Risk Management Practices by Barbadian Banks

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ABSTRACT

Gone are the days when the banking industry worldwide was considered impregnable. Though the financial crisis originated in the United States of America in late 2007, through contagion, it affected several countries and financial systems across the globe. Indeed, many banks and other financial institutions failed, companies folded, hundreds of thousands lost their jobs, millions of dollars were provided to banks and other companies in the form of rescue packages and some governments defaulted on payments to creditors. The management of risk by banks and other financial institutions has therefore been brought into sharp focus in the current economic climate.

The primary objective of this paper is therefore to examine the various types of risk faced by banks operating in Barbados. In this regard, we seek to identify the types of risk exposures and to ascertain the nature of the management practices and techniques utilized by the banks to deal with these risk exposures. The paper also seeks to determine how the risk management practices have evolved over time.

Information was obtained via an interview survey of Senior Bank personnel in 2011. The survey covered key aspects of risk management including the importance of risk management practices, risk identification, risk monitoring and nature of risk management practices.

The main findings of the paper are: risk managers perceive risk management as critical to their banks' performance; the types of risks causing the greatest exposures are credit risk, operational risk, country/sovereign risk, interest rate risk and market risk; there was a high level of success with current risk management practices and these practices have evolved over time in line with the changing economic environment and regulatory updates. Overall, the findings suggest strongly that in light of the current depressed economic climate, banks operating in Barbados are indeed risk-focused or might we say "risk intelligent".

Key words: Banks, Risk Management, Risk Management Practices

Section 1: INTRODUCTION

Gone are the days when the world's banking industry was considered impregnable. Though the financial crisis originated in the United States of America in the late 2007, through contagion, it affected several countries and financial systems across the globe. Indeed, many banks and other financial institutions failed, companies folded, hundreds of thousands lost their jobs, millions of dollars were provided to banks and other companies in the form of rescue packages and some governments defaulted on payments to creditors. The challenges facing banks have in turn led to diminishing customer confidence [PricewaterhouseCoopers (2010)]. Though the Barbadian banking system has not experienced any failures when compared to other jurisdictions, there is still the need for bank managers and regulators to be ever vigilant. Bank managers should ensure that they have a clear understanding of the various risks affecting their banks and that sound measures are in place to effectively manage these risks. Those responsible for managing risk within banks therefore have to be "risk intelligent". Risk intelligence is defined as the ability to make informed decisions based on past, current and future data [Whipple (2010)].

The literature on risk management by banks in the Caribbean is quite sparse, with the few studies focusing on particular types of risk. For example, Wood (1994) examines lending behaviour and credit risk management of

commercial banks in Barbados and Christie-Veitch (2005) focuses on operational risk management in Trinidad and Tobago, Barbados and Jamaica. The primary objective of this paper is therefore to extend the Caribbean literature by examining the various types of risks faced by banks operating in Barbados. In this regard, we seek to identify the types of risk exposures and to ascertain the nature of the management practices and techniques utilized by banks in Barbados to deal with these risk exposures. The paper also seeks to determine how the risk management techniques have evolved over time.

Information was obtained via an interview survey of Senior Bank personnel in 2011. The survey covered key aspects of risk management in banks including the importance of risk management practices, risk identification, risk monitoring and nature of risk management practices.

The remainder of the paper is arranged in the following sections. Section two presents a review of the literature, with a focus on the empirical literature; while section three examines the methodological and data issues. The empirical results are discussed in section four, and a concluding summary is provided in the final section.

Section 2: LITERATURE REVIEW

2.1 Defining risk

Risk is defined as **"**the possibility that the outcome of an action or event could result in an adverse impact on a bank's earnings or capital, or it could affect a bank's ability to meet its current or future objectives" [State Bank of Pakistan (2003)]. This definition incorporates those provided by Bessis (2002), "risks are uncertainties that could result in adverse variations of profitability or in losses" and Shafiq and Nasr (2009), "risk is anything that causes hindrances in achieving a particular objective".

The adverse impact can be broken down into expected or unexpected losses. Expected losses are losses which a bank can reasonably anticipate; for example, loan losses. Unexpected losses on the other hand are those losses that are not in any way foreseen; for example, the aftermath of a tsunami or losses due to a sudden fall in economic activity. A bank's reserves safeguard it against expected losses whilst capital is used as a cushion against unexpected losses [State Bank of Pakistan (2003)].

First Caribbean International Bank (2010) provides a broader definition of risk which is quite reflective of the importance of risk to a bank. Risk is defined as "any event that could damage the core earnings capacity of the group, increase earnings or cash flow volatility, reduce capital, threaten business reputation or viability, and/or breach regulatory or legal obligations."

Kupper (1999) defines risk as "the volatility of a corporation's market value". This definition is also quite broad as it encompasses any decision that may impact or change the market value of a bank. Risk can be further broken down into systematic and unsystematic risk. Systematic risk is risk associated with the overall market or the economy whilst unsystematic risk refers to risk related to a specific asset or firm.

Implicit in each definition is the theme that risk is detrimental to the financial health of the bank and could threaten its survival. Bank failures tend to have a domino effect throughout the banking system, affecting solvent as well as insolvent banks. Also, because of the nexus between finance and real development, other sectors within the economy are affected when a bank fails. Therefore, the efficient management of risk in the banking industry is vitally important for a sound and stable financial system, and a successful economy. In recognition of the tremendous value of efficient risk management, Saunders and Cornett (2006) assert that managers should devote a significant portion of their time to understanding and managing the various risks faced by their banks. Similarly, the State Bank of Pakistan (2003) note that those entrusted with such responsibility should ensure the following: risk management is clearly understood, the risk exposure limits are clearly set out by the Board of Directors, risk-taking decisions are within the scope set out by management and compensation for risk taken is commensurate, risk-taking decisions are clear, and adequate capital as a buffer is available to take risk.

2.2: MAIN TYPES OF RISK FACED BY BANKS

According to Bessis (2002), the three main types of risk are credit risk, interest rate risk and market risk. However, banks are also exposed to liquidity risk, operational risk, foreign exchange risk, country/sovereign risk, technology risk, off-balance sheet risk and insolvency risk (see Diagram 1).

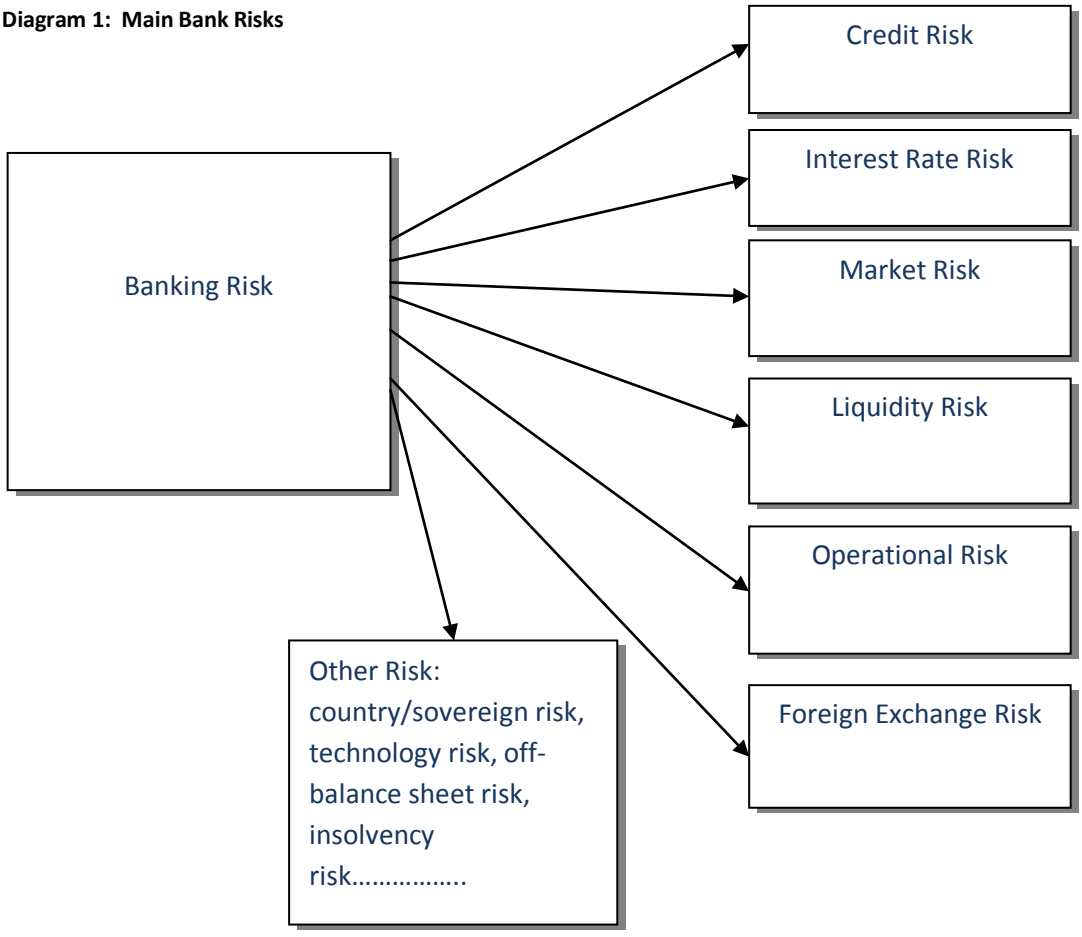
2.2.1 Credit Risk

Hempel and Simonson (1999) define credit risk as "the risk that the interest or principal on loans and securities will not be paid as promised". According to Fabozzi, Modigliani and Jones (2010), credit risk "is the risk that the obligator of a financial instrument held by a financial institution will fail to fulfill its obligation on the due date or any time thereafter."

The First Caribbean International Bank (2010) defines credit risk as "the risk a customer or counterparty will be unable or unwilling to meet a commitment that it has entered into and that the pledged security does not cover the customer's liabilities in the event of a default".

Credit risk can be "firm-specific" or "systematic". The former is the risk of default of the borrowing firm associated with the specific type of projects entered into by the bank. On the other hand systematic credit risk relates to default associated with general economic or macroeconomic factors affecting all borrowers [Saunders and Cornett (2006)]. Credit risk is a major challenge for banks during recessionary times when customers are unable to adequately service their loans.

Diagram 1: Main Bank Risks



2.2.2 Interest Rate Risk

Interest rate risk is defined as the risk that occurs due to the mis-match of the assets and liabilities of a bank's portfolio. This risk occurs because the bank's assets and liabilities are interest rate-driven. Interest rate risk can be broken-down into refinancing and reinvestment risk. Refinancing risk is the risk that the cost of re-borrowing

funds will exceed the returns currently being earned on investment in assets, and reinvestment risk is the risk that the returns on funds will not exceed the cost of the funds [Saunders and Cornett (2006)].

2.2.3 Market Risk

Saunders and Cornett (2006) define market risk as "the risk associated with the uncertainty of a financial institution's earnings on its trading portfolio". This inevitably could be caused by changes in market conditions such as interest rates, market volatility, market liquidity or the price of an asset. Market risk is more prevalent when the assets and liabilities are actively traded in the short-term rather than holding them for long-term investment funding or hedging purposes.

2.2.4 Liquidity Risk

Gup and Kolari (2005) define liquidity risk as "the risk to earnings or capital related to a bank's ability to meet its obligations to depositors and the needs of borrowers by turning assets into cash quickly with minimal loss, being able to borrow funds when needed, and having funds available to execute profitable securities trading activities." Liquidity risk is also defined as "the sudden increase in withdrawals which may require the financial institutions to seek to liquidate its assets in a very short time period" [Saunders and Cornett (2006)]. This sudden surge usually requires sale at less than fair market prices.

Liquidity risk can arise under two circumstances. First, the bank's depositors might seek to cash in their financial claims immediately; in order for the bank to meet this sudden demand it might have to resort to either borrowing funds or selling assets. Second, the risk occurs when banks are suppliers of off-balance sheet loan commitments. If borrowers decide to draw on their loan commitments this must be funded immediately, thereby creating a demand for liquidity.

Liquidity risk is a major risk for the bank portfolio, in that, in extreme cases it could result in bankruptcy.

2.2.5 Operational Risk

Bessis (2002) defines operational risk as the "the risk of direct or indirect loss resulting from inadequate or failed internal processes, people and systems or from external events". First Caribbean International Bank (2010) provides a similar definition when noting that operational risk is "the risk of direct or indirect loss, of damaged reputation, due to deficiencies or errors in the group's internal operations which may be attributable to fraud, human error, processes or technology failure, or due to external events".

2.2.6 Foreign Exchange Risk

It is generally accepted that the foreign exchange market is the largest of all the financial markets. Foreign exchange markets usually involve at least four trading activities: the purchase or sale of foreign currency to allow customers to complete commercial trade transactions, the purchase or sale of foreign currencies that allow customers to take positions in foreign investments, the purchase or sale of foreign currencies for hedging purposes and the purchase or sale of foreign currencies for speculative purposes.

Raghavan (2003) defines foreign exchange risk as "the risk that a bank may experience loss as a result of unfavorable exchange rate movements during a period in which it has an open position, either spot or forward or both, in the same foreign currency". Foreign exchange risk is also defined as "the risk that changes in exchange rates could impact negatively on assets or liabilities denominated in foreign currencies" [Saunders and Cornett (2006)].

2.2.7 Country or Sovereign Risk

Saunders and Cornett (2006) define country/sovereign risk as "the risk of a foreign government's limiting or preventing domestic borrowers in its jurisdiction from repaying the principal and interest on debt owed to external lenders. Such government action might result from foreign exchange shortages and adverse political events. In recent years U.S. banks suffered losses from lending to Asian and Latin American countries, and other LDCs.

2.2.8 Technology Risk

Technology risk and operational risk are closely related. Technology risk is "the risk incurred by a financial institution when technological investments do not produce cost savings anticipated" [Cornett & Saunders

(2006)]. Such risk can result in major losses in the competitive efficiency of a financial institution and ultimately its long-term failure. Conversely, gains from technological investments produce a competitive advantage for the institution over its rivals.

2.2.9 Off-balance Sheet Risk

Off-balance sheet risk is the risk incurred by a financial institution due to activities related to contingent assets and liabilities. An example of an off-balance sheet activity is the issuance of a standby letter of credit guaranteed by insurance companies and banks. Off-balance sheet risk is more of a concern for larger banks.

2.2.10 Insolvency Risk

Insolvency risk is the risk that a financial institution may not have enough capital to offset a sudden decline in the value of its assets relative to its liabilities. It is a consequence or outcome of other risks including interest rate, market, credit, off-balance sheet, technology, foreign exchange, sovereign/country and liquidity risks. The larger the proportion of equity capital to borrowed funds, the better is the financial institution able to withstand insolvency losses. Thus, management of financial institutions and regulators normally place great emphasis on capital adequacy.

2.3 REVIEW OF EMPIRICAL WORK

This section provides a summary of some of the published work on the management of risks by banks in developed and developing economies.

Shafiq and Nasr (2009) examine the risk management practices followed by commercial banks in Pakistan. The results reveal the following: (i) the greatest exposures banks face are credit risk, liquidity risk, interest rate risk, foreign exchange risk and operating risk; (ii) significant differences exist in the application of risk management practices among public sector and local private commercial banks; and (iii) commercial banks' staff basically understand risk management but additional training is required to enhance their expertise in the area.

Hassan (2009) seeks to identify the risks posing the greatest exposure for Islamic banks in Brunei Durussalam and to examine the effectiveness of risk management techniques utilized in these banks. The results of the study reveal that the three major risks affecting the banks are foreign-exchange risk, credit risk and operational risk. Also, Islamic banks are reasonably efficient in managing risk; and risk identification, and risk assessment and analysis are the most influencing variables in risk management practices.

Wood (1994) reviews the lending behaviour and examines credit risk management practices of banks in Barbados. The results of the study are as follows: (i) banks utilized published and internally-generated information in the process of screening applicants; banks do not use interest rates alone to allocate credit but resort to other means like varying the maturity structure of loans, requesting collateral, and utilizing debt covenants and compensating balances in order to offset credit risk; the role of monitoring by banks is essential given the absence of credit rating agencies and lack of an active acquisitions market; monitoring activities of banks are characterized by regular (formal and informal) visiting (and telephone contact) between banks and clients and by periodic reviews of clients' accounts; credit rationing in Barbados can be usefully explained by the Stiglitz-Weiss "equilibrium-rationing model" which emphasizes the influence of imperfect or asymmetric information on bank behaviour.

Christie-Veitch (2005) examines the status of operational risk management in Trinidad, Barbados and Jamaica; assesses its importance relative to the other risks and reviews the practices for managing operational risk by the financial institutions. The findings are analysed based on the assessment of compliance with regard to Basel Core Principles for the management of operational risk. The study reveals a number of findings: (i) the framework necessary to identify, assess, monitor and control operational risk is still not evident, (ii) the management of operational risk is basically limited to implementing and testing internal controls, (iii) operational profile is not currently reviewed and adjusted based on specific strategies, (iv) the plans to handle business disruption are somewhat in place but are not subject to testing or scenario analysis, (v) best practices with regard to operational risk are not finalized or circulated, and (vi) operational risk management methodologies are not being disclosed by banks.

Wenner, Navajas, Trivelli and Tarazona (2007) investigate the management of credit risk by rural financial institutions in eight Latin American countries. The research reveals that the techniques utilized to reduce credit risk are export-based information-intensive credit technologies, diversification strategies (geographical, sectoral and commodity) and portfolio exposure limits (for example, agriculture is less than 40% of total lending). Excessive provisioning is also used to internalize and absorb credit risk. Wenner et al. also reported that few of the institutions are transferring credit risk to third parties and this was a major challenge. The most common instrument used to transfer credit risk is public-funded loan guarantee funds.

Santomero (1997) reviews and evaluates financial risk management systems in a number of North American banks and a few outside of America. He examines both the philosophy and practice of financial risk management. The writer acknowledges that the sophistication of the risk management techniques varies according to the size of the bank. Those at the higher end tend to utilize more advanced and technical risk management techniques. Santomero therefore states that his review encompasses "best practice" as opposed to "average practice".

The main findings are as follows: credit risk techniques need to be standardized not only across borrowers but across institutions as well; credit losses need to be closely monitored but systems are not adequate to track the activity; interest rate risk gap management has improved, however the use of book value accounting should be replaced with market value accounting; simulation currently in use is perceived as rather simple and needs to incorporate dynamic hedging techniques that are used in other fixed income models; despite the fact that VAR (value at risk) is a fantastic tool many banks are still using ad hoc approaches in order to determine foreign exchange and other trading limits; crisis models need to be linked to operational factors; illiquidity risk should be defined and built into the illiquid positions, and off-balance sheet risk should be integrated more into the overall decision making process.

Pagano (2004) examines the rationale for corporate risk-taking and risk management activities, and investigates the motivation for banks engaging in interest rate risk. The sample comprises 241 publicly traded Bank Holding Companies in the United States. The findings reveal that the factors influencing risk management activities of banks are similar to those of non-financial companies. These factors are firm size and financial distress cost. The study also reveals that interest rate volatility has a negative impact on a bank's interest rate risk taking.

Chapelle, Crama, Hubner and Peters (2008) examine the use of the advanced measurement approach (AMA) for the measurement of operational risk for firms within Europe. Two business lines: asset management and retail banking, and two event types: expected losses and unexpected losses of a large financial institution are used for the test basis. The results suggest that there can be substantial savings with the utilization of AMA.

Perignon, Deng and Wang (2008) present an empirical study on the likelihood of Canadian commercial banks overstating their value-at-risk (VAR) estimates. The evidence indicates that there was excess conservatism in the bank's VAR estimates. This was related to various factors: extreme cautiousness and underestimation of the diversification effects when aggregating VAR across business lines and/or risk categories.

Ebnother and Vanini (2007) address the following hypothesis in the context of banks in Switzerland: "The strong autocorrelation between economic cycles demands that we analyze credit portfolio risk in a multi-period setup". They observe that banks usually measure credit risk over a one-year period with the use of VAR (value-at-risk) or ES (expected shortfall). The VAR asks the question "how bad can things get?", while ES asks "if things do get bad what is our expected loss?" [Hull (2007)]. Ebnother and Vanini however contend that the risk horizon should indeed be longer than one year since single-period risk measures cannot capture the overall effects of systematic shocks occurring over several periods. They therefore recommend an alternative risk measure: the time-conditional expected shortfall (TES). This method utilizes the ES but takes the time horizon into consideration.

In summary, from the reviewed studies the following points emerge:

- The major risks affecting banks are credit risk, interest rate risk, operational risk and foreign exchange risk.
- Banks are basically efficient in managing risk; however, additional training is still necessary.
- Operational risk is a major risk but is also quite complex in its measurement.
- The sophistication of the risk management technique used varies according to the size of the bank.
- Macroeconomic factors should be taken into account when seeking to assess credit default.
- Banks which usually venture into non-interest income activities experience higher risk than banks which are basically in the loans market.
- Non-national firms have significant foreign exchange risk exposure; however, through the use of hedging techniques they are able to significantly reduce its impact.
- There is likelihood that banks significantly understate their VAR estimates.

Section 3: METHODOLOGICAL AND DATA ISSUES

The main purpose of the research is to determine the various types of risks faced by banks operating in Barbados. These include the Barbados National Bank, Butterfield Bank, First Caribbean International Bank, RBTT Bank, Royal Bank of Canada and the Bank of Nova Scotia. The research also seeks to determine the extent to which these banks utilize risk management practices and techniques in addressing the risk exposures.

Information was obtained from the banks via the use of a structured questionnaire containing twenty seven (27) questions divided into four sections.***** The questionnaire is an adaptation of the one utilized by Hassan (2009). The first section of the questionnaire contains seven closed-ended questions focusing on "The importance of Risk Management to Banks". The second section, which contains three open-ended and four closed-ended questions, deals with "Risk Identification"; this involves the ranking of risk according to the bank's experience of risk exposure. The third section comprises four closed-ended questions focusing on "Risk Monitoring". The final section contains nine closed-ended questions dealing with "Risk Management Practices". For the open-ended questions banks were asked to explain the current measures in place to manage risk and also indicate the level of success or failure with the risk management practices utilized. For the closed-ended questions, banks were asked to respond based on the five-point Likert Scale. A pilot survey was conducted in order to ascertain if the questionnaire adequately addressed the critical aspects of the research topic. Immediately following the first interview, it resulted in an expansion of one question and another was sub-divided so as to facilitate a more detailed response. The final survey form was then dispatched to the other banks.

*** The questionnaire is available on request**.

Contact was made with all relevant persons within the banks, specifically those directly involved at some level with risk management. Of those selected within the sample, three face to face interviews were conducted with Senior Credit Risk Managers. The other survey forms were forwarded via email and the selected respondents confirmed receipt and provided responses in like manner.

Of the six banks surveyed one declined to respond and another indicated that responses were reflective of policies within two banks, RBTT (Republic Bank of Trinidad and Tobago) and RBC (Royal Bank of Canada), currently rebranded RBC Royal.

Section 4: ANALYSIS OF EMPIRICAL RESULTS

4.1. Summary of results

4.1.1 Risk Presenting the Greatest Exposure.

Tables 1 and 2 summarise the ranking of risk exposures. The results indicate that for the four banks participating in the survey, the order of importance for risk exposure is as follows: credit risk, operational risk, country/sovereign risk, interest rate risk, market risk and liquidity risk.

4.1.2 Risk Identification

Risk identification is very critical in the risk management process. The results indicate that the banks generally do not experience difficulty in identifying and prioritizing their main risk (see Appendix). This important aspect of the risk management process is facilitated to a considerable extent through continuous review and evaluation of the techniques used in managing risk.

4.1.3 Importance of Risk Management Practices

All risk managers recognize the central importance of risk management to the banks' performance (see Appendix). Although the four respondents agreed that effective risk management of is one of the main objectives of the bank, two of them disagreed that the main business of the bank is to manage risk.

Table 1- Risk presenting the greatest exposure

Bank	**Risk 1**	**Risk 2**	**Risk 3**	**Risk 4**	**Risk 5**
1	Credit	Liquidity	Interest Rate	Operational/ Technological	Country/ Sovereign
2	Country/ Sovereign	Operational	Credit	Market	Liquidity
3	Market	Credit	Operational	Technological	Interest rate
4	Credit	Interest rate	Operational	Liquidity	Market

Table 2- Average ranking of bank risk

Risk	Average	Ranking	Respondents
Credit	1.75	1	4
Operational	3	2	4
Country/Sovereign	3	2	2
Interest rate	3.33	3	3
Market	3.33	3	3
Liquidity	3.67	4	3

4.1.4 Risk Management Practices

This section focuses on the adequacy of the institutional arrangements for managing risk; for example, internal processes and documentation, and recruitment policy. The results reveal that there are adequate arrangements in place, with documented procedures to provide guidance to staff and recruitment procedures that normally result in sufficiently skilled personnel being employed (see Appendix). These arrangements are reviewed and updated on an annual basis so as to take into account new risks and their mitigants. The banks were however not very aware of the risk management practices of the other banks.

The respondents also indicated that the recent financial crisis originating within the U.S. had influenced their banks' approach to risk. There has been increased internal monitoring through intensified audit reviews and the amount of information requested by the Central Bank auditors has also increased.

4.1.5 Current measures in place to manage and control risk

The measures employed by the banks operating in Barbados are influenced to some extent by the policies emanating from the Head Offices of the respective banks. These measures can be summarized as follows:

Credit risk: There are established credit processes and policies characterized by credit grading and scoring, and a monitoring system; the credit management process is underpinned by an independent system of credit review by credit conformance teams; judgment, discretion and level of expertise (use of experienced lenders) are very critical; there is constant monitoring of policies, portfolios and trends to maintain credit quality; there is an annual review of client's financial statements and constant contact is maintained with the client; credit risk hubs have been established in various jurisdictions to monitor portfolio trending and delinquency; finally, credit provisions are independently calculated in accordance with International Financial Reporting Standards for statutory reporting and in accordance with the Financial Institutions Act to meet regulatory requirements.

Liquidity risk: Liquidity management within banks is governed by a policy approved by the Board. The implementation of the policy is the responsibility of the Asset and Liabilities Committee (ALCO). The day-to-day management of liquidity is handled by the treasury team; matching principles are utilized; and stress tests and scenario analysis are undertaken in order to evaluate the impact of stresses on the bank's liquidity position with these results being reported to the Board on a quarterly basis and independently reviewed by the market risk monitoring team.

Interest rate risk: The matching principles are applied; loan portfolios are reviewed to assess the capacity to repay; the policy of "locking" interest rates into a particular country's interest is utilized; and fixed mortgage rates are preferred to floating interest rates.

Operational risk: There is currently no single measure to capture all aspects of operational risk. Value at Risk ('VAR'), sensitivity measures and stress testing are utilized. Also, there is a centralized, dedicated risk management team charged with the responsibility of ensuring that the risk measurement methodologies used are appropriate for the risk being taken and that appropriate measurement, monitoring and control procedures are in place.

Country Risk/Sovereign Risk: Specialised personnel are hired to manage country risk; there are functional head office personnel at the regional and local levels; policies and procedures are well documented and set limits in various categories are reviewed at intervals.

Market Risk: There is strict adherence to the policies, guidelines and procedures manual which outlines the risks and controls that are available to mitigate the various risks. These policies are updated annually to take into account new risks and ways of mitigating them.

4.1.6 Risk Monitoring and Analysis

Risk monitoring seeks to ensure that risk management techniques employed are in line with the desired level of risk exposure. The results reveal that effective risk monitoring is prevalent in the banks (see Appendix). Also, the respondents indicated that emphasis is placed on continuous review and evaluation of the techniques used in risk management.

4.1.7 Level of Success or Failure

The banks surveyed recorded high levels of success with the current measures utilized to manage risk. This success was based on the overall performance of the banks, positive accounting bank ratios and the solid reputation of the banks.

4.1.8 How have the measure evolved over the years?

All the banks surveyed reported that the various risk measures have evolved over the years. The reasons stated for these adjustments include changes in ownership, for example, from fully government-owned to privatized entities; improved governance; changes in the regulatory framework established by the Central Bank, for example, the introduction of quarterly reviews and increasing the informational requirements of banks; stricter accounting policies and regulatory requirements; changes in geographic scope and product complexity. Also, more emphasis is now placed on sound rather than developmental business practices, hence, Board of Directors are more focused on managing risk and there are more requirements from the internal audit committees.

4.2 Comparison of results to previous studies

In the previous studies [Ebnother and Vanini (2007), Hassan (2009), and Shafiq and Nasr (2009)], foreign exchange risk was identified among the greatest risk exposures. However, such risk did not figure among the first six risks in our study. Possible reasons for the difference in result are the stability of the Barbados dollar, and relatively low level of participation of Barbadian banks in foreign financial markets and in transactions with foreign customers.

With respect to risk management measures, our study also indicates that some measures traditionally used are employed within Barbadian banks. For example, Value at Risk (VAR), sensitivity measures and stress testing are utilized for the management of operational risk; and credit scoring, grading and monitoring systems are some of the measures used to deal with credit risk. Further, the methods used to manage liquidity risk historically are still quite evident in the Barbadian banks today.

The previous studies revealed that banks in other countries are reasonably efficient in managing risk. Based on the findings of this study, Barbadian banks are also efficient in managing risk.

Section 5: CONCLUSION

The banking industry worldwide can no longer be considered invulnerable. The economic and financial turbulence of the last four years have brought into sharp focus the management of risks by banks. This paper therefore examined this important issue in the context of banks operating in Barbados.

A number of findings emerged from the study. First, bank managers perceive risk management as very important and critical to their banks' overall performance. Second, the main types of risk exposures are credit, operational, country/sovereign, interest rate and market risks. Third, there is a high level of success with the current risk management practices. Fourth, the risk management practices have evolved in line with the changing economic environment and regulatory updates. Finally, some of the approaches traditionally used to manage risks are being utilized by Barbadian banks today. Overall, the findings suggest strongly that banks operating in Barbados are risk-focused or might we say "risk-intelligent".

One limitation of the paper resulted from the fact that the participating bank personnel were more directly involved in the area of credit risk management and, hence, lacked detailed knowledge of the management of other risks. It proved quite challenging to enlist the participation of a more varied cast of risk managers within the banks. The quality of the paper could also have been enhanced through the conduct of more than three face to face interviews with the senior bank managers. This would have facilitated expansion and clarification of some of the responses.

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Appendix

Empirical Results – Summary (closed-ended questions only)

SA	Strongly Agree
A	Agree
NAD	Neither Agree or Disagree
D	Disagree
SD	Strongly Disagree

The Importance of Risk Management Practices	Rate	Freq.	%
1 The effective management of risk is central to your bank's performance	SA	4	100
2 The main business of your bank is to manage risk	D	2	50
	A	2	50
3 Application of risk management techniques reduce costs or expected losses to banks	A	2	50
	SA	2	50
4 Managing risk is important to the bank's performance and success of your bank	A	1	25
	SA	3	75
5 Effective risk management is one of the main objectives of your bank	A	1	25
	SA	3	75
6 There is significant board and senior management involvement in the risk management in your bank	A	2	50
	SA	2	50

7 The notation that risk is everyone's business requires a shift in attitude and requires a deep cultural change	A	3	75
	SA	1	25
Risk Identification			
11 The bank finds it difficult to prioritize its main risk	SD	1	25
	D	2	50
	NAD	1	25
12 It is important for your bank to emphasize continuous review and evaluation of the techniques used in RM	A	1	25
	SA	3	75
13 The bank is aware of the strengths and weaknesses of IRM systems of other banks	NAD	2	50
	A	1	25
	SA	1	25
14 Change in risk are recognized and identified with the bank's rules and responsibilities	A	3	75
	SA	1	25
Risk Monitoring			
15 Monitoring the effectiveness of RM is an integral part of routine management reporting	A	2	50
	SA	2	50
16 The bank's response to risk includes an evaluation of the effectiveness of the existing controls and RM responses	A	3	75
	SA	1	25
17 The bank's response to risk includes action plans in implementing decisions about identified risk	A	3	75
	SA	1	25
18 The level of control is appropriate for the risk it faces	NAD	1	25
	A	3	75
Risk Management Practices			
19 The bank's management regularly reviews the organisation's performance in managing business risk	A	2	50
	SA	2	50
20 The bank's RM procedures and processes are documented and provide guidance to staff about managing risk	A	3	75
	SA	1	25
21 The bank's policy encourages training programs in the area of RM	D	1	25
	A	2	50
	SA	1	25
22 The bank emphasizes the recruitment of highly qualified persons	D	1	25
	A	2	50
	SA	1	25
23 The recent financial crisis originating within the US influenced your approach to risk management	NAD	1	25
	A	2	50
	SA	1	25
24 The application of Basel Accord (3) will improve the efficiency and RM practices in your bank	NAD	1	25
	A	3	75
25 Your bank's capital is adequate if the ratio of capital to total risk adjusted assets is equal to 8%	A	3	75
	SA	1	25
26 Your bank views the supervisory role of the Central Bank of Barbados as critical in RM	NAD	1	25
	A	2	50
	SA	1	25
27 The recent credit crisis in the US has driven your bank to intensify your focus on risk convergence and risk management	D	1	25
	A	2	50
	SA	1	25