to do so, regulatory authorities tried to reduce the financial and operational risks incurred by the banking entities. Meanwhile, regulatory authorities demanded a balance sheet management work from banks. They also asked them to establish a management control system to manage operational risk, as well as an effort in terms of incurred risk-based commitments. Therefore, the prudential approach has a macroeconomic nature and it is presented as a determinant of the operational, microeconomic approach. This operational approach takes the form of a strategy that each banking entity must develop to manage the different banking risks. This study seeks to analyze the problem of risk management between the prudential and the operational approaches. It was processed through a literature review followed by an analysis of the Moroccan banking sector's performance. At first, we will reconcile the inductive logic and then, the analytical one. The first approach consists of analyzing the phenomenon from a normative and conceptual perspective, while the second one will consist of considering the Moroccan banking system and analyzing the behavior of Moroccan banking entities in terms of risk management and performance. The results identified a favorable growth in terms of performance, despite the huge provisioning effort made to meet the international standards and the harmonization of the regulations.

***Keywords*—**Banking performance, financial intermediation, operational approach, prudential standards, risk management.

I. Introduction

BANKING institutions have many jobs as financial intermediaries. The commonality between these jobs is the risk factor, which is the basis of the financial intermediation. In fact, the emergence of the banking activity was first due to the existence of a risk-based commitment within the direct relationship between agents with financing capacity, or lending agents, and others with financing requirements. This malfunctioning among the market has resulted in the emergence of new economical agents, whose main mission is to make the direct relationship indirect by being the financial intermediary between the two kinds of agents. Thus, the financial intermediation aims to ensure the risk management in banking. This risk management was, at first, about transforming assets issued by agents with funding requirements and purchased by lending agents into non-core assets, in order to respond to all economic agents' needs. In this context, risk management in banking consisted on the balance sheet management of the financial intermediaries, which was an implicit form of the asset and liability management (ALM). Afterwards, it consisted also about trading assets, as part of the financial market intermediation. However, the financial system was not yet clear of problems that could eventually lead to crisis situations, even if the financial intermediaries were taking action. Although they were trying to solve problems, they slowly became a main source of problems and dysfunctions. Indeed, as economic agents seek profit maximization, the financial intermediaries started developing speculative behaviors such as excessive risk-taking. Consequently, the financial intermediary has become a main source of problems that led the financial system into several crises over time. As a response to these crises, the State took action by orienting the behavior of the financial intermediaries in order to ensure a global stability.

State intervention has been translated by the introduction of a financial regulation whose objective was to harmonize the conditions to which financial intermediaries would work and seek more transparency. Nevertheless, crises kept on multiplying over the time and financial intermediaries were still considered as the source of these crises, despite the implemented financial regulation. The situation would get even worse with the internalization phenomenon in terms of the financial intermediation activity and the financial liberalization policies adopted by the market-driven economies. Actually, that was the main factor that amplified the concurrence and excessive risk-taking within an environment full of information asymmetry.

e internalization of the activity and the probability of contagion effect in terms of crisis have resulted on the creation of committee by developed countries, known as Basel Committee, that later released the Basel Standards. These standards were about the behavior that banking entities should have concerning their ex-ante action. Thus, the Basel Standards are subsequently translated at the regulations of each country. The main measure following the Basel standards is the establishment of prudential ratios. This prudential arsenal represents the basis of prudential banking risk management. Therefore, banking organizations have been forced to respect the different measures imposed by the legislature while doing their operational management work in banking risks. It mainly consists of strategies of risk management that were previously elaborated by banking organizations and whose essential determinant is the prudential management. Consequently, we get to the dilemma of risk management in banking between the prudential and the

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operational approaches. In this sense, this article's purpose is to help us understand and analyze this dilemma through the following research problem: "How should banking entities proceed when defining risk management strategies, considering the relationship between the prudential approach (macroeconomic level) and the operational approach (microeconomic level)?" In order to address this research problem, we will reconcile the inductive logic and the analytical one. The first approach consists on analyzing the phenomenon from a normative and conceptual perspective, while the second one will consist on considering the Moroccan banking system and analyzing the behavior of Moroccan banking entities in terms of risk management and performance.

II. Financial Risk Management and the Emergence of Financial Intermediation

The financial system is the actual place where lending agents and those in need of financing actually meet. Before the emergence of financial intermediation, the financial system allowed the meeting between these two agents through a direct relationship. It was based on the issuance of financial assets with value signs that would get purchased by lending agents who respond to a profit sought by the issuers. This direct relationship is characterized by a financial risk that comes from the behavior of agents in need of financing. The insolvency situation that may occur is materialized by the non-compliance toward lending agents, and may negatively influence their behavior. Consequently, they no longer trust the direct relationship anymore and develop a certain reluctance.

The main consequence of this situation is a malfunction in the financial system. It is materialized by the inability of the system to allocate scarce savings into productive investment. Hence, a confidence problem emerges between the two involved agents, and may eventually lead to a crisis situation. We basically refer here to the systemic risk. It is an anomaly that is rooted in a problem of information asymmetry between economic agents. In this sense, the emergence of financial intermediaries can be justified by a risk management problem in the direct relationship. Nevertheless, the emergence of the financial intermediation can be justified by some other imperfections in the direct relationship. It can be related to the characteristics of the issued financial asset, such as a problem of liquidity, maturity of transaction costs. All of these problems are a result of the information asymmetry [1]. To this end, financial intermediaries proceeded to transforming issued primary assets in non-core assets that can meet all the needs of agents with financing needs. In this sense, financial intermediaries have conducted the allocation of savings to investment through the transformation of the issued financial assets' nature, making an explicit match between them. On the other hand, financial intermediation can be justified by the behavior of agents when facing risks [1]. Indeed, financial agents are better placed than non-financial agents to take risks as they benefit from cost savings and scale economy because of their specialization. They also benefit from insurance, banking pools and lenders of last resort that can give them greater flexibility in terms of risk taking. In addition to transactions cost control and information asymmetry, financial intermediaries act as liquidity providers. However, the evolution of this activity has resulted in the emergence of new financial risks. In this context, financial intermediaries have faced credit risk, resulting in counterparty risk and leading to liquidity risk. In case of a massive withdrawal of customers, this risk takes the form of a loss of confidence in the bank or in the banking system in general [2]. The proliferation of these risks can result in systemic risk that may reflect the mistrust of economic agents towards financial intermediaries, and that could eventually lead to a systemic crisis [3]. Therefore, and given the weight of the financial intermediary and its portfolio, there can be a contagion effect and transmission problems in the financial system.

Due to interaction between the different channels of the real economy, the contagion gets spread quite quickly in the real economy [4].

To avoid a domino effect and an eventual confidence crisis, the authorities were forced to take action as an actor in the financial system. Their action consisted mainly on setting up a structure whose first purpose was to supervise the behavior of financial intermediaries. This structure was the Central Bank whose major task was to attach standards and rules established as a banking law [5]. Having that said, we started talking about a regulatory policy whose pivot is the central bank. Indeed, the fact that it emits the ultimate liquidity, the central bank is the only institution capable of assuming the financial systems' stability as a whole. This stability is based on the design of a financial regulation, representing an implicit logic of risk management emanating from the behavior of financial intermediaries.

The evolution of the activity of financial intermediation has forced authorities to proceed with the establishment of standards that consisted on limiting the increased competition between the financial intermediaries. It resulted in the apparition of a new form of financial intermediation: the financial market intermediation [6].

Unlike the balance sheet management in financial intermediation, the financial market intermediation is based on trading assets instead of transforming them. Thus, the financial intermediary is a player in the financial market, with a mission to receive sell and purchase orders of negotiable financial assets and reconcile them. The emergence of this new form of financial intermediation was responsible of the emergence of market risk. This latter has necessitated the adoption of new methods, techniques and strategies, dedicated to its management. This phenomenon has taken an important dimension through another phenomenon, namely the internationalization of the activity of financial intermediation. The internationalization has been the source of interdependence of economies, and therefore, resulted in the contagion effect between them. It is the domino effect that takes place right place after a financial crisis emerges, and that goes from a country to another [7]. To address this problem, legislators internationally proceeded to the creation of a reflection committee, known as the Basel Committee, whose main purpose is to figure out how financial intermediaries should behave in terms of financial risk management. Their work was then a reference when anticipating systemic crises.

The Basel Committee has conceived several recommendations that should be respected by intermediaries. These macroeconomic recommendations took the form of a macroprudential framework that signatory central banks of the agreements had to transpose in their financial regulation. The macroprudential approach is the basis of the operational management in banking risks, hence the paradox of the risk management between the prudential and the operational approaches.

III.Banking Risk Management between the Prudential and Operational Approaches

The foundation of the financial intermediation activity is to manage risks related to the behavior of agents in need of financing and lending agents. In this sense, financial intermediaries make a sort of compensation by accepting a level of risk that can cause losses and multiplying the number of transactions with economic agents. Since then, financial intermediaries have to consider the regulation as a major determinant of their operational strategy in banking risk management. The prudential approach is a reference for financial intermediaries in both their transformation and trading activities.

The Basel Committee developed the Basel Standards that should be complied by the agreements' signatory countries. The Basel I standards focused initially on the credit risk, as the main risk to the origin of the international financial system dysfunctions. In response, the Basel Committee has developed a prudential ratio, called Cooke ratio. It is a solvency ratio, requiring financial intermediaries to have enough provisions in terms of equity compared to their commitments.

The committee proposed a minimum of 8% of capital requirements. Signatories central banks of Basel I standards have proceeded to transpose these recommendations in their respective regulations. Thus, financial intermediaries have found themselves forced to address these regulatory principles in developing their financial risk management strategies. These operational strategies should consider the regulations, mainly in terms of prudential ratios, as a determinant of the work required to manage banking risks.

The evolution of the financial intermediation, in particular, and the international economy, in general, has shown the limits to the application of Basel I standards. This required the design of new agreements. Indeed, among the limits of Basel I agreements, there is the fact of not taking into account operational and market risks. Therefore, regulation authorities have designed new agreements, qualified Basel II, that focused on the review of the Cooke ratio and its replacement by the McDonough ratio. This latter represents a minimum ratio between regulatory capital and exposure to total risk, defined as a weighting of credit risk, market risk and operational risk [8]. Basel II standards also asked credit institutions to establish an internal control system in order predict and better manage operational risk. Despite this reform, Basel II standards had significant limitations. Indeed, the emergence of 2007 financial crisis showed the failure of prudential measures to predict dysfunctions in the financial system. This crisis has highlighted the liquidity problem that led to the systemic crisis. This said that the Basel Committee has focused on measures to first manage the system liquidity risk. In 2010, new agreements were implemented, described as Basel III. The main contributions of this reform concern the introduction of two new prudential ratios, namely the short-term liquidity ratio (LCR) and the net stable funding ratio (NSFR). Basel III also introduced other ratios [9]. The most important of these ratios is the capital conservation buffer, representing 2.5% of risk-weighted assets. Thus, capital requirements were increased to 10.5% instead of 8%.

Through this analysis, it appears that the prudential approach focuses on strengthening the capital in order to have the possibility of dealing with banking risks over time, mainly liquidity risk.

A. Risk Management in the Moroccan Banking Sector: The Transposition of the Prudential Approach in the Operational Strategies

In the Moroccan banking system, Moroccan banks, like their western colleagues, manage banking risks by adopting an operational approach, based on the compliance with the prudential approach which is developed by the Central Bank (Bank al Maghrib). Thus, to operationally manage banking risks, financial intermediaries are required to develop strategies based on the use of methods that aim to a global risk management instead of using monitoring methods for each category of banking risks [10].

In order to meet the customers' and the foreign partners' needs, Moroccan banks had to develop risk management strategies, combining the operational and the prudential approaches. These strategies are based mainly on the necessity to design an internal control system.

In Morocco, the first banking law was introduced in 1967. It aimed to establish the basic foundations of the exercise of the banking activity. Through this law, the Moroccan legislature sought to define the concept of Bank and its functions.

Almost the same international prudential arsenal is applied by the Moroccan banking sector. The authorities have planned five major measures to cover banking risks incurred by financial intermediaries [11]. They include the solvency ratio, coefficient of division of risks, foreign exchange risk mitigation factors, the liquidity ratio and the provisioning of nonperforming loans.

Banking risk management requires a considerable effort from credit institutions in terms of provisioning. Theoretically, it results in a handicap at the Asset-Liability Management. This handicap is materialized by the inability to use all the resources and must then have a negative impact in terms of efficiency. However, the behavior of Moroccan banks generated value creation over time. This embodies a positive performance despite the provisioning constraints. In this sense, Moroccan banks recorded positive changes in indicators, which reflect both profitability and risk management. Indeed, if we put the light on the results published by BAM from 2006 to 2017 [12][1], we find that the banking institutions have achieved positive results overall. The choice of the studied period is mainly justified by the introduction of the Banking Act of 2006, which allowed the implementation of the new standards of Basel II agreements in terms of risk coverage. The performance indicators used in this analysis are related to balance sheet aggregates (loans, deposits, capital, outstanding debts), intermediate management balances (IMB) of banking (net banking income (NBI), earnings before interest, taxes, depreciation and amortization (EBITDA), net income (NI)), the return on equity and the return on assets (ROE and ROA) and the cost of risk.

When we have analyzed the consolidated balance sheet of Moroccan banking institutions, it showed us a positive performance trend among all the chosen indicators. In fact, the assets and liabilities recorded a positive trend throughout the study period. This reflects a positive attitude despite the effort in terms of supplying.

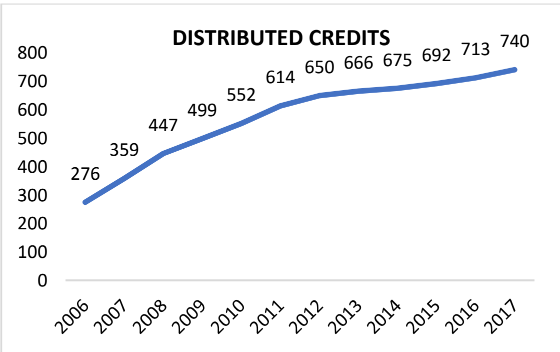

Fig. 1 The evolution of distributed credits by the Moroccan banks (in million Moroccan dirhams)

Assets of banking entities are characterized by a shift upwards of distributed credits. This evolution is materialized by an annual average growth rate of 11%. Meanwhile, NPLs recorded a negative growth rate for the analyzed period, going from 11% in 2006 to 8% in 2017.

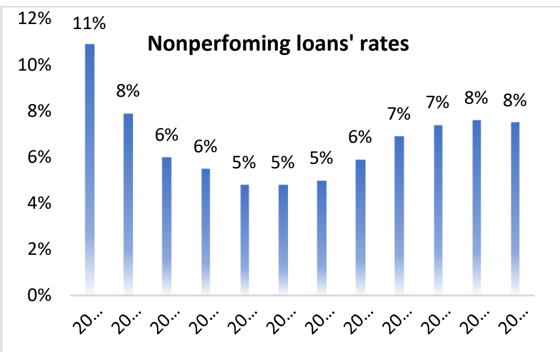

Fig. 2 The evolution of nonperforming loans' rates

[1]See the reports published by Bank Al Maghrib, from which we have extracted all the mentioned data.

The period has been marked by two phases. The first phase was characterized by a continued decline in the rate between 2006 and 2011, a drop of more than 6 points. The second phase was marked by a change in trend upwards to 8% in 2017. In general, this indicator of risk-taking shows a favorable behavior of Moroccan banks.

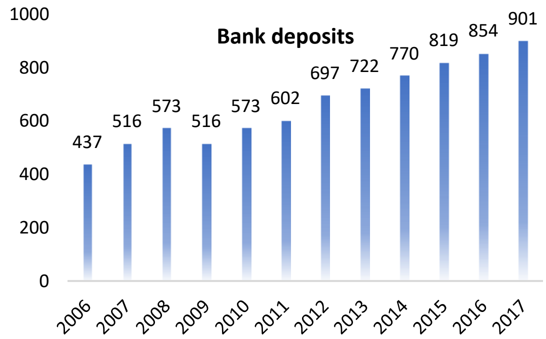

Fig. 3 The evolution of bank deposits from 2006 to 2017 (in billion Moroccan dirhams)

On the liabilities side, the resource analysis shows a significant evolution of customers' deposits. Bank deposits recorded an annual growth rate of 8% for this period.

The liabilities side shows a positive evolution of the capital section. In fact, it has evolved in an average of 10% each year, going from 40 billion Moroccan dirhams in 2006 to 115 billion Moroccan dirhams in 2017. This net increase of the capital reflects a considerable effort made by Moroccan banks to honor their commitments regarding the central bank. These commitments translate the will of Moroccan banks to meet the requirements of the implemented prudential risk management.

To assess the behavior of banks in terms of risk management, the balance sheet management can be a useful indicator. The analysis of the balance sheet indicators shows a favorable ALM in Moroccan banks. Indeed, the coverage of nonperforming loans has fluctuated around 70%. Meanwhile, Moroccan banks have significantly increased their level of provisions to deal with the rising risk exposure.

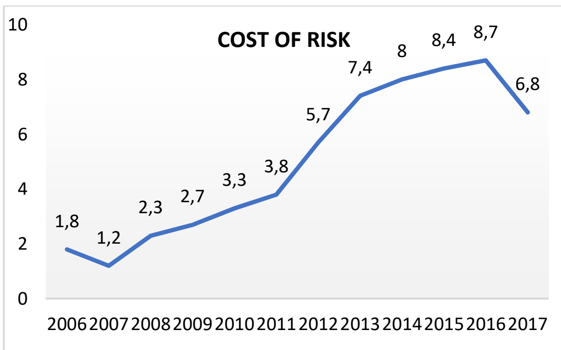

Fig. 4 The evolution of the cost of risk (in billion Moroccans Moroccan dirhams)

Banks have increased the cost of risk reported to the

EBITDA. This indicator went from 1.2 billion Moroccan dirhams in 2007 to 8.7 billion Moroccan dirhams in 2016, and went back to 6.8 billion Moroccan in 2017.

Through the previous results, it appears that despite the rise observed in the cost of risk, the Moroccan banking system recorded a positive trend in all of these balance sheet indicators. This finding may be the consequence of a good operational management in banking risks. Furthermore, the analysis of profitability indicators (mainly intermediate balances) confirms the favorable behavior of the Moroccan banking system.

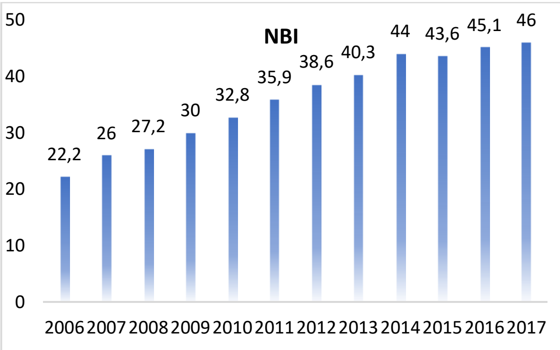

Fig. 5 The evolution of the NBI (in billion Moroccans dirhams)

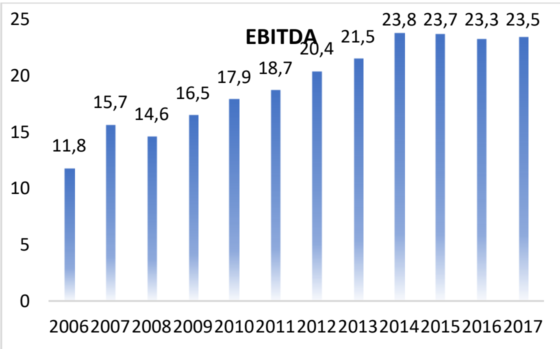

Fig. 6 The evolution of EBITDA (in billion Moroccan dirhams)

The NBI of Moroccan banks is a gross indicator of profitability. It shows a positive trend in the banking business. Indeed, this indicator has registered a continuous increase throughout the period, going from 22.2 billion Moroccan dirhams in 2006 to 46 billion Moroccan dirhams in 2017. It has registered an increase of 107% during this period. This increase is due to the good overall progress of the interest margin commission and a remarkable increase in the market activities income. This positive behavior can also be explained by the gradual recovery of the intermediation margin. However, the NBI's growth rate is marked by periods of deceleration, mainly related to the slowdown in interest margins and commission margins, although they were positively changing. In addition, 2015 was marked by a sharp decline in NBI. This decrease is explained by a decline in interest margin related to the collapse of the applications of funds. Combined with a slowdown in the credit activity, lower interest rates and a rising level of cost of risk, this situation can be an explanatory factor to the adverse behavior during this year.

We have analyzed another indicator, EBITDA. It indicates a net increase during the studied period. In fact, it has increased from 11.8 billion Moroccan dirhams in 2006 to 23.5 billion Moroccan dirhams in 2017. This increase is mainly due to the positive evolution of the NBI, thereby reflecting a positive performance of the whole Moroccan banking sector.

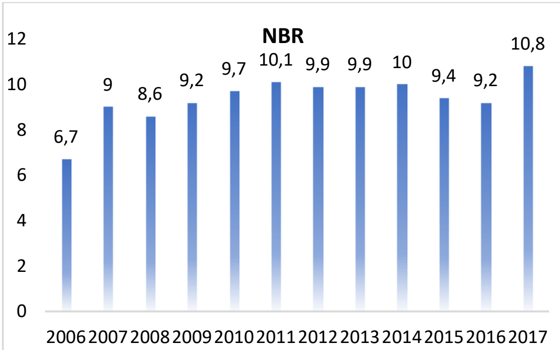

Fig. 7 Evolution of the NBR (in billion Moroccans dirhams)

The analysis of net banking result (NBR) confirms the previous observation. Indeed, this indicator has evolved in a positive way, registering an average growth rate of 2.7%. In terms of value, the NBR increased from 6.7 billion Moroccan dirhams in 2006 to 10.8 billion Moroccan dirhams in 2017. This positive growth is rooted in the solidity of the income generated by transformation activities and the overheads' control.

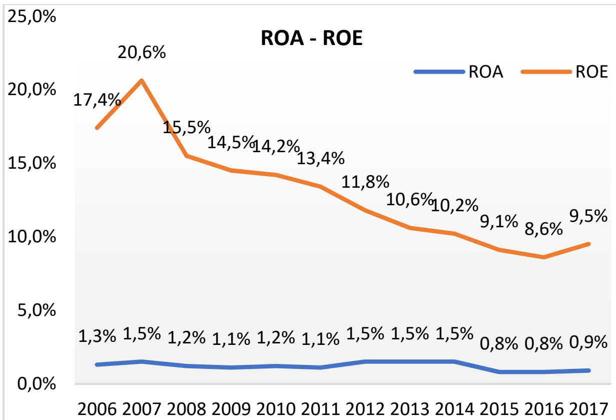

Fig. 8 The evolution of ROA and ROE

As for the bank profitability, there was an increase in the ROE in 2007, marking thus a peak of 20.62%, followed by a slowdown trend until 2017 reaching 9,5%. This increase is explained by an increase of the net result, which broadly stabilized thereafter. Therefore, the gradual increase in equity resulted in an increasingly low ROE. Moreover, the ROA remained more or less stable with a slight decline recorded in

2017 compared to 2006 (0.90% instead of 1.30%). This deceleration is combined with the slight increase in total assets recorded at the Moroccan banking sector (147 billion Moroccan dirhams in 2006 against 175 billion Moroccan dirhams in 2017).

IV. Conclusion

This work aimed to approach the relationship between prudential management and operational management in banking risks, in order to show that banking entities should always refer to the overall management of the banking system in its prudential nature entirety. Also, it was matter of studying the behavior of Moroccan banks in terms of performance having regard to the preventive effort made to meet the standards imposed by the prudential authorities. Thus, it appears from this study that the behavior of banks in terms of risk-taking and the inadequacy of prudential standards are the main causes behind the emergence of crises. Financial innovations have allowed banks to circumvent prudential standards, but also to hold less capital while taking excessive risks. Internal models of banking risk management are based on unrealistic assumptions and actually substantially underestimate the risks. Recommendations and proposals are always made by the Basel Committee to strengthen the prudential framework and to ensure the financial soundness of banks.

The repeated crises and the financial innovation's impact on prudential standards have been behind the implementation of the Basel II and III agreements. These agreements were intended to prevent bank failures by a better match between capital and risks in order to ensure greater banking stability and promote economic growth. These agreements require banks transparency and communication to the public of all information related to their risks. Prudential standards are thus designed to regulate banks and prevent recurrent banking crises.

An evolution of prudential norms tries to address the deficiencies of previous standards. They aim to allow banks to have a greater resilience and so, the implementation of financial stability. However, everything will depend on effective strategies to be adopted by financial intermediaries to meet the requirements of the prudential approach. This brings us to our main research problem concerning the dilemma of banking risk management between the prudential and the operational approaches: although the prudential requirements are clear, the implemented operational strategies are the key to a successful prudential compliance. Therefore, the relevance of these effective and operational strategies is what makes the difference between financial intermediaries as to banking risk management and as to their global performance.

References

[1] T. Chevalier-Farat, « Why do we need banks? » Paris: University of Paris I, 1992.
[2] B. Keizer, « La gestion des risques dans les banques, » Revue d'économie financière, n°27. L'industrie bancaire., p. 348, 1993.
[3] M. Aglietta, « Risque systémique et politique macro prudentielle: une nouvelle responsabilité des banques centrales, » Revue d'économie financière, n° 101. Le risque systémique: Repenser la supervision, pp. 193-203, 2011.
[4] C. Bordes, Banques et risque systémique, Université de Paris I, 1999.
[5] M. Aglietta, « Genèse des banques centrale et légitimité de la monnaie, » Annales: Economies, sociétés, civilisations. 47e année, N.3, 1992.
[6] C. Bialès, L'intermédiation financière, Cours, 2006.
[7] E. Santo, « Crises bancaires et contagion: résultats empiriques., » Banque du Canada, revue du système financier., Décembre 2002.
[8] KBB Etude d'avocats, « Réglementation prudentielle, » 2002.
[9] R. Hennani, « L'évolution des Accords de Bâle: d'une approche microprudentielle à un cadre macroprudentiel., » HEC Montréal, Volume 92, numéro 3, Semptembre 2006.
[10] D. Plihon, Les banques: nouveaux enjeux, nouvelles stratégies, la documentation française, La Documentation Française Paris, 1999.
[11] M. A. Berrada, Les techniques de banques, de crédit et de commerce extérieur au Maroc., Editions SECEA, 2000.