A study of Risk Management in the United Arab Emirates Banking Industry.

Dissertation submitted for the degree Master of Science Finance & Banking

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Declaration

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person, nor material which to a substantial extent has been accepted for the award of any other degree or diploma of a university or other institute of higher learning, except where due acknowledgment is made in the text of the report.

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Abstract

Purpose- This research is an attempt to discuss risk management and its importance to the fundamental operation of banks in UAE & whether the Basel II agreement is still relevant in the current financial crisis, and whether it has helped contribute to the severity of the downturn by creating capital shortages at banks in the UAE and in general.

Design/methodology/approach-Questionnaires were distributed to key risk managers in a sample of UAE banks .The questionnaire is composed of three main parts with a total of 42 questions. The first part consists of 12 questions & focuses on obtaining ordinal judgements of the ranked importance and effectiveness of the five main risk management techniques identified by the literature review. The second part consists of 28 questions & was used to answer the 4 research questions; the degree of understanding & implementation of risk management, the most efficient tools and techniques available for the management of risk, the extent to which managers are aware of the risks that are associated with their actions and goals & if Basel II agreement assisted or hindered risk management amongst banks in the UAE. It is based on a five point Likert scale ratings of individual factors. The third section includes two open ended qualitative questions designed to obtain more subjective details from the employees around their specific attitudes towards, and understanding of, risks and risk management, as well as clarify their answers to the quantitative questions.

Findings-– Based on the results of the analysis in this study, it is concluded that the UAE banks are only facing a relatively narrow range of risks, and similarly are not using a particularly diverse range of risk management practices. As such, they focus on the relatively blunt tools of risk mitigation and risk elimination, rather than taking a more advanced strategic approach. As the UAE is currently in something of a transitional period, with Basel II in the process of being implemented, the study should be repeated once implementation is

complete. This will help produce a better understanding of the impact of Basel II on the UAE, as well as demonstrating how the implementation of the Basel II agreement has changed risk management practices in general

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CHAPTER ONE

Introduction

1.1.Introduction

This research is an attempt to discuss risk management and its importance to the fundamental operation of banks in UAE & whether the Basel II agreement is still relevant in the current financial crisis, and whether it has helped contribute to the severity of the downturn by creating capital shortages at banks in the UAE and in general proposes to examine different type of risk that UAE banks are facing. This research also examines different risk management practices and techniques dealt within banks in UAE.

1.2.Background to the Research

This study discusses risk management and its importance to the primary operation of banks. As banks make decisions to borrow and lend money, any operational risk they face is also a financial risk. As such, they need to be aware of the different types of risk that they face, and how these can be managed and avoided, as well as the importance of the Basel II agreement in helping to manage these risks. Indeed, a study by Tschoegl (2003) indicated that many of the financial crises that emerged in the mid 1990s, including the Barings Bank, Daiwa Bank and Sumitomo Corp failures, were management failures, and were not primarily due to misfortune, errors, complexity or environmental factors. This implies that the majority of risks faced by the banking industry are systematic, and are a result of the structure of trading and of human nature. As such, any attempt at risk management needs to consider this, and ensure that the human factor is actively controlled and managed. However, risk management systems also need to ensure that they take account of the various environmental factors and uncertainties which can affect the human decision making process, and ensure that these are acknowledged and addressed in full.

Within the context of the UAE, this means looking at the various risks that banks based in the UAE banks are facing, including domestic risks from the economy in the UAE and international risks from the global economy and factors such as the credit crunch.

1.3 Research Aim and Research Questions

The main aim of this research is to examine the different types of risk that UAE banks are facing in the current climate, and to examine the diverse risk management practices and techniques that banks are using to deal with said risks.

As part of this, the following research questions were investigated:

1. To what extent are the management teams of banks in the UAE understanding and implementing risk management?
2. Which are the most efficient tools and techniques available for the management of risk?
3. Are banks in the UAE aware of the risks that are associated with their actions and goals?
4. Has the Basel II agreement assisted or hindered risk management amongst banks in the UAE?

1.4 Scope of the Research

When addressing the research questions, it was necessary to use different methods to answer them adequately. When determining to what extent the management teams of banks in the UAE understanding and implementing risk management it was necessary to use a literature review and analysis of the Basel II agreement to determine the potential definitions for the meaning of risk management, and then use the questionnaire to determine the extent to which managers in UAE Banks understand the various potential definitions of risk. It was also necessary to review how the Basel II agreement has affected risk management at banks in the UAE. In terms of determining the most efficient technique used in risk management, it was necessary to accept that this question cannot be answered decisively due to the wide

ranging nature of risk. As such, it was preferable to investigate some of the main types of risk and how they are overcome and thus define the characteristics of an ideal risk management system. Finally, determining whether UAE Banks are aware of the risks associated with their endeavours and goals was done through the questionnaire. Unfortunately, this may be subject to response bias, as if they are not aware of the risks then said risks may not immediately be apparent, and hence this aspect was investigated further through the literature review. Similarly, the fourth question was subject to response bias, as managers may view the Basel II agreement as an additional source of complication, whilst not recognising any risk management benefits it may offer.

1.5 Outline of the dissertation

The outline of this dissertation is as follows. Firstly, a detailed and comprehensive review of the literature around risk management and banking in the UAE, as well an investigation of any overlap between these areas in the literature. This was used to frame the investigation and ensure that the primary research was both accurate and relevant to the subject area. Following this review, the detailed methodology for the primary research was discussed, including the research philosophy; research paradigm; sampling method; and methods of data analysis. This methodology primarily focussed on a questionnaire for risk managers working at banks in the UAE. This questionnaire is detailed in the appendix of the study. These results were analysed using qualitative and quantitative methodologies where appropriate, and graphs and charts were used where they were deemed useful. Finally, the results of the primary research were discussed in the context of the secondary research, and this discussion was used to shape the answers to the research questions and general conclusions about the nature of risk management in the banking industry in the UAE.

1.6.Conclusion

The primary focus of the study was on the internal risk management practices of the banks in the UAE, and how they ensure that their managers and employees are identifying and addressing any environmental risks, whilst also not creating any risks themselves either through their actions or through their inactions. A critical part of this was to understand the role of the Basel II accords in ensuring that banks are following prudent risk management practices and maintaining adequate levels of capital to ensure that they can survive any financial risks that may not be adequately mitigated by the actions of employees. As part of this, it was also necessary to explore whether the Basel II agreement was still relevant in the current financial crisis.

CHAPTER 2

Literature review

2.1 Introduction

When determining whether the Management of UAE Banks understand the meaning of risk management, it is necessary to cover different risk management techniques & strategies of risk management in literature review to determine potential definitions for the meaning of risk management In addition, different tools & techniques identified by the literature review are covered including value at risk analysis (Leong, 1996), hedging (Abraham, 2008), diversification (Oldfield and Santomero, 1997), and risk mitigation (Carey, 2001). The literature makes persuasive arguments for all of these tools, and their integration into a holistic risk management strategy.

2.2 The nature of risk management in banks

Risk management plays a very significant in the operation of financial institutions, and especially for banks where their operational risks are also often financial risks (Carey, 2001). Indeed, Carey's (2001) study demonstrated that the various Turnbull ideas are required to effectively manage the risks that banks face. Indeed, with banks facing so many different risks on a regular basis, the Turnbull approach argues that banks should focus on risk management, as risk elimination is almost impossible. As such, risks and risk management should be prioritised and controlled through the use of an internal control system designed to reduce the level of exposure to risks that banks face, and the potential negative consequences of any risk.

However, there is some conflict in the literature around the nature of the risks faced by banks. This is seen in the two viewpoints around competition: "competition fragility" and "competition stability". The first of these claims that higher levels of bank competition erodes market power, which decreases profit margins and firm values, hence encouraging risk taking to maintain margins. The alternative "competition-stability" view holds that higher levels of

market power amongst banks lead to them exploiting their market power to charge higher interest rates to loan customers. This increases risk, as it makes it harder to repay loans, and leads to more significant moral hazard and adverse selection problems (Berger et al, 2009). However, these two apparently opposing strands of literature can be reconciled through greater risk management, where the overall risk levels faced by banks can be mitigated through factors such as increasing equity capital. Indeed, the results of Berger et al's (2009) study indicates that banks with a higher degree of market power act to reduce their risk exposure through proactive risk management to help offset their loan portfolio risk.

However, it is important to acknowledge that there are several other sources of risk which exist outside of the control of banks. In particular, Abraham (2008) argues that the fractional reserve system acts as a source of instability to most commercial and investment banks. This is because the main purpose of investment banks is to ensure the efficiency operation of financial markets and hence the efficient allocation of risk. However, the fractional reserve system allows commercial banks to transact in securities dominated by investment banks, causing significant instability in the global market regardless of the risk management efforts of any given bank. Similarly, many banks operating in specific areas, such as the Islamic banks that exist in many nations, often face different risk patterns to conventional banks, as well as differences in the level of the risks that they face (Ariffin, 2009). This is particularly relevant in the context of this study, with many banks in the UAE likely to have some level of involvement with Islamic finance.

Finally, another critical factor influencing the risk management practices of banks is the competing influences of individual and organisational judgements of the risks faced by banks. In particular, whilst the majority of risks faced by a bank are organisational, the assessments are generally all carried out by individual decision makers (Carroll, 1998). As such, it is important to understand whether decision makers in organisations are more

concerned with their own biases or with wider organisational considerations when conducting risk assessments. This is particularly relevant in the banking sector, where Carroll (1998) found that bankers tended to limit their perceptions of the risk associated with lending to new customers and overestimate the risks associated with lending to their existing customers, due to the bonuses they received for acquiring new customers.

2.3 Risk Management and Value at Risk

Value at risk analysis is relevant to any consideration of risk management and assessment, as it is a risk quantification tool with a long history of use in trading risks (Leong, 1996). Indeed, more recently it has been used to evaluate the levels of interest rate risk and credit risk that banks carry on their bank balance sheets, making it a critical part of any risk management strategy. When applied to a bank as a whole, value at risk represents a more rigorous way of examining the volatility of said bank's economic value of equity; however such an approach is not always beneficial to the bank. This is because stress tests of value at risk measures include simulations where several assumptions are required. As such, there is no standard way to carry out value at risk analysis or stress test said analysis (Leong, 1996). This means that, much like most risk management practices, the bank is forced to rely on assumptions which may not be valid, and these assumptions themselves can be a source of risk.

Indeed, even statistically derived measures of value at risk are based on three different approaches, with each method producing a different resulting measurement of the value at risk, with different advantages and disadvantages. Historical value at risk is based on comparing the actual volatility of sources of risk to the historical sensitivity of said sources. This effectively relies on effective choice of time horizon, as well as the past providing an adequate estimate of the future. In contrast, analytical value at risk relies on analysing the variables which can influence the value and risk of a given instrument, such as interest rates,

default risk, and foreign exchange rates. Whilst this method is easy to carry out, it is very vulnerable to the validity of the assumptions, and does not always accurately judge the risk of unlikely events. Finally, Monte Carlo simulation offers the most accuracy, by modelling the potential risks and value changes over a very large number of possible scenarios, and determining what the most likely value at risk is for said scenarios. Whilst this approach is best for capturing factors such as option risk, it is very computationally and time intensive (Lang and Nayda, 2008).

The importance of the concept of value at risk is demonstrated by the fact that the Basel Committee on Banking Supervision has included a regulatory capital charge for operational risk and value at risk. Ebnöther (2003) argues that whilst the level of operational risk can be measured quite easily for a single production unit of a bank, where the workflows are well defined and relatively unambiguous, this is not necessarily the case for the bank as a whole. Indeed, only a small share of all bank workflows will tend to contribute significantly to the total value at risk of the bank as a whole. As such, value at risk analysis, and its effective calculation and robustness under stress testing is of importance in determining the correct capital charge to apply as well as distinguishing the various features of quality and risk management respectively (Ebnöther, 2003).

However, the Economist (2004) argues that the bottom line is that whilst value at risk is a useful tool, it will never fully describe the total extent of a bank's risk exposure. As such, value at risk is best defined as being a good measure of risk under normal conditions, but an inaccurate way to judge risk under abnormal conditions. In particular value at risk, along with many other risk management strategies, is shown to be near worthless when risks cause markets to move significantly, making banks' assumptions about the diversity and stability of their portfolios inaccurate. This implies that many operational risk management models are of the least use when they are in greatest demand (Economist, 2004).

2.4 Risk Mitigation Strategies

Risk mitigation strategies have to be strongly linked to corporate governance, which is the collective word for the systems and processes that an organisation uses to protect the various interests of its stakeholders. All of an organisation's stakeholders have a common interest: the growth and continued success of the business, and hence most organisations recognise that the various interests of stakeholders must be addressed to enable a business to prosper (Bowling and Rieger, 2005). One of the key interests is the mitigation of risks that have been identified as priority threats to the organisation's wellbeing. Oldfield and Santomero (1997) define three risk mitigation strategies: simple business practices aimed at eliminating risks; the transfer of risk to other participants better able to bear it; and the active management of risks. As discussed above, the financial sector needs to focus on actively managing risks, through their balance sheets and other financial products (Oldfield and Santomero, 1997).

Through an analysis of a sample of financial institutions, Allen and Bali (2007) estimated the various catastrophic and operational risk measures undertaken over a thirty year period. Their analysis indicated that both the catastrophic and operational risk measures had strong cyclical components, with around 20% of the returns from financial institutions representing compensation for these cyclical operational risks. However, at the same time depository institutions such as banks were exposed to operational risk levels that made up almost 40% of the total equity risk premium. Indeed, the critical operational risk events were found to often cause large and unexpected catastrophic losses, as they often coincided with market risk events. As such, operational risk can be seen to be a more important factor for mitigation that the combination of market risk and credit risk (Allen and Bali, 2007).

In spite of this, there is still evidence that credit risk poses a significant risk to bank's continued operations. In particular, Lang and Nayda (2008) examined how various credit

segmentation strategies could aid in the prevention of credit card default, thus assisting banks in achieving better risk mitigation and hence higher returns on capital. Evidence from this study indicated that using fully updated information on the financial histories of consumers would make it possible for banks to mitigate much of the credit risk, and hence almost eliminate the need to compensate for higher risks and loan seasoning (Lang and Nayda, 2008).

Another aspect of risk mitigation is the need to understand how internal risk rating systems in large banks are implemented, and if they can produce reliable estimates of said banks' portfolio credit risk. Jacobson et al (2006) carried out such a study and found that there were substantial differences between the loss distributions of two different banks, in spite of said banks possessing equal regulatory risk profiles. The variation in these figures was found to be due to different levels of portfolio credit risk, with the size of the portfolio accounting for around 40% of the tail risk faced by each bank. This implies that a critical part of risk mitigation is the need to design and implement accurate and reliable rating systems that incorporate the different credit loss distributions and hence the required capital structures. However, the evidence of differences between the risk mitigation strategies of lenders with similar regulatory risk profiles indicates that there are some differentiated market equilibria which are more complex than could be assumed, implying that different risk mitigation strategies are required for individual banks (Jacobson et al, 2006).

2.5 Case Studies of Risk Management in banks

Al- Tamimi (2007) examined the scale of risk management techniques used by banks in the UAE to manage different types of risk. This study focused on four different types of risk identifications: inspection by the bank risk manager; audits or physical inspection; financial statement analysis; and risk surveys. The study was based on both primary and secondary data, with a questionnaire used as a source of primary data. The questionnaire

covered six aspects of risk: understanding risk and risk management; risk identification; risk assessment and analysis; risk management practices; risk monitoring and credit risk analysis. This study revealed that UAE banks were efficient in credit risk management but there were significant differences between UAE banks and foreign banks regarding risk management.

Another useful case study comes from Hassan (2009) who examined the degree to which some Islamic banks in Brunei Darussalam were able to use formal risk management practices to address different types of risk. This study covered a similar six aspects of risk management to those examined by Al-Tamimi (2007), as well as the specific methods of risk identification and the types of risk facing the sample banks. This study indicated that the main types of risk facing the banks in Brunei Darussalam were foreign-exchange risk, credit risk, and operating risk. Whilst these results will not directly translate to the UAE, the methodology is sound and has significant relevance. In addition, the results of Hassan's (2009) study were useful for considering the Islamic banking system in the UAE as well as the conventional banking system.

2.6 Regulation of banking risk

The arguments around regulation of banking risk must be seen in two contexts. The first is the overarching view of regulation that it should aim to increase competition to maximise consumer welfare. However, the second context is the competition fragility theory discussed above, which holds that increases in competition lead to greater levels of financial risk as banks seek to maximise their profits. Indeed, the Economist (2009) argues that the expansion of operations and the increase in competition which occurred in the first part of the 21st century played a key role in banks assuming far greater levels of financial risk, and hence contributed to the credit crunch. As such, further efforts to use regulation to increase the degree of competition in banking need to be accompanied by stricter regulations regarding

the levels of risk that banks may assume, as well as their capital requirements (Economist, 2009).

Indeed, as the nature of regulation has changed over the past few years, so too has the concept of compliance. Haynes (2007) argues that banking compliance can no longer be seen as simply ensuring that the set of rules provided by regulators are met, and that the appropriate forms have been completed to show that is true. In contrast, compliance has now evolved to embrace risk management, and focuses on ascertaining the regulatory risks facing a bank and ensuring that they are managed. For example, the FSA rules on financial regulation include significant content which, combined with the guidance notes and regulatory structure, clearly demonstrate to banks how they should be viewing and managing the risks they face. Such regulatory approaches have succeeded in increasingly requiring banks to be more careful and precise when considering the risks they face and how to manage them. However, it is important to note that most regulatory frameworks do not always consider the various internal departments within the bank that can impact on the bank's interpretation of the regulations, as well as the nature of compliance risk analysis itself. For example, the relationship between the compliance department and other departments, as well as external agents, can affect how banks both interpret and respond to regulatory movements and systems (Haynes, 2007).

Such issues can be seen in Lee's (2005) analysis of the Korean banking industry, and managerial ownership can be affected by the regulatory regimes within the banking industry, through the framework of the banks' moral hazard. This study indicated that managers of the banks with higher levels of moral hazard incentives tended to be more likely to align their interests with those of shareholders, by increasing levels of managerial ownership. This implies that banks where the regulatory regime creates higher levels of moral hazard should be encouraged to place more ownership risk on the managers, helping to counteract said

hazard and increase the managers' stake in any risks undertaken. However, this assumes that the managers of the banks are able to effectively judge the levels of risk that the banks face and the risk – reward trade off. In contrast, Lee (2005) found that managers with an ownership stake took more risks in search of rewards, but these increased risks did not boost the performance of the bank. This implies that regulators need to be more active in managing the risk profiles of banks, and should not assume that tying manager's financial rewards and risks to the risks taken by the bank will result in improved risk management and profitability. Indeed, there is an argument that the increase in the levels of insider holdings required to address the agency risk faced by the banks should actually be associated with stronger regulation and monitoring of the risk taking behaviour of said banks.

Indeed, McIlroy (2008) argues that any future regulatory responses to the credit crunch and subprime crisis need to be guided by the fundamental view that bank regulation exists primarily to reduce or remove the adverse consequences resulting from banks taking excessive risks. As such, this indicates that effective regulation of risks and risk management should aim to reduce the risks of moral hazard; increase the transparency of the risks that banks face; and reduce the pro-cyclicality of regulatory capital. This can be achieved by requiring banks to retain a certain proportion of the loans they originate, rather than selling all the risks on, as well as insisting that all details and risks of traded financial products are made completely transparent (McIlroy, 2008).

2.7 The Basel II agreement and risk management in banks

The Basel II agreement was intended to aggressively improve the requirements of Basel I, by capitalising on the advances that rapidly spread through the financial industry since the first Basel agreement (Das, 2007). A significant part of this improvement was the requirement for banks to comply with various qualification requirements intended to reduce levels of operation and governance risk. These improvements went beyond the traditional

form filling method of compliance, and towards the creation of an increased culture of risk mitigation, combined with the use of a variety of models and the creation of high levels of transparency. As part of this, much responsibility was devolved to banking supervisors, who were advised to ensure that underlying assets were soundly underwritten as well providing both incentives and consequences intended to ensure sound risk management practices (McLaughin, 2008). A further aspect of successful Basel II implementation was the need to banks to be more effective at tracking and updating the risk ratings that banks assigned to specific borrowers, to ensure continuous risk assessment and management (Paletta, 2004).

These changes to banking regulation were heralded as a highly positive step forward, with Wellink (2008) claiming that they will help banks prepare better for challenging and extreme market conditions. This is primarily because the agreement sets the correct incentives and consequences to discourage risk taking, with the minimum capital requirements being both highly risk sensitive and able to capture all different types of risk. As such, they helped to encourage sound risk management practices, as well as enhancing the overall level of market discipline. However, Chatterjee's (2007) analysis of the agreement indicates that, in spite of the potential benefits, it has actually created some negative consequences, specifically increasing the risk profile of the banking industry as a whole. In particular, the peer group comparisons of the risk profiles of the banks will not represent accurate comparisons of like with like as different banks will tend to employ different models to estimate their risk profiles (Chatterjee, 2007).

Further to this, there has been significant criticism levelled at the capital rules involved in the Basel II agreement. Fournier et al (2008) argue that the capital adequacy rules will actually tend to exacerbate market cycles, thus encouraging economic boom and bust. This is because in a rising market profits will rapidly boost regulatory capital encouraging significant additional lending, whilst in a falling market asset write downs will reduce

regulatory capital creating a shrinking cycle of credit. As such, Fournier et al (2008) argued that the Basel committee should also impose leverage ratio restrictions to support more risk sensitive capital adequacy requirements in order to create fully effective regulation. Another major criticism is that Basel II has created significant incentives for the migration of risk from banks to non regulated institutions such as hedge funds. This helped contribute to the credit crunch liquidity crisis by giving hedge fund much more capital with much higher levels of moral hazard (Wood, 2007). Wood (2007) also notes that the agreement has been criticised as it results in banks making too much effort to remain compliant, and hence distracting banks from true risk management practices.

In addition, as well as the problems with the principles and requirements of the agreement, Herring (2007) argues that many banks have encountered significant problems when attempting to implement Basel II due to the structure of the approach. This is for various reasons, one of which is because the agreement has failed to consider the competitive inequities that exist within several developed banking markets. This has led to lower and more variable capital charges than were originally expected for many banks, reducing the impact of the agreement. Finally, some banks have expressed a preference for the simpler, Standardised Approach, whilst other have followed the Advanced Internal Ratings Approach, weakening the coherence of the agreement and hence its effectiveness. This has led to the argument that it could have been possible to achieve equivalent or greater improvements to risk management regulation whilst incurring lower compliance costs and reduced uncertainty about the impact on overall financial stability (Herring, 2007).

In addition, Das (2007) has identified several correlation issues that have arisen during the course of implementing the Basel II agreement. These include the fact that when regulators fix asset value correlations without a specifying business unit granularity they can increase overall franchise risk. In addition, the loss distributions for credit risk tend to be

more sensitive to these correlation assumptions that the market risk distributions, potentially causing large errors in capital requirements. This is arguably a consequence of the fact that the agreement does not recognise that credit losses can depend on four different correlations, and not just one. Other issues occur in the regulatory analysis of the tail risk, as well as distortions from the single year value at risk horizon due to pro-cyclicality. This implies that the Basel II agreement leaves several risks unattended, and these must be addressed by the bank's internal risk management approaches (Das, 2007).

Some of these issues have been identified and addressed already by the Basel Committee on Banking Supervision, which recently published a document on incremental risk charges (Sawyer, 2009). This paper was driven by the global financial crisis, and the inability of the existing agreement to control or prevent it. As such, many of the proposals from the document looked to improving risk management practices in banking, as well as addressing the risk concentration and securitisation issues that had been identified. The paper also criticised the previous banking risk management practices and bank governance, indicating that the Committee may soon be looking to regulate these as well (Sawyer, 2009).

As discussed above, one of the criticisms levelled at the Basel II agreement by Das (2007) and others is that the one year value at risk horizon is subject to significant pro cyclicality distortions. A recent study by Sjölander (2009) demonstrated that these value at risk predictions will actually be more accurate when estimation periods of less than one year are used, which is claimed to be because relevant information is outdated and discarded fairly quickly by the market. This implies that the one year requirement is likely a source of market distortions, and could be discarded without any increased risk of financial instability (Sjölander, 2009).

Finally, it is important to consider how the Basel II agreement relates to Islamic banking, which has proved itself to be a viable alternative to conventional banking,

particularly in the Middle East. One of the key issues by Islamic banks looking to comply with the Basel II agreement is the need to comply with Pillar 1: the capital adequacy requirements. These were intended to capture different types of risks that conventional banks face, and hence often fail to address the specific risks faced by Islamic banks. Indeed, a study by Ariss and Sarieddine (2007) identified significant issues related to the specific risks that have arisen from the activities of Islamic financial institutions, which are largely ignored by Basel II and other international regulations. As such, there are several challenges that the Basel Committee and other bodies will need to overcome to address the various types of risk that are unique to Islamic banking and financial institutions (Ariss and Sarieddine, 2007).

2.8 Conclusion

To conclude, five main risk management techniques were identified by the literature review; eliminating risks (Carey, 2001), using hedging to control risk (Abraham, 2008), minimising the potential negative impact of any risks (Leong,1996), transferring risks to partners or clients (Oldfield and Santomero, 1997), diversifying operations to reduce the impact of any single risk (Lang and Nayda, 2008). These risk management techniques were tested as questionnaire were designed & distributed in which the first part consisted of 12 questions which focussed on obtaining ordinal judgements of the ranked importance & effectiveness of the five main risk management techniques identified by the literature review.

CHAPTER 3

Research Methodology

3.1 Introduction

In order to examine risk management practices and its importance to the fundamental operation of banks in UAE, the primary data generated from a series of questionnaires, was distributed to key risk managers in a sample of UAE banks .These questionnaires looked to understand the nature of risk management in the banking sector in the UAE, whilst answering all of the research questions in the context of the literature review. As such, this chapter represented the survey part of the information .This provides significant breadth to the study, allowing numerous factors to be considered and linked to the risk management practices.

3.2 Data Collection

Questionnaires were distributed to 34 risk managers in different banks in UAE, mostly local banks over a period of 3 months (July-September 2009). The questions stated in the questionnaire can be found in the appendix and full details are presented in the next chapter. Of the 34 risk managers whom the questionnaires where distributed, only 20 respondents returned completed filled questionnaires yielding a response rate of 59%.

The questionnaire is composed of three main parts with a total of 42 questions. The first part consists of 12 questions & focuses on obtaining ordinal judgements of the ranked importance and effectiveness of the five main risk management techniques identified by the literature review. This part looked at the goals of the risk management process and where the main risks and issues arise, as well as how the Basel II agreement has impacted on risk management in the banks and the extent it has either helped or hindered.

The second part consists of 28 questions & is used to answer the 4 research questions. It focused on understanding the degree to which bank staff in the UAE understand the nature of risk, and the attitude that they take towards risks and risk management. As such, this section was not based on ordinal judgements, but rather on five point Likert scale ratings of individual factors. The respondents were asked to rank on a scale of 1-5 (where 1 indicates

"Strongly Disagree" and 5 indicates "Strongly Agree") the extent to which they agree with statements given, relating to the degree of their understanding & implementation of risk management, the most efficient tools and techniques available for the management of risk, the extent to which they are aware of the risks that are associated with their actions and goals and if Basel II agreement assisted or hindered risk management amongst banks in the UAE.

The third section includes two open ended qualitative questions designed to obtain more details from the employees around their specific attitudes towards, and understanding of risks and risk management, as well as clarify their answers to the quantitative questions. This assisted in the triangulation of the data by producing some data on the bank's risk management practices and some subjective data on the employees' attitude to risks and risk management.

In addition, the collection of data from two distinct sources, one internal and one external to the banks in consistency with research literature, allows for more accurate and independent triangulation of the results and analysis of the factors underlying them. This helped facilitate the use of both qualitative and quantitative analysis, as discussed above, in order to further increase the value and academic impact of this research. However, given that the concept of risk management is not one which can be easily quantified, or numerically measured, the quantitative analysis required the use of descriptive statistics. This involved the application of statistical techniques to data with no obvious statistical value, in order to produce more relevant quantitative data which was easier to analyse and represent. Such techniques were used as and when they were relevant within the research.

3.3 Research Paradigm

Saunders et al (2007) states that the main approaches used to gather data to answer research questions are various kinds of surveys, case studies and action research. Of these, action research involves researchers actively working with practitioners to investigate a specific issue or problem, and to come up with real and workable solutions. Whilst this highly involved research methodology allows researchers to probe a problem in much greater depth than through a survey or a case study, it can lead to the researcher developing too narrow a focus. In addition, should a researcher become too involved with their research target, they may find their conclusions become biased to reflect the views of said target. In contrast, surveys tend to be most often used for descriptive and exploratory research, enabling further research directions and recommendations to be created. In addition, surveys allow researchers to collect significant amounts of both qualitative and quantitative data, thus supporting a broad range of qualitative and quantitative analysis techniques. However, this broad reach is undermined by the fact that surveys often fail to explore topics in much depth, and may not reveal the roots causes of the things they observe (Saunders et al, 2007).

Case studies tend to have a more balanced approach to research, combining both depth and breadth. This is because whilst they focus on carrying out detailed research on a specific phenomenon or organisation, this research is carried out at arm's length, which prevents the researcher from developing too narrow a view. As such, case studies allow the researcher to maintain a broad perspective, albeit by sacrificing some of their depth and not always being able to access the desired amount of data (Saunders et al, 2007). As such, because this work is attempting to analyse a fairly general phenomenon, that is risk management in the banking industry in the UAE, a fairly broad research perspective should be taken. As such, this study used a combination of surveys and case studies, to ensure that

the maximum breadth is obtained, whilst also giving the research a significant degree of depth and academic rigour.

3.4 Sampling method.

Once the data was collected, it was analysed in a number of ways. Grounded theory is one method of observing and categorising data, the other two being ethnography and experimentation. Grounded theory involves observing factors, and attempting to integrate them in one or more theoretical perspectives, in an attempt to explain them without the direct involvement or consideration of the actors in any given situation In contrast, ethnography involves a more inductive approach, by looking at the observed phenomena, discussing which factors have acted to cause it, and then deciding what the key factors and behaviours are which cause the phenomena. As such, in contrast to grounded theory, this approach does not involve that objective determination of factors and theoretical models which could be affecting any phenomenon; instead it focuses on how the actors and factors are having a qualitative affect on a phenomenon, through their perceptions of any causal factors (Saunders et al, 2007).

Finally, experimentation is quite similar to the grounded theory approach. However, whilst grounded theory focuses on examining existing scenarios, experimentation involves actively setting up new scenarios and then observing how said scenarios unfold relative to theoretical predictions. As such, experimentation allows researchers to control a great number of the non causative external factors, which can have confusing influences on naturally observed outcomes, thus making it easier to analyse the impact of specific factors. Unfortunately, it has been argued that this level of control tends to create an unrealistic environment, where the behaviour of individuals does not correspond to their actual behaviour in a non controlled environment (Saunders et al, 2007). For the purposes of this research, given the lack of coherent theoretical arguments around the nature of risk

management, an ethnographic approach was used to determine what factors are driving the management of risk in the UAE.

In addition, it was necessary to consider the use of both quantitative and qualitative data, both of which made different contributions to the study. Quantitative data collection methods were based on gathering and analysing observations and data which were in a quantifiable form; which implies that they can be represented numerically. This is usually achieved by making actual observations of quantifiable phenomena, including the number of deaths and accidents, or the number of pieces of legislation passed. However, it can also be obtained through asking individuals to assign values to qualitative factors, such as asking them to use a Likert scale to rank the factors which are important in risk management in the UAE financial services industry. Qualitative data methods, in contrast, aim to gather data which cannot be easily quantified, or represented in a numerical form. This implies asking people for their opinions on certain topics, and their perceptions of various factors. Whilst quantitative data is usually easier to analyse and represent, as it lends itself to representation in graphical forms and statistical analysis techniques, it is often not as rich as qualitative data. This is because quantitative data often only demonstrates a relationship between two factors, it does not help explain why such a relationship occurs, nor can it help to explain relationships which may be unclear when using quantitative analysis (Saunders et al, 2007). In order to fully obtain the benefits of the ethnographic approach, this study looked to use quantitative data to analyse what the most effective risk management practices are, as well as qualitative analysis to understand what drives the various risk management techniques.

3.5 Method of Data analysis

Reliability of the scales used in the questionnaires (questions 13-39) were evaluated using Cronbach's alpha, which measures the consistency with which respondents answer questions within a scale. Cronbach's alpha enables us to measure the reliability of different

variables.It consists of estimates of how much variation in scores of different variables is due to random errors or chance (Selltiz et al.1976).

3.1 Formula for Cronbach's α

$$\alpha = \frac{k}{k-1}\left(1 - \frac{\sum_{i=1}^{k} s_i^2}{s_{sum}^2}\right)$$

Where k is the number of questions (items), s^2_{sum} is the variance of the observed total test scores, and (s^2_i) is the variance of component *i*.

In order to assess the reliability, Cronbach's alpha was calculated for each of the four question segments, and then for the data as a whole. It was only calculated for questions 13-39 of the questionnaire, as these were the only ones in the questionnaire to use a pure single Likert scale. In addition, one way ANOVAs were also used to answer the research questions where relevant .

3.6 Conclusion

This research has used one method of primary data (questionnaires) to address the research questions .It has used quantitative data to analyse what the most effective risk management practices are, as well as qualitative analysis to understand what drives the various risk management techniques. This has helped provide more depth to the data and analysis, and has also allowed some triangulation with the results of the secondary literature review, thus increasing the validity of any conclusions drawn (Saunders et al, 2007). The results are dealt with in turn in the next chapter.

CHAPTER 4

Results and Analysis

4.1 Introduction

Cronbach's alpha is calculated for each of the 4 research segments and then for the data as a whole. Statistical Results are then shown separately under part 1& 2 .

The first part covers results of the first 12 questions in questionnaire .It focuses on obtaining ordinal judgements of the ranked importance and effectiveness of the 5 main risk management techniques identified by the literature review. This part looked at the goals of the risk management process and where the main risks and issues arise, as well as how the Basel II agreement has impacted on risk management in the banks and the extent it has either helped or hindered.

The second part covers result of questions 13-39 of the questionnaire which were used to answer the 4 research questions. Questions were based on a five point Likert scale ratings of individual factors. The respondents were asked to rank on a scale of 1-5 (where 1 indicates "Strongly Disagree" and 5 indicates "Strongly Agree") the extent to which they agree with statements given, indicating the degree of their understanding & implementation of risk management, the most efficient tools and techniques available for the management of risk, the extent to which they are aware of the risks that are associated with their actions and goals & if Basel II agreement assisted or hindered risk management amongst banks in the UAE.

The third section covers results of the two open ended qualitative questions in the questionnaire designed to obtain more details from the employees around their specific attitudes towards, and understanding of, risks and risk management, as well as clarify their answers to the quantitative questions. It assisted in providing some subjective data on the employees' attitude to risks and risk management.

4.2 Cronbach's Alpha

The questionnaire used in this research consisted of 42 questions. As stated earlier, Cronbach's alpha was calculated for each of the four question segments, and then for the data as a whole. It was only calculated for questions 13-39, as these were the only ones in the questionnaire to use a pure single Likert scale. The results are shown in table 4.1 below.

Table 4. 1-Reliability Statistics on four question segments

Research Questions	Reliability Statistics	
1. To what extent are the management teams of banks in the UAE understanding and implementing risk management?		
	Cronbach's Alpha	N of Items (questions)
	.632	6
2. Which are the most efficient tools and techniques available for the management of risk?	**Reliability Statistics**	
	Cronbach's Alpha	N of Items(questions)
	.848	11
3. Are banks in the UAE aware of the risks that are associated with their actions and goals?	**Reliability Statistics**	
	Cronbach's Alpha	N of Items (questions)
	.656	6
4. Has the Basel II agreement assisted or hindered risk management amongst banks in the UAE?	**Reliability Statistics**	
	Cronbach's Alpha	N of Items(questions)
	.500	3
Overall	**Reliability Statistics**	
	Cronbach's Alpha	N of Items(questions)
	.829	27

As a general rule, for Chronbach's alpha a coefficient greater than or equal to 0.7 is considered acceptable and a good implication of construct reliability (Nunnally, 1978). A value of 0.800 is generally accepted as being a excellent indicator of reliability and close to 0.700 being acceptable for relative small samples. The results illustrated in Table 1 above indicate that the data is very reliable overall, with an Alpha value of 0.829. Of the individual objectives, the data relating to the most efficient tools and techniques also shows excellent reliability, whilst the first the third objectives also have reasonable reliability according to Tamimi et al (2007). The fourth objective does not show significant reliability, however this

is related to the fact that Basel II has not been fully integrated into the UAE banking system. As such, the findings from this objective tend to vary depending on where a bank is in its implementation, thus reducing the reliability of the results for this section, although the overall reliability remains excellent.

4.3 PART 1

This Section covers respondents results of the first 12 questions in the questionnaire.

4.3.1 Respondent's Results inrelation to Question No.1-12

Table 4. 2-Respondent's Results on Question No.1

1. Please rate each of the following goals of your risk management process in terms of their importance. Use a scale of 1-6, where 6 is the most important.	No of responses 5 and 6	%	Mean	Standard Deviation
a. To reduce legal liability	5	25%	2.70	1.66
b. To maximise profits	4	20%	2.85	1.84
c. To avoid making any losses	9	45%	4.50	1.28
d. To free up as much capital as possible	3	15%	3.10	1.25
e. To minimise your exposure to market downturns	7	35%	3.75	1.68
f. To reduce the credit risk of your loan portfolio	13	65%	4.50	1.54

Analysis of Respondent's Results to Question No.1.

The results of this question imply that there is a potential misunderstanding amongst banks in the UAE as to the true purpose of risk management. As argued in the Economist (2009), the main aim of a risk management process should be to maximise the profits of the firm, as should be any actions taken by the firm. However, in the sample maximising profit, response b, was rated second lowest in terms of importance. It is interesting to note that this had the largest standard deviation of the sample, with twenty per cent of respondents rating it as the top or second top priority. This implies that some banks are aware of this, but as one of the risk managers noted in their response to question 42, "in the Middle East, risk management as a tool to manage the profitability and operations is relatively new". This

implies that many of the banks in the UAE still need to develop a greater understanding of the usefulness of risk management and its role in strategic business management. Indeed, the two factors with the strongest rankings were "c: to avoid making any losses" and "f: to reduce the credit risk of your loan portfolio". This could indicate that risk managers in the UAE are overly concerned with the most visible aspects of the process: the figures for losses and credit risk, and not the factors which actually add value to the business.

Table 4. 3-Respondent's Results on Question No.2

2. Please rate each of the following methods in your risk management process in terms of their importance. Use a scale of 1-5, where 5 is the most important.	No of responses 4 and 5	%	Mean	Standard Deviation
a. Eliminating risks as much as possible	15	75%	4.32	1.16
b. Using hedging to control risk	6	30%	3.15	0.99
c. Minimizing the potential negative impact of any risks	13	65%	3.74	1.10
d. Transferring risk to partners or clients-	1	5%	1.70	0.98
e. Diversifying operations to reduce the impact of any single risk	7	35%	2.55	1.23

Analysis of Summary of Respondent's Results of Question No.2

The results of this question indicate that the main methods used by banks in the UAE to control risk are the elimination of risk, with mean 4.32, and the reduction of their impacts, with mean 3.74. In contrast, transferring risks to partners, with mean 1.7, and diversifying operations, with mean 2.55, are not seen as major methods. This implies that, of the three risk mitigation strategies defined by Oldfield and Santomero (1997), banks in the UAE seem to be focusing on only one: simple business practices aimed at minimising or eliminating risks. In contrast, they do not appear to be actively engaged in the transfer of risk to other participants better able to bear it, or the active management of risks through hedging and diversification. This again implies a relatively unsophisticated approach to risk management, and a potential lack of understanding of the tools available to manage risk.

Table 4. 4-Respondent's Results on Question No.3

3. What is your main method used to address risks in each business area?	No of responses	%
a. Eliminating risks as much as possible	12	60%
b. Using hedging to control risk	2	10%
c. Minimizing the potential negative impact of any risks	6	30%
d. Transferring risk to partners or clients	0	0%
e. Diversifying operations to reduce the impact of any single risk	1	5%

Analysis of Respondent's Results of Question No.3

Yet again, the study indicates that the minimisation and elimination of risks dominate the approach to risk management in the UAE, with 18 out of 20 respondents indicating that these are main methods. In contrast, only 3 out of 20 respondents engaged in the active management of risks through hedging and diversification, and no respondents looked to transfer risks to partners or client better able to bear it. There were 21 responses to this question as one respondent indicated three choices and one respondent didn't complete it.

Table 4. 5 Respondent's Results on Question No.4

4. Which are the most effective tools and techniques available to your bank for the management of risk? Please rank the following in order of importance where 5 is the most important.	No of responses 4 and 5	%	Mean	Standard Deviation
a. Eliminating risks as much as possible	11	55%	3.68	1.45
b. Using hedging to control risk	5	25%	3.20	0.95
c. Minimizing the potential negative impact of any risks	13	65%	3.79	0.92
d. Transferring risk to partners or clients	2	10%	1.65	1.04
e. Diversifying operations to reduce the impact of any single risk	10	50%	3.00	1.45

Analysis of Respondent's Results of Question No.4

Again, this supports the view that the primary focus of UAE banks is on hedging and minimising risks, and these are seen as the most successful methods. However, it also indicates that using hedging and diversifying operations are successful tools, with means of

3.20 and 3.00 respectively, which implies that perhaps the banks should be using them more as part of a more complete risk management approach.

Table 4. 6-Respondent's Results on Question No.5

5. Which of these tools and techniques available to your bank for the management of risk require most resources to implement successfully? Please rank the following in order of resources required, from most to least where 1 is most resources and 5 is least	No of responses 4 and 5	%	Mean	Standard Deviation
a. Eliminating risks as much as possible	6	30%	2.74	1.52
b. Using hedging to control risk	7	35%	3.30	0.98
c. Minimizing the potential negative impact of any risks	9	45%	3.32	1.00
d. Transferring risk to partners or clients	9	45%	3.25	1.55
e. Diversifying operations to reduce the impact of any single risk	5	25%	2.10	1.48

Analysis of Respondent's Results of Question No.5

This question indicates that the most cost effective methods for minimising risk from a resource point of view are using hedging, with mean 3.30, minimising negative impacts, with mean 3.32, and transferring risk to partners or clients, with mean 3.25. In contrast, eliminating risks has a mean of 2.74 making it relatively resource hungry. This implies that, by focusing excessively on eliminating risks, banks in the UAE are not making the best use of their risk management resources and budgets. Indeed, given the resource efficiency of transferring risks to partners or clients, the fact that banks in the UAE are not using this method at all indicates that they do not fully understand complete risk management practices.

Table 4. 7 Respondent's Results on Question No.6

6. Which of these tools and techniques available to your bank for the management of risk have the most significant short term impact on the risks faced by your bank? Please rank the following in order of short term impact where 1 is strongest short term impact and 5 is weakest.	No of responses 4 and 5	%	Mean	Standard Deviation
a. Eliminating risks as much as possible	8	40%	3.16	1.50
b. Using hedging to control risk	3	15%	2.55	1.15
c. Minimizing the potential negative impact of any risks	9	45%	3.16	1.21
d. Transferring risk to partners or clients	7	35%	2.70	1.66
e. Diversifying operations to reduce the impact of any single risk	9	45%	3.10	1.45

Analysis of Respondent's Results of Question No.6

Yet again, the data indicates that the banks in the UAE are not fully utilising all the most effective risk management operations. Diversifying operations, with a mean of 3.10 and 45% of responses graded 4 and 5, is seen as being comparable in effectiveness to the elimination and minimisation of the negative impacts of risks. However, only one respondent cited this as being their main method of risk management, and it received a mean of just 2.55 when rated in the overall risk management processes.

Table 4. 8-Respondent's Results on Question No.7

7. Please rank these factors in terms of their importance in the current strategic goals and objectives of your bank. Please rank them in terms of importance, where 5 is the most important. If any are not important to your bank's current strategic goals, please exclude them from the rankings.	No of responses 4 and 5	%	Mean	Standard Deviation
a. Increase profits	14	70%	4.22	1.31
b. Increase market share	8	40%	3.17	1.15
c. Reduce costs	11	55%	3.55	0.94
d. Expand into new markets	1	5%	1.37	0.96
e. Improve efficiency	6	30%	3.10	0.97
f. Increase public sector market share	1	5%	4.00	1.41

Analysis of Respondent's Results of Question No.7

This question indicated as strong focus on the need to increase profits, which received a mean response of 4.22. Second to this was the need to reduce costs, which can be strongly linked to improved financial performance. Whilst the desire to increase market share also received a relatively high ranking, indicating that some banks may be prioritising managerial goals over financial goals, only one respondent rated expanding into new markets as an important strategic goal, implying that banks in the UAE remain focused on adding shareholder value.

Table 4. 9 Respondent's Results on Question No.8

8. What are the main types of risk that arise from your pursuit of your strategic goals and objectives? Please select all that apply	No of responses	%
a. Exchange rate risk	14	70%
b. Credit risk	19	95%
c. Operational risk	18	90%
d. Market risk	19	95%
e. Reputational and Concentration Risk	5	25%

Analysis of Respondent's Results of Question No.8

The high scores across all of these questions demonstrate that banks in the UAE are fully aware of the scope of the risks that they face, and do not significantly discount any of the major risks. However, it was interesting to note that six out of twenty respondents did not see exchange rate risk as a main type of risk, in spite of the literature indicating that it is a significant risk for any bank in the current climate (Lang and Nayda, 2008). This implies that exchange rate risk may represent something of a blind spot for banks in the UAE, possibly because of their banking sectors lack of international exposure and development.

Table 4. 10 Respondent's Results on Question No.9

9. To what extent has the Basel II agreement helped in managing risk?	No of responses	%
a. Helped significantly	7	35%
b. Helped a little	8	40%
c. Neither helped nor hindered	5	25%
d. Hindered a little	0	0%
e. Hindered significantly	0	0%

4.3.9 Summary of Respondent's Results of Question No.9

The responses to this question were somewhat influenced by the fact that, as mentioned above, the Basel II agreement is still in the process of implementation in the UAE. As such, some of the managers were only able to provide estimates as to its role in the management of risk. In spite of this, no managers agreed that it had hindered their management of risk, with

fifteen out of twenty agreeing that it had helped them. This implies that the Basel II is assisting risk management amongst managers in the UAE, and should continue to do so in future.

Table 4. 11-Respondent's Results on Question No.10

10. How do the benefits of implementing the Basel II agreement compare to the costs and capital charges?	No of responses	%
a. Benefits strongly outweigh costs	7	35%
b. Benefits slightly outweigh costs?	7	35%
c. Benefits and costs equal	3	15%
d. Costs slightly outweigh benefits?	3	15%
e. Costs strongly outweigh benefits	0	0%

Analysis of Respondent's Results of Question No.10

The responses to this question are less clear cut, with three managers arguing that the costs slightly outweigh the benefits. However, this could be due to the fact that the UAE has not seen the full effects of implementation yet, and these three respondents might only have experienced the costs of implementation to date. Indeed, fourteen out of twenty respondents agree that the benefits outweigh the costs, implying that the Basel II agreement is having a strong positive impact on risk management in the UAE, although it is too early in the implementation cycle to make a definitive judgement on this.

Table 4. 12 Respondent's Results on Question No.11

11. What effect have the Basel II rules had on your capital adequacy?	No of responses	%
a. Helped ensure you are well capitalised	10	50%
b. Had little or no effect	10	50%
c. Caused you to become undercapitalised	0	0%

Analysis of Respondent's Results of Question No.11

Again, the evidence indicates that Basel II is either beneficial or neutral, with no respondents claiming that it caused them to become undercapitalised. This could indicate the strength of the Basel II agreement, however it could simply be a reflection of the fact that

banks in the UAE have not suffered as great losses from the credit crunch when compared to their multinational counterparts, and hence have not experienced any of the countercyclical effects discussed in the literature.

Table 4. 13 Respondent's Results on Question No.12

12. To what extent have you managed to maintain adequate Tier I and Tier II regulatory capital throughout the credit crunch?	No of responses	%
a. Seriously undercapitalised	0	0%
b. Marginally undercapitalised	0	0%
c. Adequately capitalised	17	85%
d. Very strongly capitalised	3	15%

4.3.12 Summary of Respondent's Results of Question No.12

The results of this question also support this argument, with no bank in the UAE becoming undercapitalised due to the credit crunch. This arguably implies that the Basel II agreement has not been needed in the UAE over the past couple of years as the financial sector has not suffered any significant capital losses.

4.4 PART 2

The section covers the 4 Research questions which were answered through questions 13-39

4.4.1 Respondent's Results on Research Question No. 1

It is addressed through Respondents Results for questions 19-25

Table 4. 14 Respondent's Results on questions 19-25

Research question No.1. To what extent are the management teams of banks in the UAE understanding and implementing risk management? Questions 19-24	No of responses 4 & 5	%	Mean	Standard Deviation
19. It is important to continuously review and update risk management techniques	20	100%	4.75	0.44
20. Your bank takes significant steps to keep up to date with current risk management trends	16	80%	4.05	0.69
21. Your bank understands the risk management systems used by other banks and their costs and benefits	9	45%	3.35	0.99
22. Your bank finds it difficult to identify and prioritise its main risks	3	15%	2.40	1.05
23. Your bank finds it difficult to manage its main risks	2	10%	2.15	1.09
24. Your bank effectively assesses the likelihood of different risks occurring	12	60%	3.55	0.89

Statistical Analysis

Table 4. 15-Anova Table-Questions 19-25.

ANOVA table

Source	*SS*	*df*	*MS*	*F*	*p-value*
Treatment	25.04	5	5.008	6.38	2.94E-05
Error	89.55	114	0.786		
Total	114.59	119			

p-values for pairwise t-tests

		Q21 3.4	Q24 3.6	Q22 3.6	Q23 3.9	Q20 4.1	Q19 4.8
Q21	3.4						
Q24	3.6	.4769					
Q22	3.6	.3743	.8587				
Q23	3.9	.0771	.2867	.3743			
Q20	4.1	.0139	.0771	.1111	.4769		
Q19	4.8	2.14E-06	3.89E-05	.0001	.0017	.0139	

The ANOVA values and p-values for this question indicate a significant disagreement between question 19 and the rest of the responses. This implies that whilst banks in the UAE understand the importance of reviewing and updating their risk management techniques, they are less able to actually implement them in reality. This is particularly evident for questions 21 and 24, with the lowest p-values against question 19, and implies that banks in the UAE struggle to understand the systems used by their peers and the market as a whole, as well as effectively assessing the various risks. This is somewhat surprising given that several banks cited understanding best practice methods from the market was a key part of their risk management strategies. Again, this indicates a relatively unsophisticated approach to risk management in the UAE, and a disagreement between theory and practice

4.4.2 Respondent's Results on Research question No.2

It is addressed through 11 questions (25-35) of the questionnaire

Table 4. 16.Respondent's results on Questions 25-35

Research Question No.2 Which are the most efficient tools and techniques available for the management of risk?	No of responses 4 and 5	%	Mean	Standard Deviation
25. Your bank uses numerical methods to assess risks	14	70%	3.75	0.72
26. Your bank uses qualitative methods such as Red Amber Green analysis to assess risks	13	65%	3.35	1.18
27. Your bank is able to accurately evaluate the costs and benefits of taking risks	12	60%	3.55	0.76
28. Your bank is able to accurately evaluate and prioritise different risk treatments even when there are constraints on risk treatment implementation	10	50%	3.60	0.82
29. Your bank's level of risk control is appropriate for the risks that it faces	14	70%	3.75	0.85
30. Your bank's reporting and communication processes support the effective management of risk	13	65%	3.65	0.93
31. Your bank develops action plans for implementing decisions and management plans for identified risks	16	80%	4.15	0.75
32. Your bank's risk management processes are well documented and provide guidance to staff about the management of risk	15	75%	3.90	0.91
33. Your bank's training policies encourage formal training in risk management	11	55%	3.55	0.89
34. Your bank specifically looks to recruit highly trained and qualified people in risk management	13	65%	3.95	0.94
35. It is dangerous to concentrate bank funds in one sector of the economy	20	100%	4.85	0.37

Statistical Analysis

Table 4. 17-Anova Table-Questions 25-35

ANOVA table

Source	*SS*	*df*	*MS*	*F*	*p-value*
Treatment	32.94	10	3.294	4.55	7.58E-06
Error	151.15	209	0.723		
Total	184.09	219			

p-values for pairwise t-tests

		Q26 3.4	Q27 3.6	Q33 3.6	Q28 3.6	Q30 3.7	Q25 3.8	Q29 3.8	Q32 3.9	Q34 4.0	Q31 4.2
Q26	3.4										
Q27	3.6	.4579									
Q33	3.6	.4579	1.0000								
Q28	3.6	.3536	.8527	.8527							
Q30	3.7	.2659	.7104	.7104	.8527						
Q25	3.8	.1384	.4579	.4579	.5776	.7104					
Q29	3.8	.1384	.4579	.4579	.5776	.7104	1.0000				
Q32	3.9	.0421	.1945	.1945	.2659	.3536	.5776	.5776			
Q34	4.0	.0267	.1384	.1384	.1945	.2659	.4579	.4579	.8527		
Q31	4.2	.0033	.0267	.0267	.0421	.0644	.1384	.1384	.3536	.4579	
Q35	4.9	7.49E-08	2.59E-06	2.59E-06	5.93E-06	1.33E-05	.0001	.0001	.0005	.0010	.0099

Here there is evidence that the most effective tool for risk management is actually diversification, as evidenced by its 100% positive response. The only other significantly supported factor, with a p-value of 0.099, was the development of action plans for implementing decisions and management plans for identified risks. In contrast, Red Amber Green and cost benefit analyses were seen as the least effective methods in the context of the UAE, in spite of their widespread support in the literature. This implies that banks in the UAE are not particularly suited to the use of specific internal tools, and diversification and management plans tend to work better in this context. This is recognised by the banks themselves who provide significant support to the need to recruit highly trained and qualified people in risk management.

4.4.3 Respondent's Results on Research question No.3

It is addressed through 6 questions (13-18) of the questionnaire.

Table 4. 18-Respondent's Results on question 13-18

Research Question No.3. Are banks in the UAE aware of the risks that are associated with their actions and goals? Questions 13-18	No of responses 4 and 5	%	Mean	Standard Deviation
13. There is a common understanding of risk management across the bank	7	35%	3.10	1.17
14. Responsibility of risk management is clearly set out and well understood across the bank	8	40%	3.10	1.48
15. Accountability of risk management is clearly set out and well understood across the bank	7	35%	3.15	1.23
16. The management of risk makes an important contribution to the success of the bank	17	85%	4.40	1.05
17. The management of risk makes an important contribution to the financial stability of the bank in the current financial climate.	18	90%	4.30	0.98
18. Risk management helps to reduce costs and expected losses at the bank	20	100%	4.40	0.50

Statistical Analysis

Table 4. 19-Anova Table-Questions 13-18

ANOVA table

Source	*SS*	*df*	*MS*	*F*	*p-value*
Treatment	47.04	5	9.408	7.66	3.05E-06
Error	139.95	114	1.228		
Total	186.99	119			

p-values for pairwise t-tests

		Q13 3.1	Q14 3.1	Q15 3.2	Q17 4.3	Q16 4.4	Q18 4.4
Q13	3.1						
Q14	3.1	1.0000					
Q15	3.2	.8868	.8868				
Q17	4.3	.0009	.0009	.0014			
Q16	4.4	.0003	.0003	.0005	.7758		
Q18	4.4	.0003	.0003	.0005	.7758	1.0000	

In the area of risk awareness, there seems to be a major issue for UAE banks. The banks accept that the management of risk makes an important contribution to the success of the bank, and its financial stability in the current financial climate, as well as understanding that risk management helps reduce costs and losses. However, the p-values indicate that this is countered by a lack of common understanding of risk management; responsibility of risk management; and accountability for risk management. This implies that banks in the UAE are aware of risk management and its importance, but are not aware of how risks emerge from their aims and goals, and the need to develop strong responsibility and accountability structures in order to deal with this fact. It appears that risk management as a concept is set apart from risk management as a practice in the majority of banks.

4.4.4 Respondent's Results on Research question No.4

It is addressed through 3 questions (36-38) of the questionnaire.

Table 4. 20-Respondent's Results on Question 36-38

Research question No.4. Has the Basel II agreement assisted or hindered risk management amongst banks in the UAE?	No of responses 4 and 5	%	Mean	Standard Deviation
36. Bank capital is adequate if the ratio of capital to risk weighted assets is 8%	10	50%	3.35	1.42
37. The Basel II Accord is relevant to the risk management situation of your bank	18	90%	4.30	0.66
38. The Basel II Accord could be modified to make it more relevant to your bank	14	70%	3.65	1.18

Statistical Analysis

Table 4. 21 -Anova Table-Questions 36-38

ANOVA table

Source	*SS*	*df*	*MS*	*F*	*p-value*
Treatment	9.43	2	4.717	3.67	.0317
Error	73.30	57	1.286		
Total	82.73	59			

p-values for pairwise t-tests

		Q36	Q38	Q37
		3.4	3.7	4.3
Q36	3.4			
Q38	3.7	.4063		
Q37	4.3	.0104	.0752	

In this area, the p-values and ANOVA indicate significant agreement amongst the responses and variances. However, this must be viewed with caution in the context of the Cronbach's Alpha value for this section, and the fact that the banks are currently in the process of implementing the Basel II accord. Evidence of this confusion can be seen from the high 0.752 p-value between Q37 and Q38. This implies that whilst the Basel II accord is relevant to the risk management practices of most banks, it could still be modified to make it more relevant. As such, further research should be conducted in the future once Basel II has been fully implemented to determine how relevant it actually is in the UAE case, and what the specific costs and benefits are to banks in the Emirates. However, even in this early stage some banks commented that Basel II should only be seen as a guiding factor, and is not absolute in itself. This argument is based on the collapse of some Basel II compliant banks around the world, implying that Basel II is not sufficient to protect banks against all risks. However, it is interesting to note that these collapses were cited on the inability of banks to actually manage their customer and capital risks, and not on shortcomings in the Basel II Accords.

4.5 PART 3

Respondent's Results of the 2 open ended questions (41-42) in the questionnaire

4.5.1 General Approach to Risk

The qualitative questions offered additional insight into the role given to risk management in the UAE, and how it was addressed. In general, the banks in the UAE claimed that the concept of risk management was part of the core of any financial institution. However, this argument was somewhat muted by the view of risk management, with the majority focusing purely on the identification, measurement, monitoring and controlling of risks and potential risks. This implies an operational approach to risk management, rather than a strategic approach, with many of the banks failing to consider the need to take strategic approaches such as diversification and risk transfer as part of a holistic risk management strategy. In addition, the risk appetite of the board of directors and shareholders is rarely mentioned, again indicating that risk management may not be relevant at the strategic level.

In terms of the risks faced by UAE banks in the current climate, the evidence indicates that UAE banks are not facing the same level of risks as their Western counterparts due to the lack of global exposure. This is supported by the answers to Part 3, as well as the fact that exchange rate risk is seen as being less critical than the other three main risk categories.

As such, many of the risks faced by UAE banks in the current climate are the standard transactional risks, including the risks associated with securitisation, derivatives and other tools. However, the evidence from the surveys does support the argument that banks in the UAE have similar problems with identifying where the risk lies in major transactional chains, and which counterparty in the chain will ultimately bear said risks. This is similar to the multinational banks that have invested in subprime mortgages, although in the UAE the risks do not appear to be materialising on the same scale. However, one very specific risk that the

UAE banks are facing is that they are struggling to acquire the skilled resources needed to implement more effective research practices. This is again supported by the focus on the recruitment of skilled people which is a key aspect of the risk management strategy of the banks in Part 2.

4.6 Conclusion

A summary of results for different parts of the questionnaire indicate that banks in UAE are only facing a relatively narrow range of risks, and similarly are not using a particularly diverse range of risk management practices. The banking sector in the UAE has not developed to a stage where more complex risk categories have emerged on a major scale and most risks are those found in the mainstream literature. In terms of the risk management practices of the banks, these again seem to be relatively unsophisticated and lacking in understanding about the sophisticated tools available to fully manage risk. As such, they focus on the relatively blunt tools of risk mitigation and risk elimination, rather than taking a more advanced strategic approach.

CHAPTER 5

Conclusion

5.1 Introduction

This research examined risk management and its importance to the fundamental operation of banks in UAE & also examined different risk management practices and techniques dealt within banks in UAE. However, impact of Basel II agreement could not be assessed since UAE is currently in something of a transitional period, with Basel II in the process of being implemented, hence the research should be repeated once implementation is complete. This chapter provides a summary of findings pertaining to each of the 4 research questions.

5.2Summary of Findings of Research Question No,1

To what extent are the management teams of banks in the UAE understanding and implementing risk management?

When addressing the question of to what extent the management teams of banks in the UAE understand and implement risk management, the evidence indicates that the banks have a relatively limited understanding and implementation capabilities. As a result, there tends to be an overwhelming focus on the reduction and elimination of actual risks, rather than on a strategic approach to risk management including the use of partners and diversification strategies. This implies that the banks in the UAE are taking a more operational approach to risk management, and not the sophisticated strategic approach that is often recommended in the literature. There appear to be two reasons for this. The first is that banks in the UAE do not have access to the skilled resources that they need to implement complex strategic risk management strategies, and hence have to concentrate on the simpler risk mitigation and elimination approaches. The second is that the banks in the UAE are not as large and global as their multinational counterparts, and hence their primary risks are operational in nature. Whilst this means that the UAE banks do not necessarily need to develop a strategic risk management capability, their lack of said capability is likely to hinder

their expansion on the international stage, and put them at a disadvantage when competing with more sophisticated international banks.

5.3 Summary of findings of Research Question No,2

Which are the most efficient tools & techniques available for the management of risk?

In terms of the most efficient tools and techniques available for the management of risk, the literature is not clear on this. Numerous tools and techniques are put forward, including value at risk analysis (Leong, 1996), hedging (Abraham, 2008), diversification (Oldfield and Santomero, 1997), and risk mitigation (Carey, 2001). The literature makes persuasive arguments for all of these tools, and their integration into a holistic risk management strategy. However, the banks in the UAE provide some evidence for their relative effectiveness, and also cost effectiveness, in the UAE context. Here there is evidence that the most effective tools for risk management are diversification and the development of action plans for implementing decisions and management plans for identified risks. This could potentially be a reflection of the lack of sophistication of UAE banks, evidenced by the fact that Red Amber Green and cost benefit analyses were not seen to be effective in spite of their support in the literature. In addition, on a cost basis, hedging and risk mitigation were found to be efficient, again implying that a sophisticated and balanced approach to risk management is more effective that the use of any specific tool or technique.

5.4 Summary of findings of Research Question No.3

Are banks in the UAE aware of the risks that are associated with their actions & goals?

The evidence from the analysis indicates that banks in the UAE are not fully aware of the risks that are associated with their activities. In particular, there is a disconnection between the awareness of the importance of the management of risks and financial stability and the level of awareness of risks across the banks, and the role of understanding,

responsibility and accountability in achieving this awareness. However, there was evidence from Part 1 that banks in the UAE are aware of the scope of the risks that exist, which goes some way towards countering this issue. The main area where this disconnection was evident was in the potential for systematic global crises and shifts to affect UAE banks, evidenced by the fact that almost a third of respondents discounted the impact of exchange rate risk. This occurred in spite of the fact that increasing market share received an above average response in Part 1, indicating that banks may be looking to expand without considering how this can increase the risks they face.

5.5 Summary of Findings of Research Question No.4

Has Basel II agreement assisted or hindered risk management amongst banks in UAE?

Finally, the question of whether the Basel II agreement assisted or hindered risk management amongst banks in the UAE cannot be answered at this time, due to the fact that Basel II has not been fully implemented in the UAE. Preliminary evidence indicates that the effects of the agreement are likely to be either neutral or positive, however for some banks the costs may outweigh the benefits, which will arguably take resources away from more general risk management. Indeed, some of the evidence from Part 3 suggested that Basel II should not be seen as a solution to risk management it its own right, as Basel II is strongly based on compliance with guidelines. Instead, the evidence indicates that Basel II should be seen as a useful tool and guide, but should not replace a truly effective risk management strategy. As such, it could be argued that the Basel II guidelines will only assist banks that already have inadequate or unsophisticated risk management processes, and will have no effect on those whose risk management practices are already examples of good practice. This again creates support for the argument that some banks in the UAE are not pursuing sophisticated risk management strategies, with half of respondents indicating that Basel II will help improve their risk management practices.

5.5 Conclusion

In terms of the main aim of this research, the evidence implies that even in the current climate UAE banks are only facing a relatively narrow range of risks, and similarly are not using a particularly diverse range of risk management practices. In general, banks in the UAE only see credit risk, operational risk and market risk as being uniformly important, with a fairly large proportion facing exchange rate risk and a small proportion facing reputational risk and concentration risk. This implies that the banking sector in the UAE has not developed to the point where more complex risk categories have emerged on a major scale, and most risks are those found in the mainstream literature. In terms of the risk management practices of the banks, these again seem to be relatively unsophisticated and lacking in understanding about the sophisticated tools available to fully manage risk. As such, they focus on the relatively blunt tools of risk mitigation and risk elimination, rather than taking a more advanced strategic approach. This could be argued to demonstrate that UAE banks are pursuing a proportional risk management strategy, however it also indicates a short term focus which could act to hinder the international expansion and success of the UAE banking industry in the medium and long term.

5.6 Recommendations for future action

As the UAE is currently in something of a transitional period, with Basel II in the process of being implemented, the study should be repeated once implementation is complete. This will help produce a better understanding of the impact of Basel II on the country, as well as demonstrating how the implementation of the Basel II agreement has changed risk management practices in general. It would also be useful to carry out a series of study groups and interviews with risk managers in the UAE and external risk management experts to add some qualitative details and richness to the quantitative findings in this study, and this should form part of any future research effort in this area.

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APPENDIX A

Questionnaire

Part 1

1. Please rate each of the following goals of your risk management process in terms of their importance. Use a scale of 1-6, where 6 is the most important.

a. To reduce legal liability	
b. To maximise profits	
c. To avoid making any losses	
d. To free up as much capital as possible	
e. To minimise your exposure to market downturns	
f. To reduce the credit risk of your loan portfolio	

2. Please rate each of the following methods in your risk management process in terms of their importance. Use a scale of 1-5, where 5 is the most important.

a. Eliminating risks as much as possible	
b. Using hedging to control risk	
c. Minimizing the potential negative impact of any risks	
d. Transferring risk to partners or clients	
e. Diversifying operations to reduce the impact of any single risk	

3. What is your main method used to address risks in each business area?

a. Eliminating risks as much as possible	
b. Using hedging to control risk	
c. Minimizing the potential negative impact of any risks	
d. Transferring risk to partners or clients	
e. Diversifying operations to reduce the impact of any single risk	

4. Which are the most effective tools and techniques available to your bank for the management of risk? Please rank the following in order of importance where 5 is the most important.

a. Eliminating risks as much as possible	
b. Using hedging to control risk	
c. Minimizing the potential negative impact of any risks	
d. Transferring risk to partners or clients	
e. Diversifying operations to reduce the impact of any single risk	

5. Which of these tools and techniques available to your bank for the management of risk require most resources to implement successfully? Please rank the following in order of resources required, from most to least where 1 is most resources and 5 is least

a. Eliminating risks as much as possible	
b. Using hedging to control risk	
c. Minimizing the potential negative impact of any risks	
d. Transferring risk to partners or clients	
e. Diversifying operations to reduce the impact of any single risk	

6. Which of these tools and techniques available to your bank for the management of risk have the most significant short term impact on the risks faced by your bank? Please rank the following in order of short term impact where 1 is strongest short term impact and 5 is weakest.

a. Eliminating risks as much as possible	
b. Using hedging to control risk	
c. Minimizing the potential negative impact of any risks	
d. Transferring risk to partners or clients	
e. Diversifying operations to reduce the impact of any single risk	

7. Please rank these factors in terms of their importance in the current strategic goals and objectives of your bank. Please rank them in terms of importance, where 1 is the most important. If any are not important to your bank's current strategic goals, please exclude them from the rankings.

a. Increase profits	
b. Increase market share	
c. Reduce costs	
d. Expand into new markets	
e. Improve efficiency	
f. Other (please specify) ----------	

8. What are the main types of risk that arise from your pursuit of your strategic goals and objectives? Please select all that apply

a. Exchange rate risk	
b. Credit risk	
c. Operational risk	
d. Market risk	
e. Other (please specify)----------	

9. To what extent has the Basel II agreement helped in managing risk?

a. Helped significantly	
b. Helped a little	
c. Neither helped nor hindered	
d. Hindered a little	
e. Hindered significantly	

10. How do the benefits of implementing the Basel II agreement compare to the costs and capital charges?

a. Benefits strongly outweigh costs	
b. Benefits slightly outweigh costs?	
c. Benefits and costs equal	
d. Costs slightly outweigh benefits?	
e. Costs strongly outweigh benefits	

11. What effect have the Basel II rules had on your capital adequacy?

a. Helped ensure you are well capitalised	
b. Had little or no effect	
c. Caused you to become undercapitalised	

12. To what extent have you managed to maintain adequate Tier I and Tier II regulatory capital throughout the credit crunch?

a. Seriously undercapitalised	
b. Marginally undercapitalised	
c. Adequately capitalised	
d. Very strongly capitalised	

Part 2

On a scale of 1-5 (where 1 indicates "Strongly Disagree" and 5 indicates "Strongly Agree") please rank the extent to which you agree with the following statements:

13. There is a common understanding of risk management across the bank	
14. Responsibility of risk management is clearly set out and well understood across the bank	
15. Accountability of risk management is clearly set out and well understood across the bank	
16. The management of risk makes an important contribution to the success of the bank	
17. The management of risk makes an important contribution to the financial stability of the bank in the current financial climate.	
18. Risk management helps to reduce costs and expected losses at the bank	
19. It is important to continuously review and update risk management techniques	
20. Your bank takes significant steps to keep up to date with current risk management trends	
21. Your bank understands the risk management systems used by other banks and their costs and benefits	
22. Your bank finds it difficult to identify and prioritise its main risks	
23. Your bank finds it difficult to manage its main risks	
24. Your bank effectively assesses the likelihood of different risks occurring	
25. Your bank uses numerical methods to assess risks	
26. Your bank uses qualitative methods such as Red Amber Green analysis to assess risks	
27. Your bank is able to accurately evaluate the costs and benefits of taking risks	
28. Your bank is able to accurately evaluate and prioritise different risk treatments even when there are constraints on risk treatment implementation	
29. Your bank's level of risk control is appropriate for the risks that it faces	

30. Your bank's reporting and communication processes support the effective management of risk	

31. Your bank develops action plans for implementing decisions and management plans for identified risks	

32. Your bank's risk management processes are well documented and provide guidance to staff about the management of risk	

33. Your bank's training policies encourage formal training in risk management	

34. Your bank specifically looks to recruit highly trained and qualified people in risk management	

35. It is dangerous to concentrate bank funds in one sector of the economy	

36. Bank capital is adequate if the ratio of capital to risk weighted assets is 8%	

37. The Basel II Accord is relevant to the risk management situation of your bank	

38. The Basel II Accord could be modified to make it more relevant to your bank	

39. Your bank has excellent overall risk management practices and processes	

40. What are the three most important and effective risk identification methods used by your bank?

a. Judgement of the bank's risk manager	
b. Judgement of external risk management experts	
c. Internal communications including consulting with employees	
d. SWOT analysis (Strengths, Weaknesses, Opportunities and Threats)	
e. Scenario planning	
f. Benchmarking	
g. Risk audits and inspections	
h. Analysis of financial statements	
i. Risk surveys	
j. Process analysis	
k. Other	

<u>Part 3</u>

41. Please describe your concept of risk management as fully as possible. Please refer back to your previous answers if relevant.

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42. Please describe your bank's risk management processes a fully as possible. Please refer back to your previous answers if relevant.

