Investigation of the Basel Framework in the Banking Sector of Mauritius

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Banks are one of the tremendous financial needs of any country. The Basel Accords refer to the banking supervision Accords issued by the Basel Committee on Banking Supervision (BCBS). Basel is based on three principal criterions mainly market risks, credit risks and operational risks. The Accord was said to be successful because it obliged the commercial banks in all of G-10 countries to maintain higher capital ratios. Mauritius, a developing country where it is found to have a boom in the financial sector, needed to have a control system like Basel in order to give its bank the opportunity to reduce credit risk weights and at the same time decrease the required regulatory capital. The latter depends also on markets and supervisors to discipline banks. The Bank of Mauritius has issued various guidelines which have been set up by the principles of the BCBS about its implementation in our country. The paper will investigate the pre- and post-implementation of the Basel Framework in a small developing economy and its impact on the banking sectors of the island. Data were collected through a questionnaire from twenty banks in Mauritius. The results obtained suggest that all banks incorporated Basel Standards in their system as it is required by the regulatory requirements and the Bank of Mauritius Act. However, it was observed that smaller banks had encountered difficulties in implementing the framework because of cost implications and human skills which can cause an impact on their profitability. There is a good level of awareness regarding the norms and Mauritius is almost ready to apply Basel III. Although there are some drawbacks, post Basel has improved banking system in Mauritius on several risk parameters and to make provisions on bad advances. Its implementation has brought improvement in government standards, provide for growth, transparency and allow strength for financial stability of banks. Furthermore, it will enable these banks to go and compete globally.

Keywords: Basel Accord, Basel I, Basel II, Basel III, Capital Adequacy Ratio, Basel Committee on Banking Supervision (BCBS).

Introduction

Over the last two decades the banking sector has seen exceptional changes in the banking and financial field worldwide. Mauritius also has created a strong regulatory framework sensibly balanced with a good business environment. One of the reasons that has led to a reliable banking sector is the full support given to international
initiatives, particularly the Basel Accord, to clear money laundering and terrorist financing. In fact, in its recent classification list of the Organisation for Economic Cooperation and Development (OECD), Mauritius has obtained a reputable jurisdiction position. Traditionally, the Basel Committee on Banking Supervision (BCBS) was created to enhance guidelines for regulations (Simpson 2012). It was responsible to make recommendations on best practices at regulatory and supervisory level and issue consultative papers for opinions by market players and central banks. In 2001, there was a consultative document which refers to several concerns expressed and recommendations made by developing markets on previous consultative documents. The consultative paper considers three commonly strengthening pillars of Basel and provides for a comprehensive approach that will bring regulatory and economic capital nearer in line and limit the gap between regulatory requirements and the banking industry’s risk management practices. As regard to the the first pillar, the minimum capital requirements, the paper establishes alternative approaches for calculation of capital requirements to determine credit risk and operational risk. The New Accord requested approaches for quantifying credit risk using the Standardized Approach and Ratings Based (IRB) Approach. The IRB Approach depends on bank’s own quantitative and qualitative test of credit risk and creates the basis for setting capital charges. This approach develops between the foundation approach and the advanced approach. The foundation approach indicates that together banks and supervisors supply inputs in relation to rating whereas advanced approach gives banks the opportunity to use their own valuation at larger pace to set credit rating. The other two pillars are namely supervisory review process and market discipline. The Basel Committee (2000) produced a detailed guidance on disclosures to improve market discipline and in Mauritius, the Basel Committee received solidified responses of banks, particularly, about the cost of implementing the accord. It refers to the additional costs that banks would have to pay due to the Basel proposals and these costs would be maintained only if there considerable benefits. Hence, it is considered that it is more appropriate for regulators to take office of a 2-tier approach to utilize the Accord in the conceived time by large and international banks and also maintain the current system for the small, non-internationally active banks, together with modifications and improvements. This new Accord is a way to ameliorate the strength of the banking system by emphasizing more on the banks’ own internal control system and management and settles incentives in the risk management process of banks for further progress. Nevertheless, due to its complexity the New Accord put important burden on national supervisors and thus may be a problem to resource constraints. Therefore the main aim of the study is to investigate the effect of Basel Framework in the Mauritian context which an analysis of the pre and post impact of Basel in Mauritian Banks, an assessment of the Basel Accord, an investigation of the future of Basel II or the need to migrate to Basel III and an assessment of the impact of the implementation of the Accord among the banks in Mauritius.
Literature Review

Prior to the Basel Accord in 1982, all banks were accounted to hold capital of at least 4% of their deposits whereas after that it was 8% of their risk-weighted assets. At first sight, the main problem was focused on the regulatory framework in terms of international and domestic banks. This situation has led to the creation of the first Basel Capital Accord in 1988. However, there were some difficulties in the Accord which have had a severe impact in the financial system of developing countries and distortions in the international banking sector. As a result, it was decided to amend the Accord from time to time to bring about changes (Ahmed 2007). This has brought the New Basel Capital Accord which ultimately improved bank’s behavior, specially international banks, and reinforced regulations.

However, the Bank of International Settlement (2001) stated that the 1988 Accord has been supplemented a number of times in order to remedy its drawbacks. According to Prakash (2008), many efforts have been made by the BCBS over several years to be able to strengthen the international convergence of supervisory regulations which governs the capital adequacy of international banks. Countries were doing business among the local population and putting low rate of interest thus resulting low risk in order to attract many banks for investment. But this technique was not fair, thus causing harmful consequences. However, many countries nowadays are dealing internationally and this is why the BCBS has taken the decision to form an Accord which was perceived to be a first step so that everyone is treated at a plain field. Basel I was issued on July 15, 1988 (BCBS, 1998) and remains the high-water mark in Basel Framework (Eichengreen 1999). It was initially made up to cover only credit risk and supplied rules for the bank’s credit portfolio (Wagster, 1996). The Accord provides for a set of recommendations on banking regulations towards capital risk, market risk and operational risk where banks were asked to maintain capital against all three types of risks. According to Feid (2003), a charge for market risk was introduced in 1988 and Basel Accord has been successful in various ways. Similarly there has been an amendment in 1996 which provides rules to measure market risk of banks (BCBS, 1997). Burhouse (2003), on the other hand, observed that although the 1988 Accord was created for big and operational institutions at international level, agencies have given full support to coherent application of risk-based capital standards across all organisations of the banking sector irrespective of its structure, size, difficulty or risk-profile. Though it seems to be imperfect, the risk-based capital regulations have improved the credit risk factors considerably over the past domestic capital regime. Evidence on the risk-based capital regulation have shown to have internationally a strengthen force in the banking system. According to Ligon (2003), capital ratios which are valued on balance sheet have grown up (Ligon, 2003). Although Basel have prominent arguments in its favour for banking regulators concerning capital requirements in terms of reducing bankruptcy of banks, it carries some restrictions. Ligon (2003) pointed out that certain limitations of the 1988 Accord have become more evident over time. The Basel I has restrained differentiation of credit risk and paid no importance to the credit risk term-structure, the portfolio diversification effect and the risks associated with currencies in setting up the prospective future counterparty risk. Moreover, as huge banks have grown in size and
have become complicated, bank supervisors has critically reinforce their ability to capital adequacy but forgotten to apply two essential tools employed by themselves namely market discipline and risk measurements. Therefore, Basel I rejected all other risks faced by banks and since it trusted deeply on the historical accounting system, it does not offer a good reference to banks about risks (Hogan & Sharpe, 1990). According to Zaher (2007), it also neglected the soundness factors such as asset quality, management, internal control system in the valuation of capital in relation to credit risk. All these weaknesses have led to the emergence of the New Accord called Basel II to improve agreements of credit risk capital requirements and try to reduce the range of regulatory framework of capital arbitrage. According to Polodoo (2011), it is a way to better manage credit risks, to launch a new capital charge for operational risk and have a more transparent disclosure requirement. According to McDonough (2000), the New Accord was a milestone achievement as supervisors were able to use a common yardstick for assessing banks’ capital adequacy. This has led to better risk evaluation, capital allocation and return on equity. It represents key tool to ensure the smooth running of the financial markets. Harper (2007) even concluded that, the Basel Accord was an important tool to protect banks from financial shocks. Thoraval (2006) also conceded that Basel II is a framework designed to permit a more risk-sensitive and more comprehensive coverage of banking risks. According to Decampts et al. (2002), Basel II has been an effective tool as its foundation consists of three complementary and mutually reinforcing pillars, namely, Minimum Capital Requirements, Supervisory Review Process and Market Discipline. Conversely it can be deducted that in Basel I, banks were lightly taking into account parts of these pillars. As regard to the first pillar, two approaches can be used to value credit risk, namely, the Standardised Approach and the Internal Rating Based Approach (IRB). The former approach is a fixed set to rate risk weights and Basel will rely only on external credit assessment institution to assess risk. The IRB has a huge importance to regulate capital because it allows banks to make a judgment about the capital they need to sustain their risks. Only banks with the capacity to have a good credit risk analysis will be able to apply this approach. The IRB estimates the value of risks of banks in relation to default probability of their clients and other aspects specified by the banks.

Concerning the Supervisory Review, the Basel II aim to encourage the home country banks to develop better methods to be able to measure and manage different risks together ensuring that regulators are following the rules. Harper (2007) categorised it as a referee system. It gives the opportunity to bank supervisors to conduct activities in a honest manner and manage all risks in terms of quality and quantity applying their own equipment. The Annual Report on Banking Supervision (2009) drew attention on the third pillar of Basel II, the market discipline. The latter deals with the disclosure requirements for the market to receive and assess key information about application, risk exposures, risk assessment process and finally capital adequacy of the financial institutions. It tries to improve on the issue of banking transparency. According to Yeh (2005) asserted that Basel II provided a new framework for thinking about capital’s role in banking and calculating capital requirements.

However, Carvalho (2005) debated on the limitations of the New Accord, particularly, its complexity and cost effectiveness. Basel II was established to rectify deficiencies of Basel I, but it appears to be much more difficult. The aspect of financial stability was not
a priority to the 1988 Accord as compared to Basel II which was at the heart of the new agreement. According to Daniela and Dorina (2009) reveals that the limits to Basel II arises due to last international financial crises. Evaluation of internal rating risks method disclose to be so complex that some countries were unable to apply the standards in their respective countries. The capital market were found to be on a continuous innovation, thus making the responsibilities of bank supervisors higher .They also argued that Basel II was more risk sensitive like reputational and strategic risk but not sufficient to be categorised as operational risk. The establishment incurs high cost for banks in terms of internal training and efforts to be provided by smaller banks to raise additional capital. According to Danila (2012) demonstrated the banks’ capital requirements were being influenced by both the utilised approach and bank’s risk profile. She stated that At a banks utilizing standardized approach were at disadvantage compared to the ones employing IRB. Capital requirements are under-estimated in relation to banks' trading books by employing untested and unrealistic VAR models due to Basel II provisions (Atik, 2009). In addition , Georgescu (2012) mentioned that liquidity risk is wrongly treated by Basel II on both financing side and individual asset liquidity. It is obvious that Basel II Agreement had enhanced financial sector in terms of rules and regulations for their security but it is far in reality. The proposed New Accord , Basel III, has shown to be evolutionary (BCBS, 2006) and constitute many important departures from the conventional philosophy of bank capital regulation. Approaches such as IRB and Advanced Measurement Approach, need to be much more prepared and carry some challenges for both supervisors and banks. While focusing on the rules and how to manage risk in Basel II Framework which is widely known, the post Basel II era will belong to banks that effectively mitigate their risks. Amendment to rules and regulations is vital leading to new step i.e., Basel III where its objective is to ensure a safe and stable financial sector in view with Basel II principles. According to Abed (2011) , Basel III is a comprehensive set of reform measures, developed by the Basel Committee on Banking Supervision, to strengthen the regulation, supervision and risk management of the banking sector. It is considered to be part of the Committee’s continuous effort to enhance the banking regulatory framework. According to Nayak (2012), if the proposed prudential guidelines of Basel III is implemented, it could intensify the level of capital and the credit profiles of banks in a country. Similarly, Chabanel (2011) stated that if the implementation of Basel III is done efficiently, it will attest to regulators, customers, and shareholders that bank is recovering well from the global banking crisis of 2008. Sabel and Rozansky (2012) explained the principal changes established in Basel III were in terms of more stability towards capital requirements and disclosures of regulatory capital to gain in more transparency,quality and consistency. The BCBS has proceeded with the elaboration of Basel III during 2011 and design to make further technical adjustments in relation to the new capital standards by 2013 and to the new liquidity standards by 2015. Accordingly, banks need to keep more capital against their assets so as to reduce the size of their balance sheet and being able to leverage them. Concerning capital requirements, banks are suggested to maintain capital ratio amounting to 7% of their risky assets. Tier-I capital that has common equity and perpetual preferred stock will be upgraded from 2% to 4.5% by 2015 and will have to put aside 2.5% during time of future financial stress.
So, any bank that fails to meet the obligations would not be able to pay dividend to its shareholders until it ameliorates its balance sheet (Kollewe and Wearden, 2010). In reason of these regulations, banks in future may be less profitable and requirement of 7% (a minimum amount to hold) will make banks struggle to maintain that somewhat figure to protect themselves against a shock and acts as a cushion. According Perry (2010), Basel III is not meant to be utopist to bring stability in the financial system and prevent financial crisis in future. Nevertheless, with all the measures, these norms may help to have a safe and stable system. Having a higher financial stability will promote economic growth and decrease the risk for a crisis. Chabanel (2011) reported that Basel III is an opportunity as well as a challenge for banks. It can provide a solid foundation for the next developments in the banking sector, and it can ensure that past excesses are avoided. Basel III as an opportunity to banks refers to technology that would be used to deliver the principles. The technology consists of adapting the scale and structure, the processes and the geographic spread of banks against the regulations. With Basel III, banks will be safe on a side but will be expensive on the other side, will bring huge ramifications through the economy and will operate differently in the financial system.

Overview of the Banking Sector in Mauritius

The financial sector of Mauritius is widely ruled by the banking and insurance sector and they are two separate businesses which constitute different concerns to financial stability. Insurance sector acts as an intermediary between firms and household to transfer risks to a party who is more likely to handle such risks. The high interactions between these two factors and financial market have raised the value of insurance sector in financial stability. On the other hand, banks have a vital role in the financial system concerning monetary policy, payment system and in the allocation of savings to investment. Hence, it can lead to systemic risk. One of the most delicate aspects of implementing an agreement at an international stage is the necessity to suit different cultures to various structural models, complexities of public policy and present regulation. In most worldwide jurisdictions, regulators intend to establish the New Accord with a broad varying timelines and use of limited diversifying methodologies. Even if Mauritius does not form part as a member of the BCBS, Bank of Mauritius plans to establish Basel Accord and fully agrees with the points of World Bank but does not take the decision to promptly implement the Accord in Mauritius. According to Bank of Mauritius (2007), Mauritian banking sector was well-organized to set standardized approaches of Basel II in the year ended in parallel run with Basel I. While proceeding with banks to use more sophisticated approaches, Bank of Mauritius is attempting to conform with Basel II principles to the requirements of its banking industry. As regard to the first pillar of the New Accord, Mauritian banks are expected to assume these risks for calculation of their minimum capital requirements. Standardized Approach to credit risk are used by the banks for risk assessment. The assessment is done by an agency named the External Credit Assessment Institutions (ECAIs) which evaluate risk weights on their credit exposures. Qualifications for Standardized Approach shall only be credit assessment for eligible
ECAIs and there are two proposed methods for their recognition defined as direct recognition and indirect recognition. Moreover, Bank of Mauritius imposed to hold 10% of minimum Capital Adequacy Ratio as an instrument to ascertain that bank keeps adequate capital against risks hence assisting interest of depositors and enhancing efficiency and stability of the system. Great improvement has been made by Mauritian banks concerning risk and capital management practices where progress on Basel II project has helped enormously. Incentive of using more advanced approaches will bring safer risk-management standards for the good functioning of financial stability in the country. Similarly, banks in Mauritius have used Basel II in a safe and sound manner and in the meantime had ensured that its banking sector is complying with the rules and regulations of the Banking Committee on Banking Supervision.

Research Methodology

Primary data and secondary data were used to show arguments that compare and contrast opinions of respondents and to meet information needs of this paper. Both open-ended and close-ended questions were used in the questionnaire. The approach for the study was drawn on Mauritian Banks because they are the only institutions to possess Basel principles. All 20 banks found in Mauritius were used to conduct the survey. The questionnaires were personally handed over to the personnel of the banks which were targeted to fill in it. The total response rate was 75%, i.e., 15 out of 20 and process for collection of the questionnaires was picked up after one week or three. The limitation of the survey research is that people are mostly unwilling to talk because of so many reasons. It also affects the conclusions derived from the findings.

Analysis and Findings

Relationship between the Implication of the Implementation of Basel and the Priority Assigned to It in Mauritius
It was found that 73% of the respondents rated high the level of implication of implementing the norms, while 27% at medium level. This indicates that since its establishment, Basel Standards has been valued as a crucial factor for Mauritian economy. 73% of the respondents attributed a high priority to the establishment of the Standards while 27% expressed a medium priority. A Pearson’s Chi-Square test was used for hypothesis 01. No significant relationship was found and hypothesis 01 could not be accepted at 5% level.

Perspectives on Basel Accord
There exist several definitions for the term Basel and hence having same understandings. To be able to have an idea over what people think, some definitions have been set to determine their knowledge and hypothesis 02 has been tested to obtain some opinions mentioned below:
H$_2$: There is a relationship between the levels of agreement of the implementation of Basel among banks.
From the survey findings, we have observed that most respondents either agree or strongly agree over the perspectives of Basel Accord. However, for the aspect of ‘more trouble than advantages’ most banks disagree with this proposition. Based on these findings, we have deduced that there is a relationship between the levels of agreement of implementing Basel in banks.

**Advantages and Disadvantages of Basel Standards**
Implementing Basel has so many advantages internationally and as well locally. From the finding of the survey, the majority were directed to mostly uses of internal models for risk management. Banking sector in Mauritius has widely been enhanced since Basel Standards is in application and risks are mitigated better. It is also a way to make investment in banks more safe.

Hypothesis 03 has been tested to see if there is a relationship between the two factors mentioned below:
H₃: There is an association between the advantages and disadvantages of Basel Standards
This question is an important one as it gives an explanation of the advantages enjoyed by banks so by which they practice the Accord. It also relates drawbacks by which banks have to abide with. It was found that all respondents did have an opinion about the consequences and disadvantages. To implement a standard in any banking sector, it may be difficult for any country. However, in Mauritius, the surveyed banks responded in the following ways:
33% answers that cost for personnel training and for development of information system is very cheap and could be a disadvantage for banks. If banks lacks of personnel, it is obvious that it will bring consequences to implement the standard. This is shown by 21% of the surveyed banks. Moreover, improvement of information technology (17%) is very costly and may affect the implementation of Basel for banks. In the case of high capital requirements which are 29%, it is clear that banks require having an important capital to be able to create and handle the norms.
It can therefore be stated that there is a relationship between the advantages and disadvantages of implementing Basel Standards.

**Degree of Knowledge & Services Proposed to Staff in Regards to Basel**
It is important to have a good knowledge and an understanding about the field you are working. For instance, banks have to do its job by enhancing such knowledge and promote the skills of its staffs so as to perform better for the best interest of banks itself. Based on the findings of the survey, we observed that almost all the banks (70%) have a basic knowledge. Some banks (20%) said that their employees have a solid knowledge amounting while 10% said they have an excellent knowledge.
With regards to services offered, 70% have chosen in-house training as compared to the use of external consultants, group training and seminars. It can be said that almost training is done internally as it costs less, brings a high value to bank. In addition, it is less time consuming for its staff. The following hypothesis has been tested:
H₄: There is a relationship between the level of knowledge of banks’ employees about Basel Accord and the services offered by bank
Based on the test, it was found that there is an association between the level of knowledge and the services offered by banks. For example, if bank employees do not have any knowledge about these norms, banks holds the duty to give training to its staffs for its institution to be effective.

**Relationship between Employees Working in Risk Management Process (RMP) and Their Efficiency**

The spirit of a team with understanding of its staff, the aim of the Accord and adopting the ethics should be constructed in all organizations. The survey shows that RMP departments have mostly between 1 and 5 staff, working in credit risk department (60%), 11 for market risk and 9 for operational risk followed in the range of 6-10 persons, i.e 4 for credit risk, 2 for market risk and 5 for operational risk, 1 response for 11-15 persons and ultimately no department has more than 15 staffs.

Concerning efficiency of employees, 34% said they possess a very good efficiency in regards to its employees working in RMP. Accordingly, 13% state that capacity of its staff to work in this section is satisfactory and 33% is attributed to an excellent level. Banks must be aware that it is important to have an effective and efficient team to be able to work and promote the Standards. More qualified officers are required and banks must increase the level of efficiency higher to mitigate with the norms easier and at ease.

**Association of Existences of Basel Accord Team**

Having a team especially for Basel is a very good idea as it will allow the employees to be well aware about the Standards and to be more knowledgeable. It will give staff the opportunity to improve their skills and understandings. From the survey findings, we observed that for most of the banks, there is a specific team comprising of 60% which have a department for Basel. For those who do not have a specific team, they plan to do so in the very near future. A hypothesis has been formulated. Independent T-test has been used.

**Relationship between the Degree of Knowledge and Its Effect**

A deficiency in the level of knowledge of employees was observed. However, it was observed that it would probably not affect the performance of bank.

**Potential of Banks to Meet the Goals of Basel**

Based on the analysis made, it can be deduced that 93% of the respondents relate that Basel meet the goals of their banks. 7% of the respondents answered by negative because it does not have a specific team and it has staff only in operational risk department. It is realistic that this norm requires meeting the goals of all the banks because it is within the requirements of the Bank of Mauritius.

67% of the respondents gave a high priority to Basel. 30% of surveyed banks administer a medium priority to the implementation and it has also reached the expected goals for the latter. Overall, the majority of the banks (90%) has met its requirements with Basel Standards.
Conclusion and Recommendations

This chapter shows recommendations and conclusions of the research that come up from analysis of the findings. A brief summary of the important results is presented and subject to this, these results are explored and directions about future research are advised. The key conclusions and most pertinent one are set off in order to see if questions have been answered. It is of total evidence that the principal criteria of Basel Accord are to measure risk exposures and to ascertain a well-coordinate regulatory capital. It also has the responsibility to bring a safe and sound banking system and generate a competitive environment at the level of Mauritian banks and internationally. Thus, Basel II was introduced to balance these objectives. It can be said that findings of this study reveals that all banks interviewed are sensible to the vital importance of having an efficient and effective department and a very good knowledge about the standards. Furthermore, it can be said that before Basel banking sector and their behaviors were encountering problems at international level mostly in costs and in their manner to measure risks. But now that there is Basel Standard in force, competitive banks worldwide have a standard playing field. An essential point is that there is a very good practice of Basel II in banks surveyed for this study and they are waiting to implement Basel III by 2015. As it has been said previously, it is obvious that all banks should adopt these norms because it is of the regulatory requirements of central bank and Bank of Mauritius Act. Nevertheless some limitations have been identified at the level of costs and staffs and thus recommendations have been made. Moreover although there are some drawbacks, post Basel has improved banking system in Mauritius on several risk parameters and to make provisions on bad advances. Its implementation brought improvement in government standards, provide for growth, transparency and allow strength for financial stability of banks. Such banks can go global too as its profitability will increase and will be fortified over years, thus unified itself and similarly market disclosures will be of great help for rating agencies and for supervisory authorities. Findings of this study also relate that implementing Basel incur a huge cost in terms of technology and human skills which cause an impact on profitability of small banks because it is quite difficult for Mauritian banks to apply it. As there will be implementation of Basel III, it will help to have an adequate capital in relation to different type of risks like merger and acquisition risk, to better quality of asset of banks and will assist to compensate to the shortcomings of Basel II. Accordingly, Basel Standard is fundamental for banking aspect in Mauritius, acts as the key success of its financial sector and will permit banks to compete globally. It has become compulsory for all banks to adopt Basel II and even thought it carries its difficulties to implement it, from the point of view of banks' officers surveyed the only way to bring an effective banking system and a solid banking law is to adopt Basel Standards.

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