RECENT DEVELOPMENTS IN BANKING SUPERVISION AND THE SOUNDNESS OF THE FINANCIAL SYSTEM: A COMPARATIVE STUDY OF SOUTH AFRICA, BRAZILAND CHINA

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ABSTRACT

While the 2008 financial crisis has come and gone, its effects on the global financial sector still show. Globalisation has since changed the way that banks do business, and increased competitiveness and with it the level of risk within the international banking community. Therefore, because of these prolonged effects of the financial crisis and the rise in the level of risk in banking, regulators deemed it fit to make the global financial sector safer and sounder. As a result, the BASEL III Capital Accord was introduced with tighter capital adequacy and liquidity ratio requirements; as well as also introducing the leverage ratio. In this paper, through the study of the rules and regulations on banks in South Africa, Brazil and China, it was discovered that all three countries have since begun the implementation of the new Accord as from January 2013. While preparatory measures may be different, there is a general sense of regulatory alignment among the three countries. By analysing the capital adequacy, liquidity and leverage ratios of the three countries, it was also established that these ratios are interconnected, with the capital adequacy ratio being the most important one. The study concludes that, with proper implementation of these ratios and effective management, countries implementing the BASEL III regulations would be in a stronger position to achieve soundness in their banking systems.

Keywords: *Capital adequacy ratio, leverage ratio, liquidity ratio, regulatory alignment, BASEL III*

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INTRODUCTION

1.1 BACKGROUND

A financial system lies at the "heart" of an economy and thus, the success of policy making and the effectiveness of the central bank in controlling the variables of an economy depend on the soundness of the financial system (Kapoor, 2010: 6). Most individual enterprises lack enough capital for large investment which is important for firms to take advantage of increasing returns to scale. Therefore, the financial system, which is made up of mostly banks and other financial intermediaries, acts as a source of capital for most of these firms (Stiglitz, 1998: 1). The role of the financial system is, as noted by Boot and Thakor (1997), to act as an intermediary through the transfer of funds from surplus to deficit units.

Much of the literature emphasises the importance of the link between the financial system and the economy as a whole, and notes the importance of a well-managed system so as to allocate resources efficiently. Duisenberg (2001: 2) emphasises this role in that the financial system "provides (for) the continuous restructuring of the economy that is needed to support growth." Banks have become the major players of the financial system as they are at the centre of the funds transfer process (Allen and Carletti, 2008). They have, however, also become the major reason why many financial systems fail; and Claessens and Kose (2013: 18) argue that "banks are inherently fragile, making them vulnerable to runs by depositors" and so the fall of a major bank may lead to the collapse of the whole system. The volatile nature of the banking sector, and the other intermediaries that make up the overall financial system, therefore make the system potentially volatile and susceptible to shocks. Thus, an inefficient financial system causes crises.

History shows that banks were in the centre of most of the financial crises that occurred prior to the Great Financial Crisis of 2008 (Foster and Magoff, 2009: 45), the worst of which was the Great Depression of the 1930s. Although bank regulation had been in force for decades, it was not as tight as it should have been. According to Larson (2011:5), regulation seemed to be subjective, with countries left to do what they deemed fit for their financial systems. However, with the rise of globalisation, this subjective view to regulation changed as the failure of one financial system meant many more would also fail. This was mainly shown by the fall of some major banks in Europe in 1974 which affected the international financial market as a whole; thus banking and financial regulation had to become a necessity rather than an option and be implemented at an international level.

The Bank for International Settlements (BIS), through its Basel Committee for Bank Supervision (BCBS), has been a major player in the regulation of banks since 1974. The BASEL Committee proposed the first set of banking regulations in 1988, called BASEL I (also known as the Basel Capital Accord) following the fall of the Bretton Woods system in 1973 which resulted in the fluctuation of exchange rates. The main focus was on capital adequacy and the Committee called for a high capital to asset ratio of 8% (BCBS, 2013: 2). BASEL I also focused on credit risk, with an amendment to the Capital Accord being made in 1995. To emphasise the importance of good quality capital for banks and the financial system, the Committee proposed a new set of regulation guidelines in 1999, i.e. the BASEL II Accord. BASEL II was meant as a major improvement to BASEL I and also to act as an encouragement for banks to continue to manage risk better (BCBS, 2013: 3). Prior to the fall of Lehman Brothers, which marked the onset of the financial crisis in the United States in 2008, the Committee realised how vulnerable the banks were as a result of high leverage ratios, low capital adequacy ratios and low liquidity ratios; therefore they proposed the "Principles for sound liquidity risk management and supervision" which became known as BASEL 2.5, as it strengthened the BASEL II Accord (BCBS, 2013:4).

The final attempt by the Committee to avert a financial crisis (at the end of 2007), was to no avail as the crisis hit the global market beginning of 2008. The crisis started in the United States and, as was the case in the earlier crises, the banks were blamed. With very high leverage ratios and a growing number of unsecured loans, under a very low interest rate policy, the banks created a credit boom. Claessens and Kose (2013: 9) argue that the rapidly increasing house prices and the stagnant salaries created the need for credit by the public which gave banks the opportunity to increase their profitability. To attract more clients, banks began issuing poorly secured or unsecured loans leading to a series of loan defaults; accompanied by the low capital levels and high leverage ratios. This resulted in the demise of some banks, with Lehman Brothers being the first major bank to declare bankruptcy. This was followed by a series of government bailouts and the subsequent European Sovereign Debt Crisis which was also contributed to by the financial meltdown (Edmomds*et.al*, 2010: 6). The financial crisis thus pointed out the fact that regulation was still inadequate and that risk in the system was still very high. Should the banks have had enough capital and proper risk management tools when the crisis emerged, most of them would have avoided bankruptcy. The BASEL Committee accordingly proposed a new set of banking regulations known as BASEL III in 2010. The focus was again on capital adequacy, the quality of capital and risk management for banks but, liquidity and leverage ratios were thus introduced, and these ratios will be the cornerstone of the investigation of the

soundness of the financial system in this research. Therefore it is essential to define these concepts in detail.

The capital adequacy ratio measures bank capital in relation to risk exposure and assets. For a bank to stay solvent and avoid the risk of a declining value of assets, therefore keeping it and the system efficient, it has to be positively capitalised, with the value of its capital exceeding its liabilities; hence under BASEL III, capital adequacy ratios were upgraded (BCBS, 2013: 4). Larson (2011) states, since banks make loans by accepting deposits, which are liabilities, a high capital base would protect the bank in the case of a bank run. In 2008, as result of low capital bases, many banks failed to honour their liabilities and therefore collapsed; the importance of capital cannot be emphasised enough. Not only was the level of capital increased, but the quality of capital was also redefined under the new Accord to ensure that the capital buffer the banks have is strong enough.

The focus of BASEL III also lies on bank leverage; i.e. the extent to which a bank finances its assets through debt rather than equity since the former is a cheaper source of finance. However, while high leverage can lead to higher profits for banks, it can lead to increased losses and erode a bank's capital during unfavourable conditions, as was the case with the 2008 crisis. A situation of high leverage also requires that the assets generate returns sufficient to cover the cost of debt finance. If the return falls, which may be the case in times of financial stress, high leverage becomes problematic (BCBS, 2014: 1). The problem would be initiated with banks continuously making bad and / or unsecured loans and ultimately a bank run would lead to insolvencies (D'Hustler, 2009: 1). High leverage is regarded as being a major contributor to the 2008 crisis, and the BASEL Committee accordingly proposed a "non-risk based leverage ratio to supplement the risk based capital framework of BASEL II". The leverage ratio is measured by dividing the bank's capital by its total exposure (BIS, 2012: 32).

Liquidity, which is the ease with which a bank can convert its assets into cash, is also a major focus of the new accord. BASEL III covers two liquidity ratios; the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR). The LCR requires banks to hold high quality liquid assets. Since banks are in the business of making loans which make up part of their assets, loan defaults would mean they are no longer liquid, therefore high quality liquid assets would prevent bank failure in times of financial stress (Bouwman, 2013: 1). The liquidity ratio is given by the ratio of high quality liquid assets to total net liquidity outflows (BIS, 2012: 37). As mentioned before, the BASEL Committee did not only advocate for more capital but also for good quality capital; to ensure that banks always have high quality and more stable bases of

funding or capital. According to BIS (2012), the NSFR should also at all times exceed 100%. It is important to note that even with enough capital, some banks still failed during the 2008 crisis, because they had low liquidity, demonstrating the importance of liquidity as a supplementary tool in avoiding bank failures (Sheng, 2013).

While much has been written on the 2008 global financial crisis and its effects on the United States and Europe, there is still a need for research on the countries which had, unlike the USA, implemented BASEL II and III and whether or not this contributed to their avoiding the immediate (financial) effects of the crisis. Of interest is a comparison between South Africa and the two BRICS countries selected for this study, namely China and Brazil, since fairly similar BASEL II and III implementations were followed. The trade and banking relationships shared by these countries make it essential to have compatible regulatory systems in place.

1.2 IMPORTANCE OF THE RESEARCH

The role of banks within a financial system has grown over the years and so has their contribution, whether positive or negative. With this there has been the need to regulate and monitor how banks operate. It also brings up the issue of risk management and hence the evolution of the BASEL Accords. However, even with these regulations in place, many banks collapsed during the financial crisis. This may be attributed to some flaws in the regulatory policy (Cao, 2012:180) and also the lack of efficient risk management tools. Risk management has been made a requirement for banks as they are required to have a set of risk management tools as part of the regulatory requirements that are put forward for them. The core of risk management under the BASEL Accords has always been that of capital adequacy, as by imposing a capital buffer requirement, regulators ensure that banks can "make their risks sustainable" (Bessis, 2010:9). As it was evident towards the 2008 crisis that regulatory agencies failed to notice and therefore avert disaster, risk management tools are very important to avoid the recurrence of such a situation.

There has been a noticeable increase in the growth of activity in the financial sectors of the developing countries, especially after the crisis. This therefore shows how banks in these countries are also growing, thus motivating the need for better risk management tools for these banks. This also provides a better justification for the need to analyse the viability of the leverage and the liquidity ratios (which are part and parcel of capital adequacy) as banking risk measurements within the BRICS countries. It is no secret that the high bank leverage and very low liquidity ratios contributed highly to the collapse of most banks during the crisis. This therefore raises the fact that these ratios can be good indicators of bank risk and so measures can

be taken to avoid disaster. Although there are a lot of risk management tools that have been proposed over the years, there has not been much exploration on the effectiveness of these ratios as warnings; thus a reason for this study.

This study involves three of the BRICS countries as they seem to be at roughly the same level of regulatory policies, with regard to implementing the BASEL III. As mentioned above, the economic relationships that these countries have make it essential to have a uniform regulatory system. The choice of the countries also stems from the fact that they are developing countries and their level of bank and financial activity has been growing, making them very much vulnerable to high risk.

1.3 GOALS OF THE RESEARCH

The first goal of the research will be to investigate the implementation of BASEL II and BASEL III in South Africa, China and Brazil in order to establish the extent of financial policy alignment between them. This is essential to avoid the possibilities of bank arbitrage (which will be discussed in detail under the weaknesses of BASEL II) and contagion.

Secondly, the research will analyse the financial soundness of the three countries by examining their capital adequacy, leverage and liquidity ratios, comparatively; over a period of eight years before and five years after the 2008 financial crisis (2000-2013). This is essential to draw a conclusion on their BASEL II implementation, as well as their planning for BASEL III.

1.4 METHODS AND PROCEDURES

Publications regarding the implementation of BASEL II and III in the three countries will be used to examine regulatory policy alignment as well as the soundness of the banking systems of the three countries prior to and after the crisis. Research papers and reports on the BASEL Accords will also be analysed so as to bring out the successes and failures of the Accords over the period 2000-2013.

The data to construct the three ratios for the three countries will be collected for comparative and descriptive analysis to draw conclusions on the financial soundness of each country as the BASEL Accords include these ratios as part of regulatory standards. The analysis will be instrumental to determine whether the adoption of these ratios has influenced bank risk in any way at a national level over the selected time period. Statistical data for the capital adequacy, leverage and liquidity ratios for the three countries will be obtained from Bankscope, an international banks' electronic database, while additional information on regulation and

implementation of the BASEL Accords will be sourced from the Central Banks of the countries and the Bank of International Settlements.

1.5 ORGANISATION OF THE STUDY

To fully understand the full evolution and implementation of the BASEL Capital Accords, the rest of the study is arranged as follows: Chapter 2 gives a general overview of the history of regulation as well as the history of all the three BASEL Accords. This includes the reasons for the transitions from BASEL I to BASEL II and from BASEL II to BASEL III. Chapter 3 deals with the planning, implementation and timeline of the BASEL III Accord in South Africa, Brazil and China. This chapter will show, in detail, how each of the three countries has prepared for the implementation of the new Accord and will also discuss how the Accord will be introduced in each country. Chapter 4 analyses and compare the capital adequacy ratio, leverage ratio and liquidity ratio for the three countries. Finally, Chapter 5 discusses the major findings, conclusions and recommendations.

CHAPTER 2

OVERVIEW OF THE DEVELOPMENT OF BANKING SUPERVISION AND REGULATION: BASEL I, II AND III

2.1 INTRODUCTION

Banks being the major role-players in the financial system has raised an awareness of the dangers they pose when it comes to financial crises. This has created the need for tighter regulation which is key in trying to avoid crises. However, despite all regulatory standards proposed, banking risks still exist. It is therefore important to understand the role the banks play in the financial system, the history of financial crises and bank regulation so as to explore the theoretical foundations and evolution of the capital adequacy, leverage and liquidity ratios.

2.2 HISTORY OF FINANCIAL CRISES

Literature has shown that the financial sector is an important contributor to economic development. Honohan and Laeven (2005) say that the lack of efficient financial systems is one of the reasons that poverty is always high and economic growth is sometimes low. However, it is also important to keep in mind that most of the financial systems around the world are also very fragile and are plagued by crises and these have been marked as the "unmeasured costs of banking crises" (Honohan and Laeven, 2005). Banks have been associated with financial crises to the extent that Bordo and Landon-Lane (2010) define financial crises as "banking crises that are aggravated by debt and/ or currency crises." This shows how much banks contribute in creating these crises and how much they need to be regulated.

According to Bordo and Landon-Lane (2010:7), the crisis of 1914 was the last major crisis before the World War I broke out and this marked the beginning of major capital controls. Although these controls helped to avert crises in many countries, the post war period (1919-1939) brought new problems as there were two major periods of bank failures leading to major recessions. Financial crises during inter World War I-II period happened within a state of complete globalisation during which many economies were under the Gold Standard, which meant that exchange rates were fixed. This period is also well known for the Great Depression of 1929-33 which was a consequence of the stock market collapse of 1929.

As mentioned before, there were two major periods of bank failures that led to recessions. The first was the period 1920-1925 which marked a series of bank failures across Europe, Asia and Mexico. Major European banks failed because of the hyper-inflation that had been caused by the aftermath of the war. Many countries tried to revert back to the Gold Exchange Standard in an

effort to stabilise their economies to no avail. The next major period of bank failures was 1929-1934 which has become the worst period in financial crises history. The stock market crashes in the United States and the United Kingdom in 1929 marked the beginning of the Great Depression. This was made worse by many unpredictable bank panics that occurred in 1930 in the US. These bank panics could not be predicted and even occurred under the fixed exchange rate regime. The bank panics came to an end after many adopted the Bretton Woods system. The Bretton Woods has been credited for the crisis-free period that followed World War II, but as soon as it was abandoned in the 1970s, banking crises emerged again. The 20th century has been branded the era of banking crises which plagued the world throughout the 1980s and worsened during the 1990s (Bordo andLandon-Lane, 2010). According to Bexley *et.al* (2010), it is during the 20th century that over 1600 banks failed.

According to Bordo and Landon-Lane (2010), in the period 1990-2000 there were three major crises: the European banking and currency crisis, the Mexican banking crisis of 1994 and the Asian banking and currency crisis of 1997. In all of these, bank failures were present which supports the definition of a financial crisis which includes a bank crisis. The most recent financial failure is the Global Financial Crisis of 2008. According to Gup (2010), this was a crisis that had many causes ranging from the trading of high risk securities, the collapse of the housing market, poor bank balance sheets and business models, excessive leveraging, liquidity problems, to mention but a few. It has also been observed that these causes reflect greediness and poor regulation of the banking industry.

2.3 THE ROLE OF BANKS IN THE FINANCIAL SYSTEM

Banks have a part to play in the evolution and magnification of financial crises but they also have a part to play in the development of the financial system. The financial system is crucial to the economy because it plays a significant role in the provision and routing of short and long term funds for investment purposes. This directly feeds into the economy as investment is the main driver of economic growth. Thus, it has become evident over time that although there are many players within the financial system, banks do play the most important role as they transform savings into long term financing (OECD, 2013). Provision of funds and information are some of the many roles that banks play in the financial system.

In the event that the system fails and collapses, it would not only become difficult to trade securities but the cost of capital would rise significantly (OECD, 2013). This shows the extent to which banks are important in the day to day activities of the financial sector. However, as a result of the volatility of the assets they trade and hold and the lack of balance between these assets and

their liabilities, banks become more vulnerable to runs and possible risk (Allen and Carletti, 2008). This brings to the fore the challenges that arise as a result of the banking system being the heart of a financial system. Banks have proven that they can cause a financial system to collapse - as has been evident since the Great Depression of 1929-1933; thus they have to be monitored constantly.

Before looking into the concept of regulation, it is important to focus briefly on the financial crises and how banks have contributed to them; for it is because of such events that bank regulation became a necessity. The next section presents an insight into the financial crises from the World War I-II period to the 2008 financial crisis.

2.4THE ROLE BANKS PLAY IN FINANCIAL CRISES

Banks were once viewed as the foundation of the economy, as they were safe efficient and reliable, while providing the capital means by which an economy would flourish and prosper. However, as much as banks contribute deeply to economic development, they are also responsible for the creation or aggravation of financial crises through bank panics. Banks are major risk takers and over the years developed ways to manage risks (Posner, 2009). Banks make their profits out of deposits which they use to grant loans and depositors have the right to claim their money and therefore can withdraw these deposits anytime.

When banks are funded largely on borrowed funds their loans outstrip their capital, making them susceptible to runs and subsequently bankruptcy if the loans are defaulted upon. Therefore, since banks provide long term loans while giving depositors instant access to their savings, they become vulnerable to imbalances in their books, thus incurring a liquidity risk (Posner, 2009).There are many other causes of financial crises that have been identified over the decades and, bank panics are the most significant. Mishkin (1997) also mentioned that apart from liquidity risk, bank panics also originate from information asymmetry. Depositors panic over the wellness of a bank and rush to make withdrawals (bank runs). If bank runs occur and a bank does not have enough capital to protect itself, it faces bankruptcy. Mishkin (1997) emphasises that bank panics result in the "increase of adverse selection and agency problems in the financial market" which can lead to a financial crisis. This causes a rise in the interest rates and the subsequent contraction of an economy.

Over the years, risk trading has become increasingly popular with the banks. Risk trading under poor to no regulatory supervision is another way that banks have created financial crises. This happened just before the 2008 financial crisis and was triggered by the fall in interest rates which increased the demand for credit or loans (Posner, 2009). With the increase in the demand for

loans, banks took less care in vetting borrowers and started granting bad loans. This was worsened by the loose regulatory restrictions on banks' risky lending. One of the biggest risks that a bank could face is default risk and since banks are funded largely on deposits that can be taken back at any time, in the case of loan defaults, a bank will be left less liquid and vulnerable to panics.

With the increase in the amount of money in circulation, because of the loans, there was an increase in buying and building houses, which contributed to a housing bubble. Posner (2009:47) raises the point that the low interest rates are attractive not only to the borrower but the lender as well. The lender (banks) can utilise the situation to increase their leverage and thus increase profits. Therefore, they in turn choose to increase the amount of deposits they take in (borrowing) rather than increasing their capital base. However, if by any chance the banks make even a small loss on the loans they give out (defaults may occur as well) then this would leave the bank vulnerable to bankruptcy through a panic.

During the housing bubble of 2007, banks started to raise their capital by issuing securities that were backed by the mortgage loans that they had been granted. Such risk taking is the reason why banks contributed heavily to the financial crisis, because when the mortgage loans were defaulted, they were left with no capital to cover them when the bubble burst and it created a panic(Posner, 2009:49). Therefore, high leverage, coupled by low liquidity (being financed through borrowings and making long term mortgage loans, left the banks with illiquid assets) and high risk trading became some of the major reasons for the banking crisis that caused the 2008 financial crisis.

Regulation of the financial sector has been loose since the 1980s, and this together with banks' risky behaviour discussed above, have led to advocating for the need for tight regulation on banks and the financial sector.

2.5 REGULATION OF BANKS

Financial crises have existed alongside banks for a long time and thus monitoring of these institutions has since become a major goal. Regulation in general has not always been as strict as it is today, as Larson (2011:5) notes that countries were left to implement regulatory measures as they deemed fit for their financial systems. However, with the rise of globalisation and the rise in major risk trading by banks, this subjective view to regulation changed as the failure of one financial system meant many more would also fail. This was mainly shown by the fall of some major banks in Europe in 1974 which affected the international financial market as a whole. This

meant that banking and financial regulation became a necessity rather than an option and had to be at an international level.

Banking systems started to really grow and show their potential towards the end of the 20th century, around the 1980s. It has been argued that as much as it was a bad idea, deregulation of the banking and the financial systems in many countries following the United States from the 1970s to the early 1980s is one of the reasons why the banking system grew. Sprong (2000) argues that the idea behind deregulation was that with fewer regulations, which acted as barriers to entry for many smaller banks, there would be more productivity and industry effectiveness as more competition would have been introduced. As much as this worked to some extent, it also proved to be disastrous, as the 20th century is the period that some of the major banking and financial crises started. Sprong (2000:30) also states that during this period, over 1000 banks in the United States alone failed or were about to fail and needed the assistance of the government. This is also the period in which regulation of the banks began.

Banks had grown so much that the risk they posed to global economic development was too great. With deregulation, banks were allowed to trade in securities that were volatile in nature and which left them with no liquidity buffer in case of runs occurring. Deregulation was therefore phased out towards the end of the 1980s and this is also the time that the Bank of International Settlements, through the BASEL Committee proposed a set of regulations that banks had to follow (BASEL I), which was in 1988. Other sets of regulations were to follow as the first one did not prevent the crisis that occurred in the early 1990s.

2.5.1 BASEL I

The 20th century became part of the history of bank and financial crises, with the 1974 stock market crash and the 1982 Chilean crisis that saw many banks fail and many more being bailed out, which almost resulted in government defaults. This and many more scares called for a tighter grip on banks and the United States raised the need for an international standard capital requirement for banks. Therefore, the BASEL Committee which had been working on this issue for many years were brought in to help (Goodhart, 2011:5).The Basel Committee on Banking Supervision had been formed in 1974 but it was not until 1988 that the Committee proposed their first set of regulations that banks had to follow, i.e. the BASEL I Accord.

The BASEL I Accord had a set of regulations that were not legally binding but were mere suggestions on how banks could operate and avoid failures. As it had been in the 1970s to early 1980s, the need for banks to hold more capital was still the major focus of the Committee. The fear was that many international banks were taking lightly the need for holding high levels of

capital by engaging in risky activities which left them with more liabilities than their assets and therefore left them susceptible to shocks. With this in mind, the Committee proposed that by 1992, all banks should have a minimum capital adequacy ratio of 8% (BIS, 2013).This ratio represented the back up on the banks' assets, and Jablecki (2009) states that this recommendation was developed with a view to improving risk management. This would ensure that in the case of a shock to the financial or the banking system, the banks would be able to withstand the shock and avoid bankruptcy. This therefore set up the foundation for strict banking regulation and the Accord was slowly implemented by many countries around the world.

However, there was a flaw in the BASEL I Accord as the capital requirement proposal the Committee had recommended the banks to follow meant that banks could manipulate it so as to engage in arbitrage activities and thus raise their leverage levels which later proved to be disastrous (Jablecki, 2009:19). This therefore prompted the banks to begin trading risky securities so as to manipulate their capital structure, thus opening up doors to what Dowd *et.al* (2011) called "the securitization bonanza of the last two decades". Thus, the Capital Accord is often blamed for this and is regarded as one of the weaknesses of this Accord. The other problem that the Committee did not take into account beside the hedging strategies that banks had at their disposal, was the different setting of the economies globally. The Accord was adopted on a "one size fits all" approach which obviously would not work. Balin (2008) states that the Accord was not initially meant to be implemented in developing countries but with the pressure from international trading partners, the Accord was tried out in the emerging markets and was not successful. The move to an improved regulatory framework was imminent especially because of the banking crisis of the 1990s which came at the end of the 20th century.

2.5.2BASEL II

Proposed in 1999, the new capital framework later known as the BASEL II Accord was implemented in 2004. Although BASEL II maintained the capital framework of the previous Accord, it mainly focused on minimising the risk that the banks were creating through securitisation. Therefore, the Committee added more kinds of risks banks had to consider, which included credit risk, market risk and even operational risk; with operational risk being included in the 8% capital requirement as well (Hussain *et.al,* 2012:151). This new Accord, designed to be implemented over some time, was meant to be more risk sensitive and also took into account the different financial systems of individual countries, which the first Accord had missed. The Committee also gave the regulators in the different countries the freedom to choose a method to calculate capital adequacy while adopting the best risk management policies that would best fit

their systems so as to ensure the effectiveness of the Accord in reducing banking risk.The Accord had three pillars, namely the Minimum Capital Requirement, Supervisory Review Process and Market Discipline. The first pillar was meant to strengthen BASEL I while the other two pillars were meant to add more value to the innovation of risk and capital management (BIS, 2004).

The first pillar was the Minimum Capital Requirement (also known as the solvency ratio)and dealt with the calculation of the capital requirement and regulatory capital, now also included operational risk and not just credit risk alone as in the first Accord. The new Accord still prioritised capital as the most important control ratio because capital is the main buffer that prevents the banks from making losses or going bankrupt (Balthazar, 2006).According to CML (2013), the addition of the other types of risk in the new Accord was meant to ensure that lenders seriously consider a culture of risk management in their organisation up to the highest managerial level. The Committee proposed two complex ways of calculating credit risk and these were the standardized approach and the internal rating based (IRB) approaches which were meant to act as incentives for banks to be able to choose the best innovative way of risk managing.

The second pillar, the Supervisory Review Process mainly dealt with the internal controls of the banks, that is to say how they operated. The Accord required the banks to have interior structures that would incorporate the levels of the capital requirements and the risk profiles that the Committee had set up. The internal system of the banks also needed to be innovative so as to incorporate some types of risks that were not laid out by the Committee in the Accord (Balthazar, 2006:46). According to BIS (2004), as soon as the bank supervisors are done evaluating the bank's internal structure, they should then decide whether it is necessary for the bank to hold more capital which is above the required 8%; thus making this pillar very flexible. However, these supervisions were subject to external review or intervention where necessary.

The last pillar, Market Discipline, was about transparency and disclosure. This required banks to report their internal risk and capital management processes and these would later be published regularly to the benefit of the public (market). This level of transparency would give the consumers better insight into the banks before doing business with them. This would also allow them to reward the banks whose books were in order by doing business with them and, by doing

so, giving the banks a bigger incentive to incorporate better risk profiles that would better attract customers (Balthazar, 2006).

BASEL II was originally designed for the active banks but proved to be implementable on other banks as well. This new Accord was also flexible and not only allowed banks to adopt systems that they felt comfortable with but also allowed them to be innovative in choosing the best risk profiles. With the addition of operational risk and the second and third pillars, risk management became the main focus, thus providing a promising future for the banks internationally. Another benefit that the Accord brought was that of transparency which improved the need for banks to adopt more efficient risk profiles so as to attract more customers (Makwiramiti, 2008). This meant that risky trading had been minimised and therefore the chances of banks failing because of risk trading had also been minimised.

However, with these and more benefits that the BASEL II Accord introduced, one of the biggest financial crisis ever experienced still found its way into the world financial system in 2008, and the banks bore much of the blame. This therefore brought about concerns about this Accord and if its main objective of minimising banking risk had been achieved. Thus, the failings of BASEL II prompted the need for BASEL III.

2.5.3 Shortcomings of BASEL II

BASEL II was an improvement from the first Accord of 1988 and had many benefits, some of which were briefly mentioned in the previous section. However, despite the improvements, in 2008 the world was brought to its knees by the global financial crisis. What critics were quick to point out as a weakness in the structure of BASEL II was the amount of freedom that the banks were given. As mentioned before, the Accord gave the banks the ability to choose the best methods of calculating risk and it also gave them the leeway to be innovative. According to Balthazar (2006:46), as much as this may have been beneficial, so much flexibility would give the regulators "too much subjectivity, which could undermine the level playing field objective". Many regulators have discovered that as much as it is beneficial to give banks the liberty to make their own risk modelling it also makes it very difficult to distinguish between the high from the low risk banks. Therefore, regulators found it difficult when it came to figuring out who had high or low leverage ratios before the crisis. Thus, although flexibility was devised with the best

intentions, it proved to be a deciding factor in failing to prevent the crisis because identifying high risk from low risk banks is very important.

The BASEL II Accord has been criticised for making banks function in a more pro-cyclical manner which resulted in the amplification of economic recessions (Balin, 2008). As Dowd *et.al* (2011:22)argue, "capital requirements should be anti-cyclical" and the pro-cyclical nature created by the Accord resulted in the illusion that when an economy is booming, the market is less risky; therefore investors could engage in more trading that may also be more risky. The rise in the need for investment also elevates the need to borrow and so lending by banks also increase. With the rise in lending, the risks that the banks carry become high as they tend to have high leverage as well. Banks would also need less capital to recover risks when the economy is booming; therefore they become careless and keep less capital to the extent that when the economy goes into a downturn, they do not have enough capital to cover losses as it is during the downturn that most loan defaults occur (Hussain *et.al,* 2012). On the contrary, the Accord should have been able to prevent a situation where the financial system becomes unstable, especially when the market fails (a market crash) but with the creation of a pro-cyclical environment this would not be likely. In addition to the pro-cyclical problem, the Accord also caused systematic volatility; that is it made contagion worse. The fall of one bank meant that the whole system would be affected because all banks were following the same BASEL principles. This would be made worse under poor risk and poor regulatory management.

Another criticism of the BASEL II Accord was its over-reliance on rating agencies to assess the risk of market participants which caused problems for the banks and the whole system. Since not every firm or market participant could afford the services of the rating agencies, this created a huge information asymmetry problem. The lack of such crucial information resulted in banks issuing bad loans which exposed the banks to shocks (Balin, 2008:15). The other problem which reliance on the agencies created was the competition they created amongst themselves for clients. This rival resulted in most of them allegedly taking bribes to falsify ratings when investors would have preferred honest ratings; thus the information available for the banks was biased (Dowd *et.al,*2011:20). This problem was also exacerbated by the fact that the banks and the corporations could choose the agency they wanted to rate them, leading to lack of objectivity.

BASEL III did not fix the problem of "regulatory arbitrage" (Dowd *et.al,* 2011). Just like its predecessor, it was also an open book and was vulnerable to manipulation by the financial

institutions. Banks would use the rules of the Accord to their advantage so as to make short term profits. This meant low capital ratios, low liquidity and very high leverage in the banks' books leaving them vulnerable to shocks. Regulatory arbitrage is the reason there has been a high growth in securitisation and high risk securities' trading. Securitisation has a very high risk of failing as very low quality and recycled assets which carry a high risk of default are used as capital. This leaves the bank vulnerable to shocks. Furthermore, securitisation puts risk in one place rather than distributing it.

The other major disappointment of the BASEL II Accord was its failure to cater for the emerging markets. It was tailor made for the developed G10 countries and not the emerging markets and despite the fact that the BASEL Committee made some extra principles that would only fit the emerging economies, this did not give any relief to these markets since the world only recognised the BASEL principles as the appropriate regulatory standards, therefore, business preference would only go to those that were implementing the BASEL II principles. This left the emerging communities with no choice but to implement these principles as well and, as a result of the effects of globalisation (contagion), many of the emerging markets also felt the effects of the crisis. Since the Accord heavily relied on the rating agencies, the business of the banks would thus be dependent on the level of rating the agencies gave them. Since these agencies are expensive many small banks in the emerging markets could not be rated, thus worsening the contagion situation (Balin, 2008).

Therefore, as a result of all these and other shortcomings of the BASEL II Accord, there was a need for new and revised regulatory principles. This brought about the introduction of the BASEL III Accord which was meant to be more efficient than the previous two Accords. However, some literature suggests that the failure of BASEL II cannot be entirely blamed for the outbreak of the financial crisis, especially since the crisis started in the United States which had not been implementing the Accord. However, BASEL II escalated the problem especially for those countries that had implemented it as it failed to protect them from the effects of the crisis as had been expected.

2.5.4 BASEL III

As indicated above, BASEL II seemingly failed in its quest of making the banking system risk free and ironically gave banks the freedom for innovative ideas to make more short term profits, which consequently rendered the system even worse. The very high leverage ratios, the inexplicably low capital and liquidity ratios within the banks' books left them vulnerable to

shocks and bank runs. This, with no doubt, contributed to the failure of the many banks in 2008 and the outbreak of the financial crisis that hit the world's financial market (BIS, 2013). Therefore, the global community needed better regulatory principles that would make sure that banks kept more capital, engaged in less riskier activities and were liquid enough for the preparation of adverse times to come. However, it is worth mentioning that even before the collapse of the Lehman Brothers (first victim of the 2008 financial crisis), the Committee had already realised the need to improve the BASEL II Accord. Although it was too late, in 2009, the Committee introduced a set of principles that would later be known and BASEL 2.5. These were the "Principles for sound liquidity risk management and supervision" and were meant to strengthen BASEL II. These principles were among others that were proposed so as to make the second Accord better at dealing with the growth of the risky trading (securitisation) that was threatening the efficiency of the banking system (BIS, 2013).

The new Accord was announced in 2010 and, as its failed predecessor, was meant to be implemented over time (in phases) but was stricter especially now that the Committee had seen how far banks were willing to go to increase their short term profits. Kohli *et.al.* (2013) argues that in addition to the three main concerns of capital, leverage and liquidity; the Committee also added one more factor that the Accord would be focusing on, and that was capital funding. The Accord would be rested upon three main pillars which would help foster the way forward for the crippled financial system and help prevent a disastrous phenomenon like the 2008 financial crisis from happening again. The 2008 global financial crisis had illustrated that banks were surviving on the knife edge especially when it came to capital holdings. Not only did the banks, prior to the crisis, have small amounts of capital, but it was of poor quality as well.

Pillar 1 was the Minimum Regulatory Capital Requirements based on Risk Weighted Assets (RWAs). This maintained capital being calculated through credit, market and operational risk areas. It would cover the issues regarding capital, risk coverage and leverage (Goyal, 2013; BCBS, 2013). Therefore, the first issue that the new Accord laid out was the new definitions of capital which was meant to improve the transparency and the excellence of the capital base (BIS, 2013:14). BASEL III redefined capital to exclude the third tier that was present in the previous Accord; therefore there were now only two tiers of capital that would make the total regulatory capital. Tier 1 would include common equity and additional tier 1 capital. Under the common equity, only common shares that would fit well within the properties of regulatory common shares would be permitted to be part of capital, e.g., ordinary shares. The additional tier 1 capital included financial instruments, and regulatory adjustment calculations that would best fit the quality criteria, just as the Accord had proposed.

Tier 1 also included surplus of stocks that would have resulted from the sale of shares by the bank or the firm, i.e., the share premium. Furthermore, accumulated revenue from any other activities that would fit the quality criteria, such as retained earnings and as well as reserves, would fall into this category of capital. The issue of quality of capital could not be stressed enough as tier 1 was surely meant to make sure that this goal was reached. Tier 2 would then have other capital sources that would include certain loan losses and the other instruments that would meet the quality criteria (PWC, 2011: 7).

To help with the calculation of the capital as per the two tiers, the capital adequacy ratio was reinforced. Otherwise known as the capital to risk weighted asset ratio, it measures a bank's capital in relation to risk exposure and assets. It is therefore a ratio of the sum of the tier 1 and 2 capital with the risk weighted assets (BIS, 2012), as shown in Equation 1 below:

$$\text{Capital adequacy ratio} = \frac{Tier\ 1\ capital + Tier\ 2\ capital}{Risk\ weighted\ exposures} \quad \textbf{(1)}$$

where the risk weighted exposures are determined according to what the BASEL Committee set down as assets for banks. Tiers 1 and 2 have been defined above. For a bank to stay solvent and avoid the risk of a declining value of assets, therefore keeping it efficient, it has to be positively capitalised, with the value of its capital exceeding its liabilities. Hence, under BASEL III, capital adequacy ratios were upgraded (BCBS, 2013: 4). Larson (2011) states that since banks make loans by accepting deposits, which are liabilities, a high capital base would protect the bank in the case of a bank run. The capital adequacy ratio was also meant to improve the solidity and proficiency of the banking and financial systems by making sure that the banks would always be able to absorb losses and stay solvent. Therefore, low capital adequacy would mean a bank would be able to absorb less losses before it becomes insolvent (RBNZ, 2007: 2).

Apart from the definitions of capital that were laid out in the new framework, the Committee decided to exclude a number of previously used capital sources that they deemed risky. These included goodwill and other intangible assets, investments in the instruments that made up part of tier 1 capital, deferred tax and many others (PWC, 2011). After these deductions, the minimum equity that would make up the capital requirement was raised to 4.5% of all risk weighted assets (BCBS, 2013). This was meant to strengthen the quality of the capital that the banks would be holding at any point in time.

BASEL III did not only define capital but also introduced two capital buffers. These were meant to protect the banks during times of an economic downturn. The first capital buffer, the capital conservation buffer, was meant to absorb bank losses during times of financial stress. Banks

were required to hold or build capital buffers that comprised common equity of 2.5% of the risk weighted assets outside times of financial stress so that when the economy was not performing well, the buffer would act as a cushion (BCBS, 2013). Banks were allowed to draw from the buffers during the periods of financial stress, but then were also obliged to make sure that this buffer was always replenished. This could be achieved through cutting back the distribution of earnings to dividends, for instance, and / or raising more capital (under the right recommended regulations) from the private sector (Lekatis, 2011). To enforce the conservation buffer even more, the Committee proposed that banks that would have their capital levels fall beyond the capital buffer be given punitive regulatory measures or fined.

The second capital buffer, the countercyclical buffer, was introduced to protect banks from the harsh natures of the economic cycles, the effects of bubbles bursting and the negative consequences of the risky trading banks often take part in. Just like the conservation buffer, the countercyclical buffer would also be built up during times of non-financial stress and then released when the economy was not performing well. The buffer ranges from 0 to 2.5% of the risk weighted assets and the failure of a bank to follow the rules of the countercyclical buffer would result in penalties on the guilty bank (BIS, 2013: 25).

As mentioned earlier, Pillar 1 also covered the issues of risk coverage. BASEL II, as noted before, caused the rapid increase in the rate at which banks were risk trading which resulted in risky securitisation. This ultimately resulted in many banks adopting high leverage conditions. BASEL III was designed to have a limit on securitisation and therefore requires banks to do more thorough credit checks when it comes to securitisation exposures (BCBS, 2013). The new Accord also requires extensive regulation on the other instruments that banks trade in which may include derivatives and other over the counter instruments. These are very volatile, especially derivatives, and therefore require a good amount of capital to back them in the case of losses from defaults. As much as defaults go, the Committee suggested that banks not only make thorough credit checks on clients but also reinforce the management of the counterparty credit risk framework (BIS, 2013: 28). This was meant to avoid a situation like the one that affected banks in the 2008 financial crisis when they failed to recover from the high amount of defaults by many loan takers. Therefore, the Committee suggested that additional capital be set aside as a charge for losses that would ensue from the trading of risky instruments and the defaults of loans.

Of focus again under the first pillar was the issue of bank leverage, which is the extent to which a bank finances its assets through debt rather than equity, since the former is a cheaper source of

finance. While high leverage can lead to higher profits for banks, it can lead to increased losses and erode a bank's capital during unfavourable conditions, as was the case during the 2008 crisis. A situation of very high leverage also requires that the assets generate returns sufficient to cover the cost of debt finance. If the return falls, which may be the case in times of financial stress, high leverage becomes problematical (BCBS, 2014: 1). The problem would be initiated with banks continuously granting bad and / or unsecured loans and a bank run would lead to insolvencies (D'Hustler, 2009: 1). High leverage is regarded as a major contributor to the 2008 crisis, and the BASEL Committee accordingly proposed a "non-risk based leverage ratio to supplement the risk based capital framework of BASEL II".

The leverage ratio is measured by dividing the bank's capital by its total exposure (BIS, 2012),as shown in Equation 2 below:

$$\text{Leverage ratio} = \frac{Capital\ measure}{Exposure\ measure} \quad \text{.....(2)}$$

The BASEL Committee defined the capital measure as Tier 1 capital and the exposure measure as the aggregation of four components, namely the banks' on balance sheet exposures, off balance sheets exposures, derivative exposures and securities financing transaction (SFT) exposures; which are basically total assets. The main difference between the leverage and the capital adequacy ratios (see Equation 1) is that the capital adequacy ratio includes only the risk weighted assets (exposures) while the leverage ratio's denominator is total assets. It is also expected that in time the leverage ratio would replace the capital adequacy ratio as the main measure of risk which regulators would prescribe. The BASEL Committee's current proposal for the ratio is that it should be at a minimum of 3% which countries can deviate from if they feel they need to be stricter on the banks (BIS, 2012: 32; BCBS, 2014).The implementation of the ratio is dealt with in more detail in Chapter 3.

However, the Committee proposed the leverage ratio as a non-binding requirement, and as a suggestion that banks could implement with time under regular supervisory advice(BIS, 2012: 32). By 2017, a bank would also be required to give a detailed account of its leverage ratio: along with the process of leverage risk management, the factors that affected the leverage ratio and the measure used to calculate the ratio. Total disclosure of the banks' books is one of the main issues that the new Accord was meant to attain so that clients would measure the riskiness that a bank has before banking with it. It would also provide the regulators with a good insight into the financial soundness of the banking system and make sure tighter regulation is implemented if necessary to prevent a banking system failure.

The implications this ratio will have on banks has been the subject of debate between the international banking community and the BASEL Committee. The Committee responded to this by amending the requirements in 2014 to make the requirements more accommodative of banks activities. According to Scheepers (2014), the leverage ratio will lower banks' profits as the assets that would be required to be deleveraged affect profitability. As sources of capital are now limited, the higher cost of capital would also mean a lower return on shareholders' returns. This can have the consequence of lowering investment opportunities for banks. The leverage requirements will also mean that banks will have to incur additional costs for the complete implementation of the ratio as there is additional reporting that is required and as well as extra auditing by external auditors. These and many other possible negative effects of the leverage ratio on the banks were the concerns that were raised to the Committee.

Pillar 2 of the BASEL III Accord was dedicated to risk management and the supervision of the banking system. The idea was to reiterate the issues of securitisation and risk exposure and the fact that tighter risk management tools were required within the banks. Better risk management tools were to be attained through appointing qualified and readily available supervisory teams, good corporate governance, constant risk testing, well managed accounting practices as well as full disclosure (BCBS, 2013). The importance of risk management could not be stressed enough, especially for those banks that could not resist trading under high risk conditions, i.e. those that would trade with very high leverage ratios. It had been noted that many weaknesses within the banks that included poor risk management tools resulted in major financial stress; therefore it was paramount that these issues be addressed in the new Accord (Rutledge, 2009).

Pillar 3 laid down the market discipline requirements and this was a meant to strengthen the regulatory stance on securitisation and risk trading. Market discipline also covered the area concerning disclosure of the banks' books and the activities that they would be engaged in. The Committee argued that market discipline would give the banks the incentive to strengthen capital regulation so as to make the system more efficient and could also give the supervisors towards the need to make the banking and the financial system less vulnerable to shocks. Therefore, the main purpose of the third and last pillar was to compliment the first two pillars by requesting banks to make certain disclosures so that the market could assess their riskiness before getting into business with them. Such information is collectable within the bank, therefore not only making it easy to disclose but less costly as well. This was the other incentive that the Committee created for the banks so as to encourage disclosure (BIS, 2001).

Despite having defined the three main pillars for BASEL III, the Committee still believed that the lack of high and good quality liquid assets was one of the many problems banks experienced that had led to most of them failing in 2008. Therefore, apart from the three pillars, the new Accord has a section that deals with the liquidity standards and supervisory monitoring. Liquidity is the ease with which a bank can convert its assets into cash. The BASEL III Accord introduced ratios to help in the calculation of bank liquidity. It covers two liquidity ratios; the Liquidity Coverage Ratio (LCR) and the Net Stable Funding Ratio (NSFR).

The LCR requires banks to hold high quality liquid assets. Since banks issue loans which make up part of their assets, loan defaults would mean they are no longer liquid; therefore, high quality liquid assets would prevent bank failure in times of financial stress (Bouwman, 2013: 1; BIS, 2013: 4). The LCR would not work on its own to monitor the bank's levels and quality of liquidity but the Committee believed it had to be supplemented by high supervisory assessments and a good liquidity management framework. This liquidity ratio is therefore given by the ratio of high quality liquid assets (HQLA) to total net liquidity outflows. Under the new Accord, the liquidity ratio is expected to be more than 100% as shown in Equation 3 below (BCBS, 2013: 7).

$$\text{LCR}=\frac{Stock\ of\ HQLA}{Total\ net\ cash\ outflows\ over\ the\ next\ 30\ calendar\ days}\geq 100\% \quad \textbf{(3)}$$

High quality liquidity would ensure that during the times of financial stress, a bank could be able to meet its liabilities with ease for a period of no less than 30 days; thereafter other measures would be taken (BCBS, 2013: 4).

The BASEL Committee did not only advocate for more capital but also for good quality capital. The aim of the NSFR is to ensure that banks always have high quality and more stable bases of funding or capital (BCBS, 2014: 6). It is defined as the ratio of the available amount of stable funding to the required amount of stable funding and at all times should be above 100%, as shown in Equation 4 below:

$$\text{NSFR}=\frac{Available\ amount\ of\ stable\ funding}{Required\ amount\ of\ stable\ funding}\geq 100\% \quad \textbf{(4)}$$

Just like the LCR, the NSFR is also supplemented by high supervisory assessments and a good liquidity management framework. The Committee argued that for many banks during 2007, despite having enough capital, they had poor liquidity management tools which also contributed to their failures in 2008. Therefore, the NSFR aims at also strengthening the liquidity management tools that banks have in place, thus demonstrating the importance of liquidity as a supplementary tool in avoiding bank failures (BCBS, 2014; Sheng, 2013).

2.6BASEL III POLICY DIRECTIONS

In 2010, the Committee set up the Long-term Economic Impact Group (LEIG) which was meant to assess the long term impacts of implementing the new Accord. The LEI estimated the long term benefits and costs of implementing BASEL III and discovered that BASEL III did lower the probability of the occurrence of a financial crisis and that this also results in boosting of the economy. To assess the impact that BASEL III was to have on the economies, the Committee set up the Macroeconomic Assessment Group (MAG). Although the MAG concluded that the macroeconomic costs of implementing BASEL III would be minimal, they did find out that there would be a steady increase in the bank lending rates; consequently lowering the demand for credit and this would in turn negatively affect the economy (Aosaki, 2013).

However, the effects that the new Accord will have on countries would vary. Factors such as the size of the banking sector in relation to a country's GDP, a country's past and current macroeconomic condition, each country's regulatory framework and the difference or gap between current ratios and the ratios that are required by BASEL III; would determine the extent to which and how a country and its banking system is affected by the implementation of the new Accord. For instance, regarding the ratios, the closer a bank's ratio levels are to the required levels, the lesser the changes it has to go through to accommodate the implementation of BASEL III and therefore the impact of the new Accord would be minimal. This is despite the fact that every bank at any time will have to raise more capital on the recommendation of the regulators (Aosaki, 2013).

On the other hand, the impact of the new Accord on the emerging markets is another issue that has been of great interest to many economists and to which a lot of literature has been dedicated. The major concern is that the one size fits all policy still exists in the new Accord and this may have major problems for the developing nations. Blundell-Wignall and Atkinson (2010) argue that when BASEL III was developed, the main concern the regulators had was in regard to Europe and USA; therefore the recommendations were meant to fit into these systems and not the developing ones. Therefore, implementing the BASEL III Accord in the developing markets would be costly, thus limiting economic growth in these countries. Of particular concern is the LCR which requires banks to hold high quality liquid assets. These include high quality government and corporate bonds. The problem with these is that they are not readily available in the developing nations and non-existent in the Islamic markets, making them expensive to acquire (Blundell-Wignall and Atkinson, 2010).

For banks, the requirement to hold more high quality liquid assets would mean that since the costs of acquiring these assets are high because of their scarcity, the overall profitability of the banks will be negatively affected. Nevertheless, the introduction of this new LCR requirement will also reduce the vulnerability of the banks during economic down-turns by improving their stability. Under the liquidity ratio is the NSFR that will require the banks to strengthen their sources of funding and this again would not only raise the costs of capital but reduce their profits as well. It is also argued that the much stronger and better funded banks that can afford the higher costs of funding will then be able to influence the market lending rates, thus driving the smaller banks out of the industry and creating a barrier to entry for the other potential banks, and thus ultimately reducing the levels of competition within the industry (KPMG, 2011: 9). Lack of competition would most probably reduce efficiency.

The increase in the capital adequacy levels also poses problems for the banks as it may consequently reduce their profits and the benefits their shareholders may get in the form of low dividends. To add to the problems, since capital was redefined to exclude most of the easier and less costly sources, the costs of raising capital have not only risen, but the "flexibility of the national regulators to allow certain instruments to be included in as capital" has been limited, making regulation harder (KPMG, 2011: 9). The increase in the costs of acquiring capital also means that the banks are well justified to increase their lending rates. This would have major long run negative effects on the economy, in particular the demand for loans to finance new investment (Auboin and Blengini, 2014: 3). There is also the concern that while the increase in capital adequacy is meant to bring stability and reduce the risk in the banking sector, it may actually be the source of more banking risk. The argument is that as much as tighter regulation may be advantageous, it may cause banks to act irrationally because as regulation tightens, banks' profits fall and this would leave them with nothing to lose when faced with bankruptcy. Banks therefore have the incentive to increase their risk mostly because under tighter regulation, "the marginal return on risk is increased" (Blum, 1999: 756).

However, these and many other negative implications that this new Accord might have on the economy and the banking systems of the developing and the developed countries should not overshadow the many benefits that it is meant to bring. Although the taskforces that were assigned to investigate the future implications of BASEL III found some negative effects, they also realised that the long-run benefits of the new Accord would cover the costs incurred when implementing it. This is because BASEL III reduces the occurrence of financial crises by a high proportion and it is important to note that financial crises have long term negative effects on economies. With financial crises eliminated, the economies have the flexibility to grow without

any entanglement. (Aosaki, 2013). BASEL III does not only have regulatory requirements for banks alone but for all the financial lending firms that do almost the same business as banks known as shadow banking. While it has been argued that banks were at the centre of the 2008 financial crisis, it is worth noting that it was not only their actions that resulted in the fall of the global financial system but also actions of other financial firms as well. Therefore, a strong regulatory framework that BASEL III proposes for the banks and financial firms would make the financial system more efficient. Keeping in mind the fact that this Accord is being implemented over a period of time, it is only time that will objectively spell out its benefits and shortcomings.

2.7 CONCLUSION

This chapter has given some insights into the development of regulation and supervision of the banks and the financial sector by analysing the three BASEL Accords. The shortcomings of the two earlier Accords were also analysed and the reasons for the creation of new regulations identified. It has also been concluded that although there are possible shortcomings to the implementation of the new Accord, the long term benefits will overshadow its implementation costs. However, the impact that BASEL III will have on the developing countries is still to be explored and the next chapter will bring that to light. Chapter 3 will focus on the evolution of regulation, the implementation of BASEL III and possible implications in South Africa, Brazil and China while also investigating the existence of regulatory alignment amongst these BRICS trading partners.

CHAPTER 3

HISTORY OF BANK REGULATION, IMPLEMENTATION OF BASEL III AND REGULATORY POLICY ALIGNMENT BETWEEN SOUTH AFRICA, CHINA AND BRAZIL

3.1 INTRODUCTION

The BASEL III framework is meant to be implemented in phases over the period 2010-2019. Therefore, it is crucial that the execution of these regulatory standards be done in a consistent manner so as to improve the global banking system. This long phase in applying the new Accord is meant to limit the transitional costs of the implementation that may negatively affect economic growth. The long-term phase in timeline will be dealt with differently from region to region, however, the BASEL Committee still set up a Regulatory Consistency Assessment Programme (RCAP) which will monitor that the standards are implemented timely and effectively as well as to report the progress to the Committee (BIS, 2013: 1).

In terms of the manner of implementation and timeline, the BASEL Committee divided countries into two distinct groups and these are the member and non-member countries. According to Aosaki (2013: 9), the member countries are the ones required to follow the timeline stated above with capital regulation starting in 2013 and expected to be fully phased in by 2019. The non-member countries on the other hand are not required to make the implementation of the new Accord their main priority in terms of strengthening their banking regulation. The introduction of BASEL III will also be affected by the level of economic development; therefore, the implementation of the Accord will differ between the developed and the developing countries. De-Krivoy (2000: 114) states that the economic and financial restrictions faced by any country influence the pace at which it implements international standard regulations. This therefore means that any standards to be implemented have to be phased in gradually and with care.

3.2 BANK REGULATION AND BASEL III IN DEVELOPING COUNTRIES

The rapid growth of the banking sector and the development of globalization over the years has made it a global priority to make regulation of the financial and the banking sectors robust. This is because the more a country depends on the outside world, the more it feels obliged to implement and abide by the proposed international regulatory standards. Therefore, the developing world is no exception to this and, as literature points out the need for tight regulation in the developing world has grown ever since most developing countries have started embarking

on a quest of financial liberalization. Financial liberalization has been viewed as a way of improving the efficiency for the financial markets and also boosting economic growth through free capital flows (Klomp and Haan, 2013: 2). This has therefore facilitated the growth of the banking and financial sectors and has increased the vulnerability of the emerging markets to contagion. The rise in such concerns and the lessons that have been learnt from past errors has also, over the past decade, led to the rapid progression of financial and banking regulation in the developing countries through the many changes in the laws that govern these sectors (De-Krivoy, 2000). The developing countries have therefore, for many reasons, managed to improve the way they supervise their financial and banking sectors.

Any policy reform brings with it some challenges and when it comes to the developing countries, these challenges have been many. De-Krivoy (2000) argues that the greatest challenge that the developing countries face when attempting to make their financial systems more sound is effective implementation of the regulatory policies. Regulatory effectiveness encompasses a number of aspects that the regulatory agents should take into account; and these include the availability of resources (human capital, information and funding), flexibility of the laws, the integrity of the regulators and the government itself, and above all the political will of the government (Makhaya, 2002). These and many other aspects that have to be considered when making an effective regulatory policy in the developing countries, have contributed to the many challenges that these countries face. It has also been argued that despite having improved regulatory-wise, developing countries still face regulatory difficulties as many of the policies that they are forced to implement have been designed mainly for the well developed countries and this one size fits all policy makes it very difficult to achieve pure regulatory efficiency. These frameworks suit the developed countries well because they have the required resources, the skilled financial supervisors, stable economies, political stability, or in other words the means to implement the policies. These are resources that the developing countries lack immensely (Brownbridge and Kirkpatrick, 2000).

The possibility of implementing BASEL III in the developing countries has therefore been a debatable subject. Many banks in the developed countries have asked for more flexibility and more time to implement the new Accord. This is ironic for it raises the question of what banks in the developing countries would then want, considering that they have less than enough resources to effectively implement the new regulations as compared to their counterparts in the developed countries. As far as the emerging markets are concerned, it is important to note that there are countries within this group that have developed more than others. In some of the countries, like China and Brazil, consumer confidence on the soundness and efficiency of their

banking systems is higher compared to some developed countries like the USA and the Euro. However, this doesn't mean that the implementation of the new Accord in these countries is going to be smooth, because despite improved credit worthiness and improved bank soundness, many impeding factors are still to be considered before trying to implement BASEL III in the developing countries (Valladares, 2012).

3.2.1 Bank regulation in South Africa

The South African banking system has grown to be one of the well regulated, efficient and well managed, not only in Africa but the world as well. Over the past two decades, the system has become more efficient through effective legislation and technological advances. South Africa boasts one of the largest financial systems in the world and as such has been no stranger to the effects of the volatility of the financial sector. Lessons from the failures of the financial and banking sectors in the 1990s have led to the current strong grip on regulation (BASA, 2012). While many countries have taken the responsibility of bank regulation away from their central banks and placed it in the hands of the government or private regulators, South African banking regulation is still a function of the central bank. While the law does not prohibit anyone from lending funds, it only recognises banks as the deposit takers. In the event that the deposits the banks take are used irresponsibly, there is a high chance that the depositors will lose their savings; therefore the South African Reserve Bank (SARB) focuses on the principle of protecting the depositors and views this as one of the main reasons why banks should be supervised (SARB, 2014).

The SARB has created a division that is mainly responsible for bank regulation, which the Bank Supervision Department (BSD). The main aim of the BSD is to help to achieve financial stability by, *inter alia*, advocating for a sound banking system. According to SARB (2014), the BSD works on the following international principles:

- *The 29 Core Principles for Effective Banking Supervision (the Core Principles) as published by the Basel Committee on Banking Supervision (BCBS); and*
- *The Basel II, Basel 2.5 and Basel III frameworks, which are widely regarded as the de facto standard for supervising banks.*

These and other principles have helped to foster in the constant improvement in the supervision of banks and to attain the main goals of the department (a sound banking system) as South Africa's banking system is now ranked 2nd out of 144 countries for soundness (BASA, 2012). The supervision of the South African banking system rests on a set of legislative laws that have been put into tiers as follows:

Tier 1: Banks Act, 1990 (Act No. 94 of 1990), Co-operative Banks Act, 2007 (Act No. 40 of 2007) and Mutual Banks Act, 1993 (Act No. 124 of 1993);

Tier 2: The Regulations relating to banks, to co-operative banks and to mutual banks; and

Tier 3: Banks Act, Co-operative Banks Act and Mutual Banks Act: Directives, Circulars and Guidance Notes.

To complement these three tiers, the BSD also uses other legislative laws to efficiently supervise the banking system. These include:

- *The South African Reserve Bank Act, 1989 (Act No. 90 of 1989);*
- *The Financial Intelligence Centre Act, 2001 (Act No. 38 of 2001);*
- *The Companies Act, 2008 (Act No. 71 of 2008); and*
- *The Postbank Limited Act, 2010 (Act No. 9 of 2010)* (SARB, 2014).

Despite the volatile nature of the South African banking and financial sectors in the past, the country has managed to create a sound and efficient financial and banking system, through strong legislation and regulation.

3.2.2 Bank regulation in Brazil

Brazil, like any other developing country, has also experienced the effects of the volatile nature of the global and domestic financial and banking systems. On the other hand, just like South Africa, Brazil has managed to build a sound banking system through strict regulations. The tight regulations that the Brazilian government imposed on the banks contributed strongly to them surviving the financial crisis of 2008 (Da-Costa, 2009). Like South Africa, Brazil also drew lessons from the experiences of past crises to make their banking system stronger. Da-Costa (2009) mentions that the 1990s' crises forced the government to re-evaluate their supervision strategies. The banking and financial activities that are carried out in Brazil are subject to laws and restrictions that have been passed by the government. According to Filho and Ramos (2014), there are three main regulators for the Brazilian capital markets, which include the banking sector. These are the Central Bank of Brazil; the National Monetary Council and the Brazilian Securities and Exchanges Commission.

To strengthen regulation in the country, the government also set up self-regulators for the regulation of securities trading. This is to monitor the manner in which institutions authorised to trade in certain securities, are trading them. Bank regulators in Brazil have also been commended

for their tight laws regarding capital requirements. Ever since 1995, the Brazilian central bank has requested all financial institutions' capital adequacy requirements to conform to the BASEL Accords (I, II and III). While the Accords have a certain capital requirement (8% as mentioned in Chapter 2), the Brazilian financial institutions are required to maintain a ratio of at least 11% (Filho and Ramos, 2014). Da-Costa (2009) further mentions that the definitions of capital for banks in Brazil have also been narrowed. This is meant to avoid the American and European situation in 2008 where banks used worthless or risky assets as capital which later led to the banking crisis.

On top of all these requirements, the central bank has also imposed a high reserve ratio on deposits to protect the depositors and avoid the bankruptcy of banks in the event of bank runs. Although this tight requirement has been condemned for stalling not only credit demand, but the willingness and ability of banks to lend, it has also been praised for giving banks the liquidity they needed to avoid the effects of the 2008 crisis (Da-Costa, 2009). Despite the fact that Brazil was not fully sheltered from the effects of the 2008 crisis, tight regulation certainly helped to avoid total disaster, as compared to other developed countries whose regulatory systems were thought to be efficient.

3.2.3 Bank regulation in China

Ping (2012) mentions that the credit that banks provide is regarded as the main source of funding for the Chinese economy to the extent of contributing more than three quarters of China's total funding (loans and advances) for the period 2008-2009. With this in mind, the supervision of the banking sector in China is regarded as a priority and being able to control this sector would determine how the government can manage the whole economy. The need for more bank regulation was also brought about by the fact that China's international trade and financial interests have grown over the years; therefore it has been interacting more and more with the outside world. This has increased the vulnerability of its financial system to the effects of contagion. This was the case during the 2008 financial crisis as the Chinese economy also went into a recession as a result of the American sub-prime crisis. However, the Chinese banking sector did not suffer as much as compared to other countries' banking sectors and this has been accredited to the tight regulations that have been in place for decades in the country (Sandgren, 2008)

Banking regulation in China was once the responsibility of the central bank, the People's Bank of China (PBoC), but decades of reconstruction, with the aim of perfecting the way banks are monitored, has resulted in the duties of this task being split. This resulted in the establishment of

the main banking regulatory body, the China Banking Regulatory Commission (CBRC), which still reports to the state (Ping, 2012). According to Ping (2012), the PBoC, the CBRC and ultimately the central government are the three main organisations that are mainly responsible for bank supervision in China. Both the PBoC and the CBRC report to the central government and the state has also retained the power to control bank lending, which as mentioned earlier is regarded as the main driver of the Chinese economy.

The objectives of the CBRC have been categorised into general and specific objectives. Under the general objectives, the CBRC aims to promote the efficiency, effectiveness and the soundness of the Chinese banking system and encouraging fair and healthy competition within the industry. Under the specific objectives, the organisation aims at protecting the values and needs of the depositors. Just like the South African and Brazilian regulatory authorities, Chinese regulators also believe that the protection of the interests of the depositors or consumers would ensure that the financial sector is always stable and efficient. The PBoC is now mainly responsible for the formulation and implementing of the monetary policies that govern the way the whole financial system works (CBRC, 2014; Ping, 2012). Bank regulation in China is also not immune to the political environment of the country and this is unavoidable since there are many state owned banks in the country. This has brought about concerns of whether there can be a conflict of interest for the state when it comes to effective regulation of these banks. However, over the years the role of regulation of all banks under the banking laws has gradually been passed on to the CBRC, while the state is mainly focusing on economic growth, which shows a major improvement in the country's regulatory standards (Ping, 2012).

China, like Brazil and South Africa, also ensures that its banks follow the recommended regulatory rules of the BASEL Committee. The PBoC requested that all banks comply with the BASEL I requirements in 1994 (later fully implemented in 2004) while the CBRC ordered banks to implement the BASEL II requirements in 2008 (Jun, 2012). In 2012, the country announced its plans to have the new Accord, BASEL III, implemented rapidly following its release in 2010 but later opted for a gradual implementation approach for which they released a timetable (see section 3.3.1). China is an example of an emerging economy that has managed to do well in regulating its banking system and making it efficient.

3.2.4 Concluding remarks

Bank regulation in the emerging markets has met some problems that have included the lack of needed resources and information, poor implementation tools, political interference and above all the effects of the one size fits all policy. However, this has not deterred them from

implementing strict regulatory rules that have managed to shield their financial sectors from the negative effects of contagion that has since been brought about by the growth in globalisation. As mentioned earlier in Chapter 2, there is a real need for the existence of regulatory alignment between trading partners as all countries follow most of the same BASEL rules of regulation.

3.3 BASEL III PLANNING AND GENERAL TIMELINE

The implementation of the new Accord has been designed to be phased in; with countries expected to have reached the new standards by a certain time. This approach in implementing BASEL III was to make sure that banks can fully and efficiently implement the Accord while they also recovered from the effects of the 2008 financial crisis. It would also give those banks that needed large amounts of additional capital enough time to raise the capital as per the required standards. The transition process was not meant for the banks alone, but for the borrowers as well as it would ensure that during the process of implementation the banks would have the room to lend and support economic growth (BIS, 2012). Therefore, an effective implementation of the Accord will not only contribute to better bank competitiveness and better management, but will also show the regulators that the banks are recovering well from the 2008 financial crisis.

However, much planning has to go into the implementation process for it to be efficient and successful. This includes strengthening the management capabilities of the bank so as to be able to embrace the change that the Accord will bring. BASEL III has put new emphasis on risk management which means that there should be the introduction of better risk management frameworks. For these frameworks to be efficient, banks not only need to have better management capabilities but should also invest highly in technologies that will help in data management and capturing. The quick access to accurate data for banks is very crucial in the implementation process; therefore the technologies will not only ensure that the data is clean and is delivered efficiently, but also that data auditing is made easier (Chabanel, 2011). As mentioned before, one of the main challenges that banks in the developing countries face in trying to achieve efficient regulation is information asymmetry. Therefore, with better risk management capabilities and better data capturing technologies, this challenge can be eliminated.

According to Chabanel (2011), although implementation of BASEL III is going to be different across continents, there have been proposed approaches of implementation published for regulators to follow. These approaches, which were introduced to make it easier for regulators and policy makers to implement the new regulatory principles, include incorporating the new principles into the existing regulatory framework or starting a whole new regulatory framework,

meaning abandoning the already existing principles for the new ones. The first option of implementing the Accord on an existing framework includes making the necessary changes to the system so as to accommodate the new principles. This would allow the banks to gradually get used to then making sure that the Accord is effectively absorbed into the system. This is what the BASEL Committee had in mind when they decided that the framework be phased in rather than implemented quickly. Implementing the Accord gradually would also, as mentioned earlier, reduce costs as it is easier to make the existing system incorporate the new framework. Chabanel (2011) further argues that for this approach to work, the implementation planning should include having to extensively study and know how the existing framework is designed. This would allow for efficient implementation of the new regulations where they are really needed. This works efficiently in those countries that have their regulatory standards fully complying with the BASEL principles of regulation, (i.e. those countries that have implementing all the BASEL Accords). Other countries, e.g. the USA, completely skipped the implementation of BASEL II; therefore they would find it difficult to use this approach in implementing BASEL III (Valladares, 2012).

The second alternative requires that the banks fully implement the Accord from scratch, i.e. deploying a new regulatory environment. This would mean completely replacing the old framework with the new. This may sound more costly than the first approach, but it has better long term benefits if the banks manage to effectively make the new framework completely part of its system. This, however, means that the short term costs are very high as they include high investments in technologies that would effectively define and understand the new framework first before implementing it. This is where data processing management also plays a big role as all the information is crucial in successfully implementing the new framework. For developed markets, such an approach would not be that damaging, compared to the developing markets, as they have the resources to fund it (Chabanel, 2011).

After all the necessary planning has been done, banks have to follow the timeline 2013-2019 for the implementation of the new Accord. The BASEL Committee released a general timeline that countries can follow, despite the fact that the timelines will also vary from region to region. The general timeline of the new Accord is going to be spread over a ten year period starting in 2013. The phase-in arrangements have been split appropriately so as to accommodate the three ratios, i.e. the capital adequacy ratio, the leverage ratio and the liquidity ratio. The implementation of regulations on each ratio has its own timeline (BIS, 2013). The Committee decided that 2013 would be the year to start the phase-in of the higher capital requirements. This would then be expected to be fully implemented by the end of 2014. According to BIS (2013), the capital

requirement of 4% of total assets should be fully implemented by the end of 2014. This would then make way for the other phase-in arrangement regarding capital, specifically the capital conservation buffers. The general timeline set to begin the implementation of capital buffers in 2016 and full implementation is expected to be in 2019. These capital buffers are expected to be 2.5%; therefore in total by 2019 the capital plus buffers (taking into account the capital deductions) would be 10. 5% (BIS, 2013). As mentioned before, BASEL III puts more emphasis on better risk management and so the proposed risk management tools that have been included in the new framework were scheduled to be implemented by the start of 2013.

As part of its requirements, BASEL III makes the disclosure of documents by banks a priority, especially the aforementioned ratios. However, moving on to the timeline of the leverage ratio, the Committee proposed that there be no rush in implementing the necessary requirements but supervisors monitor the ratios in the period 2011-2015 before disclosing them. The phase-in arrangements are such that supervisors track and analyse the leverage ratios in 2011 and 2013-2015 without disclosing them. In 2017, based on the results of the analysis period, supervisors would prepare the leverage ratios for disclosure in 2018, in which disclosure is mandatory. The same phase-in procedure was proposed for the liquidity ratios as well as the Committee proposed that the liquidity ratios be monitored for the period 2011-2015. In 2015, the LCR will be introduced with a percentage of 60% which will increase by 10% each year until it is 100% by 2019; while the NSFR will be introduced in 2018 (BIS, 2013; Joyce *et.al*, 2012).

The general timeline that the BASEL Committee proposed is only going to serve as a guideline for regulators and policy makers, as there can be deviations from this timeline. Therefore, implementation of BASEL III is not expected to end in 2019, but will be extended a bit further to cater for countries that fall behind the deadline. The BASEL Committee of Banking Supervision (BCBS) also created a programme, the Regulatory Consistency Assessment Programme (RCAP), which is meant to establish the level of compliance of the countries that are implementing BASEL III. The programme also gathers information on how each individual country is planning to implement the new Accord and the progress made, before making recommendations on how the process can be improved upon.

Reports published on assessments on China, Brazil and South Africa have shown that these three countries are in full compliance with the regulatory requirements, while recommendations were made for some of the flaws that were found in their systems.

3.3.1 South Africa

South Africa is one of the many developed countries that comply with the regulatory requirements that the international regulatory bodies like the Financial Stability Board and the BASEL Committee always set for countries to follow. In 2004, after the announcement of BASEL II, South Africa implemented the necessary changes to its financial and banking systems to implement this Accord, an exercise that lasted several years. After the 2008 financial crisis and the announcement of the new Accord, the country again geared up for the implementation of the new regulatory laws. Preparations began with the general assessment of the health of the country's financial sector, for which a report by the National Treasury was released in 2011. The assessment was done to establish the areas of the financial sector that did and did not need regulatory reforms and as well as how to implement the new Accord. Results from the assessment revealed that the capital levels and leverage ratios for South African banks did not only comply with the BASEL requirements but actually exceeded them. Therefore, the Treasury saw it fit not to make any changes to the system, but to wait for the scheduled time for the implementation of BASEL III which was 2013 (Elliott, 2012: 49).

In 2013, South Africa put in place amendments that would accommodate the new regulatory requirements. This included raising the quantity of capital so that banks would be able to withstand shocks. On the 1st of January 2013, the South African Reserve Bank (SARB) issued a directive (Directive 5/2013) that included a set of amendments for banks that included the new prescribed capital, liquidity and leverage ratios. This document also included the timeline for the implementation of the new Accord, together with the detailed requirements that were in conformity with the BASEL III proposed framework (SARB, 2013).

The amendments also included raising the quality of capital while mainly focusing on the sources of capital that the BASEL Committee had proposed, e.g. common equity, improving the risk management frameworks of the banks to avoid risk trading and protect depositors, introducing capital buffers which were suggested by the Committee for banks during times of economic stress, as well as introducing a leverage ratio as per the requirement by the BASEL Committee which would act as a supplementary tool for the effective function of the risk management framework (SARB, 2013; SARB, 2014). By the end of 2013, the SARB had already incorporated reformed regulations on both international and domestic banks, in relation to the BASEL III framework. The SARB also issued a directive that would show banks how to calculate and report the liquidity and the leverage ratios in accordance to the proposed BASEL regulations (BCBS, 2013).

The South African government also proposed a regulatory approach that would separate prudential conduct of the financial sector from market conduct (the twin peaks approach). Therefore, under the twin peaks approach, prudential regulators are responsible for maintaining the safety and the soundness of the banking and the financial systems, while the market conduct supervisors ensure that consumers' interests are well catered for. The twin peaks approach aims at making the financial system more efficient and sound, while also advocating for consumer or depositors' protection which would boost the confidence of the system. It also aims at encouraging accountability and transparency within the financial sector; a quality that the BASEL III framework also aims to achieve (see section 3.4.1 for further details). In preparation of the implementation of the twin peaks approach, the SARB has increased its staff and has created a prudential working group that includes experts from the Financial Stability Board (FSB) and the SARB itself so as to have a co-ordinated approach to regulating the financial sector (Joffe, 2014).

3.3.2 Brazil

In 2007 Brazil implemented BASEL II and in 2012 announced their intentions of fully implementing BASEL 2.5 in accordance with the international regulations. This therefore made Brazil fully compliant with the BASEL regulation on banking supervision and hence implementation of BASEL III was expected to be smooth. Together with China and South Africa, Brazil is one of the many developing countries that began preparations for the implementation of BASEL III for 2013, earlier than expected. The Brazilian government made a total of 42 regulatory amendments by the end of 2013 so as to comply with the pre-implementation requirements of BASEL III (BCBS, 2014: 22). Despite finally announcing the implementation of the new Accord in 2013, the government had already taken an aggressive approach when it came to preparing the implementation of BASEL III. They began the preparations 2011 and also aimed to be done with the full implementation before 2019. In 2011, the Brazilian Central Bank (BCB) had planned it would implement the BASEL III regulatory requirements on capital, leverage and liquidity quality two years ahead of the deadline. (Elliott, 2012: 42).

In line with these goals, the central bank released a directive (Notice 20,615 of 2011) which gave the guidelines to banks on what was required for the implementation of BASEL III. The document included the new capital definitions, the new sources of capital, the ratios banks were required to hold in relation to leverage and liquidity as well; and above all the timeline that the banks had to follow in the implementation process. The timeline stipulated that the regulations dealing with risk management were to be announced in 2012. The central bank also planned to

release in 2012, the calculations for the liquidity and the leverage ratios as per the requirements of the BASEL Committee (Banco do Brazil, 2011: 17).

As soon as the central bank published the report that stipulated the new capital definitions and the instruments or securities that would and wouldn't be used as sources of capital, banks (including the central bank itself) did not waste time, but immediately started selling securities to raise capital and meet the deadlines that had been set by the central bank. This is despite the fact that Brazilian banks were considered to be well capitalised in 2011 and had no need to raise more capital; further showing the nature of the aggressive regulatory approach of the central bank (Valladares, 2012). However, it is because of this fact that Brazilian banks were considered to be well capitalised that the Central Bank did not only ease the capital rules in 2013 but also chose to follow the timeline that had been proposed by the BASEL Committee. Capital rules were eased as banks were given more of capital sources, some of which the BASEL Committee had proposed not to be used, e.g. goodwill and deferred tax. The Central Bank also made it possible for banks to use some of their debt as qualifying capital in times of financial stress and went further to give them the flexibility of choosing forms of calculating risk (BCBS, 2013).

As a result of this change in the Brazilian timeline, new general regulations for the preparations of BASEL III implementation were announced in 2013 and these were a set of four resolutions and 15 circulars that the Central Bank through the National Monetary Council (CMN) published (BCBS, 2013). According to Stuber and Stuber (2013), the four resolutions dealt with:

- The new regulatory capital calculation methods and the division of capital into Tiers I and II;
- The capital maintenance requirements and the calculation methods;
- The additional capital sources, the calculation methods and the risk management tools; and
- The new way of preparing and transferring collective information through the analytical trial balance sheet and the calculation of regulatory capital (Prudential Conglomerate).

The 15 circulars on the other hand were devised so as to complement the four resolutions. The circulars introduced the methods to be followed when making changes to capital, calculating capital, calculating risk weighted assets (RWA) and managing risk (Stuber and Stuber, 2013). Through these and many more regulatory adjustments that the Brazilian government put in place, the implementation of BASEL III would be made efficient and the timeline followed.

3.3.3 China

The 2008 financial crisis together with the rapid growth in the banking industry in China called for banking regulations in China to be more efficient. Therefore, just like in Brazil and South Africa, when the 2008 financial crisis hit the global market, Chinese banks did not experience the full effects as they were protected by a healthy capital structure, which according to Elliott (2012: 43), exceeded the international requirement but this did not mean that there was no need for the adoption of the BASEL III regulations. Chinese banks were on the verge of expanding into the western market in 2011, therefore tight international regulatory standards had to be adopted. Just like its Brazilian counterpart, the Chinese government had the intentions of an early implementation of the new BASEL Accord. Therefore in 2011, the Chinese government re-assessed the health of the banking system to determine whether all banks were eligible for implementation and subsequently announced it (CBRC, 2011: 48; Valladares, 2012).

China, having previously implemented BASEL II like South Africa and Brazil, also showed its full participation and willingness to implement the new regulations by making suggestions to the BCBS for better and efficient international regulations. These recommendations were in view of the negligent risk trading that was going on in the developed world and that a more strict and sound code of conduct had to be put in place so as to deal with these situations for globalisation had shown that the consequences of such actions would also be felt by the developing countries (CBRC, 2010: 56).

To help make the implementation of BASEL III easier and more efficient for banks, the CBRC encouraged them to invest more in technology that would help in information gathering, as it would make the implementation process less costly and more efficient. Banks were also required to improve their risk management portfolios, establish better general management frameworks and efficient internal controls. Regulatory reforms that are in accordance with the published international standards were also put in place by the CBRC specifying the principles to be used in measuring capital and risk based capital as well as requiring banks not to deviate from the international regulations (CBRC, 2012).

In 2012, the Chinese government also issued a timeline banks had to follow in implementing the BASEL III Accord. Despite having announced that the country would push for a rapid implementation approach, the government later opted for a more gradual approach, as had been suggested by the BASEL Committee, so as to accommodate the weaker banks that wouldn't be able to raise the needed capital in time for the deadlines (Rabinovitch, 2012). According to Zou

(2012: 45), the CBRC therefore split the capital regulations between the small and the big banks and required that:

- The big banks should have, by the end of 2013: a) A core Tier 1 capital adequacy ratio of no less than 8.5 %; b) A Tier 1 capital adequacy ratio of no less than 9.5 %; and c) A capital adequacy ratio of no less than 11.5 %. The CBRC however gave banks no pressure so as to ease the implementation process, therefore banks were allowed, by the approval of the CBRC, meet the standards by the end of 2015, and
- The smaller banks should have, by the end of 2016: a) A core Tier 1 capital adequacy ratio of no less than 7.5 %; b) A Tier 1 capital adequacy ratio of no less than 8.5 %; and c) A capital adequacy ratio of no less than 10.5 %. Also, with approval of the CBRC, smaller banks were also allowed to meet the standards by the end of 2018.

China was therefore assessed to be in line with the required BASEL stipulations put in place for the implementation of the new Accord and the deviations that were found were amended.

3.3.4 Concluding remarks

The implementation of BASEL III was generally devised to be smooth and flexible and therefore individual countries' governments have made sure that their banks can implement the Accord with ease. The preparations that were put in place by China, South Africa and Brazil to accommodate the implementation of BASEL III show that the necessary steps have been taken to comply with the BASEL requirements for the implementation of the new Accord. However, the reports that were done by the RCAP committee show that there are still alterations that are still to be made in all the three selected countries with regard to being compliant. In Brazil, there are some capital deductions that are still to be made while in South Africa and China some of the rules have still to be loosened so that the implementation process can be made easy for banks. Some of these recommendations made by the RCAP reports have already been implemented by the regulators in each country.

3.4 IMPLEMENTING BASEL III

The BASEL Committee proposed that for the process of implementation to be smooth and effective, the new Accord should be implemented in phases, under a certain timeline and in stages as well. This means that each of the three ratios that the Accord is focusing on (capital adequacy ratios, liquidity ratios and leverage ratios) will have a different timeline and schedule for implementation. The proposed timeline for implementation however is only a guideline and not compulsory for countries to follow, therefore it may take more or less time for some of the

countries to fully implement it, while other countries have chosen to totally eliminate the phase-in framework. As shown earlier in the previous section, each country might adopt a different timeline for implementing the new Accord.

This section analyses the implementation timetables, the implementation methods and calculation methods which South Africa, Brazil and China used in the implementation process in line with the proposed BASEL timelines and methods. This will help establish the progress made with respect to the set deadlines as well as determining an alignment of implementation methods.

3.4.1 South Africa

South Africa formally started the process of implementing BASEL III in 2013 as per the scheduled BASEL timetable. On 4 April 2013, the SARB released a directive (Directive 5/2013) which stipulated the different capital tiers that each bank that traded in South Africa was entitled to hold. The directive also included the various elements such as systematic risk, phase-in arrangements of minimum requirements and individual capital requirements which had been suggested by the BASEL Committee in the BASEL III regulatory framework. The directive gave a specific distinction between the different capital Tiers which are Tier 1 and Tier 2. It also distinguishes between the general and the systematic risk capital structures that the banks are required to hold with effect from 1 January 2013. Capital holdings were stated in the directive to be different with regard to the types of banks, i.e. the domestic systematically important banks (D-SIB) and the global systematically important banks (G-SIB) would have different capital requirements. The new capital framework that the SARB proposed for the D-SIBs as per the BASEL regulations were to be announced in time for the 2016 BASEL schedule to be met. These capital requirements would also be specific per bank or bank group based on importance of the bank or bank group and would be phased-in over a three year period i.e. 2016-2019 (SARB, 2013).

As per general South African law, the Registrar of Banks specifies the capital requirements that banks were required to hold. Therefore, the capital systematic risk requirement was set at 1.5% of all risk weighted exposures with effect from 1 January 2013 and was scheduled to be increased by 0.5% to 2% by 31 December 2015. The Registrar made sure that this requirement would later align with the general capital requirement for the D-SIB that was scheduled for implementation in 2016 by ordering that the 2% adjustment be done during the general capital phase-in period. In this way, alignment of the framework would not only be achieved, but the factors that are related to systematic risk were also not double counted in the process; as double counting could have strained the structures of the banks especially with the high capital requirements in place.To

ensure that implementation of BASEL III did not strain the banks, the SARB put in place measures to make the implementation as smooth and flexible as possible. The directive then notified all banks that the total capital adequacy requirements which included the capital systematic risk structure and the general capital requirements for the D-SIBs may not exceed 3.5% of the banks' risk weighted exposures. To add to this, the directive further states that the total capital adequacy requirements that all South African banks had to meet by the end of 2019 would not exceed 14%; and this excluded the capital buffers and the individual capital requirements (ICR) (SARB, 2013).

The BASEL Committee proposed that the ICR be phased-in from 2013 to 2019 and be split between Tier 1 and 2 capital frameworks. Tier 1 capital requirement would be 4.5% and Tier 2 would be 6% and then taking into account the deductions that would be made during the phase in process, the total ICR would amount to 8%. The South African directive and timeline for capital requirements also conformed to these phase-in arrangements and as mentioned earlier, these were scheduled for implementation as from 1 January 2013. The ICR, as mentioned earlier, were meant to be different as per the different types of banks and the Registrar was to define them accordingly, using what was defined as the bucketing approach. Thereafter, the banks that would have been defined as D-SIBs would be informed and given their capital requirements accordingly (SARB, 2013).

These ICR were to be prioritised as they were regarded as complements to the capital conservation buffer. Penalties would be rendered accordingly to those banks that would not comply with the capital conservation buffer and ICR requirements. The directive therefore gave the Registrar's office the power to continue using its supervisory role of increasing or decreasing the levels of the ICRs. Since the ICRs were only scheduled for implementation in 2016, the SARB ordered banks to refrain from publishing their ICR or general capital structures until the phase in process had been completed. This was done not only as a way of following the international disclosure standards but also as a way of avoiding market confusion especially since these requirements would change during the phase-in process (SARB, 2013).

The directive then gave banks the order to hold higher capital buffers than the ones that the BASEL Committee had proposed, i.e. not below 6.5%. This ensured that any unexpected domestic and international adverse financial or non-financial factors would not easily affect the banks as they would be fully protected. Also, the Registrar's office retained the role of supervising the meeting of these requirements. The conservation and the countercyclical buffers were scheduled for implementation as of 1 January 2016, together with the ICRs. These buffers

aim at protecting banks form the effects of excessive economic growth, i.e. when there is excessive economic growth, there is high credit demand which might give banks the incentive to indulge in risky activities.

The liquidity requirements that the BASEL Committee proposed for global banks were scheduled for introduction in 2015 but, even before 2013, South Africa had already taken steps in informing its banks of the need to comply with the prescribed liquidity regulations. The SARB and the bank supervision department issued a directive in 2012 (Directive 5/2012) which stipulated that all banks were obliged to hold the prescribed liquid assets. According to Ndzamela (2013), these assets include cash, "central bank reserves and certain marketable securities backed by central banks and sovereigns, certain government securities, covered bonds and corporate debt securities." The South African banks have always been covered liquid asset-wise through the classical cash reserve or liquidity deficit framework used by the SARB for implementing monetary policy and this framework has been upgraded so as to accommodate the international BASEL standards.

Supervisors and regulators were instructed on how to deal with the extent to which cash and liquid reserves could be accessed and also the extent to which they could be drawn down during times of financial stress. The SARB would also require collateral when providing services to banks through this facility and the forms of collateral that the Central Banks accepted were listed in the directive. These included A-rated marketable debt securities, JSE listed equities and notes of self-securitised high quality loans. This facility was scheduled to be available to banks as from 1 January 2013 (SARB, 2012).

However, the need for the facility was duly reduced as the BCBS revised the liquidity requirements in 2013 and made them more flexible and less costly for banks. The Committee also added some assets to the list of accepted liquidity assets and, according to Ndzamel (2013), these included "residential mortgage-backed securities rated AA or higher, corporate debt securities rated A+ to BBB-, and equities that meet certain conditions." These changes were acknowledged and implemented into the South African regulatory system as from 7 January 2013 through Directive 2/2013 issued by the SARB.

The regulations that pertain to leverage ratios and also the calculation of the leverage ratios, as according to the BASEL Committee, were also included into the South African BASEL III implementation schedule and for implementation from 1 January 2013. The BASEL Committee proposed that the leverage ratio be set at a minimum of 3% but most countries including South Africa decided to be more strict on banks in this aspect. Therefore, despite the fact that South

African banks have low leverage ratios as compared to other international banks, the BSD in South Africa set the leverage ratio at 4% for implementation from 1 January 2013 (BCBS, 2014). The disclosure requirements with regard to the leverage ratios are that banks start publishing them in 2015.The regulations regarding leverage ratios hold until the final phase-in of the ratios in 2019, as for the BASEL Committee is still testing the formulas and will come up with a conclusion in 2017 (BCBS, 2014).

The implementation of the new Accord in South Africa has also been supplemented by the introduction of the new twin peaks financial regulatory approach that was developed (as mentioned earlier) so as to smoothen the process of introducing a new regulatory framework. This approach is called the twin peaks model of financial regulation. The model was developed after a 2008 financial regulatory review that was launched by the government in 2007 and then scheduled for implementation starting from 2013, the same time that the BASEL III Accord was also scheduled for implementation. The idea behind the twin peaks model is to spilt regulation such that the financial and the banking sectors have two regulators so as to ensure efficient and thorough regulation. The two regulators are prudential and market conduct regulators. The objective of the prudential regulator, which will be part of the SARB, will be to maintain the soundness and efficiency of the whole financial system (macro-prudential regulation) and as well as individual financial institution (micro-prudential regulation). This therefore includes the banking and the non-banking institutions, e.g. insurers and other shadow bankers. On the other hand, the market regulators will be responsible for the protection of the interests of the consumer or the market participants. For example, in the case of banks, the market regulator protects the interests of the depositors; this is one of the main reasons why the South African government regulates and supervises banks. In the case of shadow bankers and investment companies, the market regulator is responsible for the interests of the investor. The market regulator is the Financial Services Board (FSB) (National Treasury, 2013: 6).

South Africa has made considerable progress in implementing of BASEL III and strengthening regulation of banks and the financial system. Being a developing country with one of the largest financial systems, not only in Africa but the world, there is a great need for success in implementing these internationally recognised regulatory standards so as to attract foreign investors. A stable financial environment is attractive to investors and would ensure the continuous growth of the financial system. The BASEL III regulations help in building this stable financial stage; therefore the progress and meeting the deadlines that have been proposed is essential and South Africa is in the right path.

3.4.2 Brazil

Brazil, as mentioned in Section 3.3.2, had originally planned for an early implementation of BASEL III but decided to follow the BASEL-given timeline. The government announced in 2011 that it was intending to implement the full set of proposed regulations through Notice N. 020 615 that was published by the central bank, Banco de Brazil (BCB). The notice gave banks the general regulation outline that had been proposed by the BASEL Committee; the new definitions of capital, leverage and liquidity and the calculations of capital, leverage and liquidity thereof. These specifics were later published in March 2013 in the form of a set of four resolutions (see section 3.3.2) and 15 circulars that detailed the implementation of BASEL III in Brazil. These regulations which included the revised capital definitions, calculations of leverage ratios and liquidity ratios, capital buffers and as well as risk management requirements were scheduled for implementation from October 2013 (BCBS, 2013: 5).

The calculation of regulatory capital was done through the Prudential Conglomerate methodology and was set as a percentage of the total RWA. According to Stuber and Stuber (2013), the BCB required banks to follow three established rules with regard to capital disclosure and calculations:

- The 4.5% CET1 would mainly comprise of shares, retained earnings and reserves;
- Tier 1 capital will be 6% and will be comprised of instruments other than the ones mentioned above that would be able to absorb losses as the institution is operating; and
- Banks would hold a total for 8% equity reference assets and this 8% would be comprised of Tier 1 capital and other loss absorbing instruments.

Instead of specifically stating the countercyclical and the conservation buffers, the BCB required banks to hold the additional common equity as the capital buffers as proposed by the BASEL Committee. Banks were required to have, by the end of the phase in period, at least 2.5% to 5% additional common equity, of the total RWA. The conservation buffer will be phased in as from 2016 in the manner shown in Table 3.1 below; and banks were also required to adhere to these BASEL requirements regarding the timeline on capital buffers (Stuber and Stuber, 2013). However, as much as these requirements by the BCB sound close enough to what the BASEL Committee proposed, they were found to be strong deviations from the proposed BASEL regulations in BCBS report on Brazilian compliance. The RCAP committee realised that with regard to the capital and the counter-cyclical buffers, more work had to be done as the framework that the BCB had proposed for its banks seemed incomplete (BCBS, 2013: 16).

Table 3.1: Capital structure and BASEL timelines for Brazilian banks

BCB and BASEL requirements	Period of time						
	2013	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**
BASEL CETI	3.5%	4.0%	4.5%	4.5%	4.5%	4.5%	4.5%
BCB CET1	*4.5%	4.5%	4.5%	4.5%	4.5%	4.5%	4.5%
Basel total capital	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
BCB total capital	*11.0%	11.0%	11.0%	9.875%	9.25%	8.625%	8.0%
Capital buffers	------	-------	-------	0.623%	1.25%	1.875%	2.5%
Capital buffer Total capital + capital buffer	11%	11%	11%	**10.5%	10.5%	10.5%	10.5%

Source: BCBS (2013: 5); BCB (2013: 24)

Notes: * As from the 1st of October 2013

**Taking into account the regulatory capital deductions

The BCB was going to start the implementation of BASEL III later than the scheduled timeline of January 2013, but put in place accelerated and strict capital regulations that would compensate for the lost time and as well as compensate for some regulatory capital that had not been deducted. From October 2013, banks were required to hold a minimum Tier 1 common equity (CET1) of 4.5% as compared to the 3% that had been proposed by the BASEL Committee, while the total capital requirement from 1 October 2013 was 11% compared to the 8% proposed by the BASEL Committee. This percentage would gradually fall, up until it gets to the proposed 8% in 2019 (BCBS, 2013: 5) as shown in the Table 3.1 above.

The BCB decided that it would follow the proposed regulations that were written by the BASEL Committee with regard to the implementation and disclosure of the leverage ratios. They set the leverage ratio at 3%. The BASEL Committee would keep evaluating the extent to which the proposed 3% level can be effective in trying to avoid the high leverage ratios that caused most banks to fail during the 2008 financial crisis. Therefore, the implementation of the leverage ratio, not only in Brazil, will be a process throughout the phase to 2017 when the final decision is made. The BCB is still set to release the full and finalised requirements regarding the leverage

ratio by the end of 2014 or any time before 2017, so as to give the banks the time they need to adjust to these regulations.

With regard to the liquidity ratio, the BCB also issued a publication making clear its intentions of following the proposed calculation, implementation and disclosure requirements that the BASEL Committee had put forward for banks to follow. As mentioned in Chapter 2, the liquidity ratio was set into two minimum standards, which are the liquidity coverage ratio (LCR) and the net stable funding ratio (NSFR). The BCB will follow the calculation of the LCR which is the ratio between the stock of high quality liquid assets to the net cash outflows for the period of 30 days. The ratio should be 100% at all times and will be phased in starting January 2015 to 2019. The BCB also mentioned that it will calculate the net cash outflows taking into account the times of financial stress. The NSFR was proposed to be calculated as the ratio between the available stable funding amount to the required amount of stable funding, which should also be 100% at all times. The BCB would also inform banks on the types of assets that would be deemed fit to be stable and liquid assets. The NSFR will be implemented as from January 2018. Therefore, there is still much to be done on the liquidity ratios before they are due for implementation. The BCB is set to finalise the methodologies for calculating the LCR by the end of 2014 and the NSFR by the end of 2016 (BCBS, 2013; BCBS, 2014; BCB, 2013).

As per the BASEL requirements, the circulars that the BCB issued outlining the regulations also include the rules regarding exposure and the treatment of risk. The BCB opted not to use external credit ratings as proposed by the BASEL Committee and instead decided to use simpler methodologies which include the BASEL national discretions. This has, however, been called into question by the RCAP Committee which had the concern that, despite the fact that the risk weightings proposed by the BCB were higher than those proposed by the BASEL Committee, the risk exposures of big domestic banks and large banks that traded internationally would still be high. Therefore, instead of using the credit standardised approach to dealing with risk exposures, the BCB was urged to adopt the internal ratings based method (BCSB, 2013; Stuber and Stuber, 2013).

The implementation of BASEL III in Brazil has made progress although there are some areas that still need to be revisited as recommended in the RCAP reports. These changes include making the right capital deductions that need to be made and avoid the over- valuation of capital. This may be misleading as banks may end up being vulnerable come times of financial stress. Brazil was a bit late in starting the implementation process and despite having made up for this with the tight capital rules, there is a great need for the timelines to be followed the way

they were proposed by the BASEL Committee to ensure that the Accord is implemented efficiently and there is regulatory alignment between countries, especially those that are sufficient trading partners.

3.4.3 China

The Chinese banking system is mainly regulated by the CBRC and in 2012 they announced their intentions of implementing the new regulatory requirements as from1January 2013. The CBRC issued a notice (No. 57) which informed all banks that traded in China that there were to implement new capital rules as per the BASEL requirements. The notice required banks to calculate consolidated and un-merged capital separately as required by the BASEL regulations. These rules were later made clear in 2013 when the CBRC released the finalised capital rules for all commercial banks in China. Banks were required to include all the international and domestic operations when calculating capital on an unconsolidated basis; therefore the consolidated capital calculation would include all the bank's operations with all the financial institutions that it deals with as the CBRC deemed a bank and its financial investors to be one banking group. The notice also gave in detail the methodology that would be used to calculate capital adequacy ratio (CAR) for the Chinese banks. The CBRC required banks to calculate CAR as follows:

- Capital adequacy ratio = (total capital –regulatory deductions)/RWA x 100%;
- Tier 1 CAR = Tier 1 capital –regulatory deductions)/RWA x 100%; and
- Common equity Tier 1 CAR = common equity Tier 1 capital –regulatory deductions)/RWA x 100% (CBRC, 2013).

The new definition of capital according to the CBRC, which corresponded with the BASEL regulations, stated that total regulatory capital would include all common equity Tier 1 capital, supplementary Tier 1 capital and Tier 2 capital. The components of capital were also defined by the CBRC to include all the proposed sources and these included common shares, capital, general and surplus reserves and as well as any other source that may meet the standards of CET1 capital. China also met the regulatory requirements proposed by the BASEL Committee and required banks to make the appropriate capital deductions which included goodwill, intangible assets and deferred tax. The CBRC, like South Africa, also split its banks into systematically important banks (SIBs) and non-systematically important banks (NSIBs). These banks were as well required to hold different levels of capital. Once a bank had been identified as being a SIB, the CBRC would issue a notice to the bank informing it of the capital requirements it was required to adhere to. The systematically important banks were required to hold a supplementary regulatory capital of 1% on top of the capital buffer and not lower. This capital

buffer contains both the conservation and the counter cyclical buffers and every bank was required to hold these buffers which would range from zero to 2.5% (CBRC, 2013). The breakdown for these capital requirements that the Chinese banks were required to hold as the 1January 2013 were as given in Table 3.2 below.

Table 3.2: Capital structure and BASEL timelines for Chinese banks

Capital	**Minimum capital requirement**			**Conservation buffer**	**Counter cyclical buffer**	**Supplementary capital for SIBs**
	Core Tier 1 capital	Tier1 capital	Total capital			
Systematically important banks	5%	6%	8%	2.5%	0-2.5%	1%
Non-systematically important banks	5%	6%	8%	2.5%	0-2.5%	none

Source: Shusong and Xiaolong (2013: 4)

The CBRC required the SIBs to have achieved the proposed capital requirements by the end of 2013 while the NSIBs were required to have the regulatory capitals before 2019, preferably by 2016 (Shusong and Xiaolong, 2013: 4; Valladares, 2012). This not only indicated the urgency with which the Chinese regulators were willing to implement the new Accord but also showed that they were willing to be stricter on these regulations than the BASEL Committee to achieve a sound and efficient banking system.

The CBRC retained the right to monitor and regulate the capital implementation process and also the right to change these requirements any time, to ensure that all banks are adequately capitalised. Therefore, all banks, domestic or international, trading in China were bound to adhere to the rules and regulations that the CBRC had issued which were in accordance with the proposed BASEL III requirements.

Banks in China were not only given new capital rules but new leverage rules to follow as well. The CBRC issued a document in 2012 (Rules for the leverage ratio management for commercial banks) that gave the general definition of the leverage ratio, the timeline for its implementation, its calculation and the disclosure requirements. According to Zou (2012: 48) the CBRC defined the leverage ratio as the "ratio between a bank's Tier 1 capital and its adjusted balance on and off

balance sheet." The regulations in this document were in line with the proposed BASEL III leverage ratio regulations except for the fact that the CBRC set the required leverage ratio for its banks at 4% as compared to the 3% proposed by BASEL. The CRBC again maintained the right to monitor and regulate the leverage ratio throughout the phase-in period. While the BCBS set the implementation of the leverage ratio for 2018, the CBRC required all SIBs within China to have adhered to the 4% regulation by the end of 2013 while the NSIBs were required to adhere to the same regulations by the end of 2016 (Zou, 2012: 48; Shusong and Xiaolong, 2013).

To ensure that the leverage ratio is effectively implemented and the regulations followed, the CBRC required banks to split their management resources into two sections or parts to cater for the ratio. Therefore, according to CBRC (2012), the board of directors of a bank would be responsible for the management of the leverage ratio and those responsible for the implementation itself are the senior managements of the bank. Banks were also required to disclose their consolidated and non-consolidated (through the use of statements to the CBRC) leverage ratio levels, on a semi-annual and quarterly basis respectively. These disclosure requirements are stricter than those proposed by the BASEL Committee which requires banks only to start disclosure by 2018.

The CBRC also took the importance of liquidity in the banking sector seriously and therefore in 2013, they issued a document that detailed the reasons for the need to regulate liquidity, the assets that would be accepted as high liquid assets, the definition of liquidity risk and its negative effects. The CBRC required that the liquidity ratio should take effect on all banks as from 1 January 2014 and would be phased-in until 2018. Therefore, during the phase-in period, the ratio would be 60% in 2014; 70% in 2015; 80% in 2016; and 90% in 2017. The ratio would be expected to be 100% in 2018 which is the BASEL deadline. SIBs were required to comply with the new liquidity rules by 2013 and the NSIBs in 2016.

Liquidity management in China under the BASEL III framework would not only include the LCR and the NSFR but would also cover the deposit to loan ratio and the liquidity ratio. While both the LCR and the NSFR were expected to be 100% under the BASEL rules, the liquidity ratio and the loan to deposit ratio (both added by the CBRC) were expected to be above 25% and higher than 75% respectively. The liquidity ratio would be calculated as the ratio of the amount of liquid assets to the amount of liquid debts multiplied by 100% while the deposit to loan ratio would be calculated as the ratio of amount of loans to the amount of deposits, also multiplied by 100% (Zou, 2012: 49; Shusong and Xiaolong, 2013).

The Implementation of BASEL III in China has made significant progress compared to many countries and the CBRC has also made most of the rules tighter. It may be argued however that the tighter rules may make it difficult for the banks in China to implement the BASEL III regulations with ease and at low costs. Nevertheless, China has made great strides at attaining a sound financial system.

3.5 A COMPARISON OF IMPLEMENTATION IN SOUTH AFRICA, BRAZIL AND CHINA

Comparing the process of implementation of BASEL III by South Africa, China and Brazil would show whether the countries followed the same methods and procedures in implementing the new Accord. However, it is necessary to keep in mind that while the BASEL Committee proposed the regulatory laws and methods with which the new Accord should be implemented, countries could follow different paths to implement the rules. Therefore, implementation methods could be different although countries apply the same rules. The difference of application methods and laws does not mean that there is no regulatory alignment. Table 3.3 below shows a comparison of the implementation processes followed by the three countries.

Table 3.3: Summary of results on the extent of and timelines for Basel III implementation in Brazil, China and South Africa.

COMPARISONS		COUNTRIES		
		SOUTH AFRICA	**BRAZIL**	**CHINA**
Scope of implementation		All banks (D-SIBs and G-SIBs) with strict rules on the D-SIBs	All banks (D-SIBs and G-SIBs) with strict rules on the D-SIBs	All banks (D-SIBs and G-SIBs) with strict rules on the D-SIBs and less strict rules for domestic rural banks
Preparation timeline		2008-2012	2011-2013	2010-2012
Preparation procedures		• 2008-2011(Financial sector assessment) • 2012 (Twin peaks approach proposed and Directive 5/2012 stipulating liquidity requirements) • 2013 (Directive 2/2013 with revised liquidity requirements and Directive 5/2013 stipulating capital rules and timelines)	• 2011(Notice 20,615 stipulating capital rules and timelines) • 2012 (Risk management regulations) • 2013 (Final resolutions and circulars)	• 2010-2011(Financial sector re-assessment) • 2012(Notice 57 stipulating the implementation timeline and relevant leverage, liquidity and capital rules)
Regulatory structures		• The SARB • The BSD • The Financial Stability Board • The bank Registrar	• The BCB • The National Monetary Council; and • Brazilian Securities and Exchanges Commission	• PBoC • CBRC
Final implementation timeline	• Capital • Capital buffers • Liquidity ratios • Leverage ratios	1 January 2013 1 January 2016 1 January 2015 1 January 2013	1 October 2013 1 January 2016 1 January 2015 1 October 2013	1 January 2013 1 January 2016 1 January 2014 1 January 2013

Sources: SARB, BCB, CBRC

3.6 CONCLUDING REMARKS

A regulatory alignment for the three countries is essential for effective trading. The benefits of regulatory alignment among trading partners would be beneficial to the regulated industries by avoiding the duplication of trading requirements through the management of product approvals, thus making trading costs lower. It is also beneficial to the consumers through lower costs and a better regulated system. This allows these countries to grow and attract more investment due to

the stable nature of their regulated industries. Regulatory differences create more trading costs by deterring efficient cross border trade and investment. This slows down economic growth and also decrease the efficiency of supply chains. Alignment ensures simple and easier movement of funds for banks with branches in all the countries and so raising capital and maintenance of the banks' branches becomes less costly. Investment would also rise as a result of the low trading costs thus boosting the banking industries in these countries. Since the banking industries hold a greater share of the financial sector, their growth would mean the growth of the financial sectors. While there are some differences in the implementation procedures all countries plan to complete the implementation of BASEL III by 2019 as per the BASEL Committee timeline. As Table 3.3 shows, South Africa and China started their implementation preparations earlier than Brazil. These two countries also began by assessing their financial sectors before proposing the implementation procedures for banks to follow. The assessments were done to evaluate whether there was a need for implementation of BASEL III and where it was needed. Despite having announced intentions to implement the new Accord early and fast, Brazil lagged behind its two counterparts in terms of both preparations and the final implementation. While South Africa and Brazil opted to follow the implementation timelines and calculation methods that were given by the BASEL Committee for the implementation of the liquidity and the leverage ratios, China opted for a stricter approach especially for the leverage ratios that are going to be implemented starting from January 2014 instead of 2015.

The regulatory bodies in the three countries all include their central banks and these, being the main regulators, have created other bodies to help in the regulation of banks (In South Africa there is the BSD and in China the CBRC). This is with the exception of Brazil in which the BCB retains the power to regulate and therefore mainly implement the new Accord. All three countries intend on implementing the Accord on all banks and bank groups that trade within their respective financial systems. This therefore includes international banks as well. This is despite the fact that different capital and other regulatory rules may apply per each bank or bank group. Notices and directives have also been the source of communication between the regulators and the banks in trying to inform banks about the changes in the regulations that govern them. South Africa, Brazil and China are all in compliance with the BASEL regulations and despite the differences in the implementation methods, they are all in the same process of implementing the new Accord. This shows high regulatory alignment for all these countries which is very important as mentioned earlier. The table has also illustrated that the three countries are directly comparable in terms of the timelines and the methods used to implement

the BASEL III regulations. The next chapter will compare and analyse the ratio levels (capital, leverage and liquidity) in all the three countries.

CHAPTER 4

COMPARATIVE ANALYSIS OF THE CAPITAL ADEQUACY, LEVERAGE AND LIQUIDITY RATIOS

4.1 INTRODUCTION

The most interesting and main point of focus for the BASEL III Accord is its emphasis on the importance of the capital adequacy, leverage and liquidity ratios. It was the notion that the 2008 financial crisis was caused by low capital levels in the banking system, very high leverage ratios and the low and poor quality liquid assets that were also held by the banks. The BASEL Committee therefore set out to correct these shortcomings. Therefore, under the new Accord, to help with the calculation of capital (as per the two capital tiers), the capital adequacy ratio was strengthened; the liquidity ratio was introduced to calculate the ability of a bank to easily turn its assets into cash so as to settle its debts; while the leverage ratio was introduced to calculate the extent of a bank's exposure to debt. These ratios were discussed in detail in Chapter 2, but the individual country analysis was not done. Individual analysis of the ratios is meant to reveal if the process of BASEL III implementation is making any changes to the trends in the capital that the banks have been and are now holding. Also, in analysing the ratios for the individual countries, a rise in the trends would mean the countries are in compliance with the BASEL Committee requirements.

The introduction of BASEL III has been met with the need for an increase in the capital bases, therefore it is expected that the capital trends for these three selected countries would be high to show that they are responding to the demands of the new Accord. However, as mentioned in Chapter 3, as some countries have since eased up the capital controls while some are following a more aggressive approach, it would be no surprise if the trends do not conform to the expectations. It is also anticipated that the trends of the liquidity ratio also be high according to the present data while leverage would be high signifying low risk.

There is also the issue of regulatory alignment that the trend analysis is expected to show and as pointed out earlier, it is important that this relationship be visible since the countries in question are close trading partners. As mentioned in the previous chapter, the importance of regulatory alignment, when it comes to trading countries, cannot be overstressed. Chapter 3 showed the existence of regulatory alignment in the methods that are being used to implement BASEL III by South Africa, Brazil and China. It is also essential to analyse if this alignment does exist in the ratios, which are the most important part of the new Accord. Then again, it will not mean that if the trends are not the same that there is a lack of alignment. Factors like the aggressive and easy

approaches to the implementation of BASEL III can still play a role in making the trends different.

4.1.1 Data and methodology

The necessary data on the ratios for the individual banks for the three countries was compiled from Bankscope for the period from 2000-2013, with country averages taken for capital adequacy. The leverage and liquidity ratios for each country's banking system as a whole were available from Bankscope. However, there is no significant difference between the average and the total data as it still represents the banking sectors, for each country, as whole. All ratios were then converted to percentages and then graphs for descriptive and comparative analysis were plotted. It is also worth mentioning that while it is expected that all banks submit their annual reports to Bankscope, some may not do so and this may alter the graphs and thus the analysis to some extent.

While analysing the leverage and the liquidity ratios it is also crucial that one keeps in mind they are only going to be fully implemented from 2015 onwards. This means that for the larger part of the period under review (2000-2014) banks did not have these ratios or rather did not calculate and disclose them the way the new Accord requires them to. This applies in particular to the leverage ratio. The leverage ratio used here is not exactly the same as the proposed BASEL leverage ratio for banks (which is not yet available), but rather a simple ratio as defined below. The purpose is to look for indications of banks progressing in BASEL III implementation.

The trends of the leverage and liquidity ratios, will also be analysed for the period before BASEL III. It is for this purpose that they are going to be constructed using data that banks were required to disclose during the 2000-2013 period. Since the capital adequacy ratio has always been available since the first Accord was proposed, this will be the only ratio that will be looked at in full consideration of the BASEL requirements. The BASEL III proposed calculations of the leverage and liquidity ratios are discussed in Chapter 2. However, for the purposes of this analysis, the equation that will be used to calculate the leverage ratio will represent the relationship that exists between equity or Tier 1 capital and a bank's assets (expressed as a percentage), as shown in below:

$$\text{Leverage ratio} = \frac{Equity/Tier\ 1\ capital}{Total\ assets} \quad \textbf{(5)}$$

Equation 5 shows that an increase in the leverage ratio for the banks can be viewed as being goo although this has to be kept in check as it may be risky as well. As mentioned earlier, the liquidity

ratio equation will represent the relationship between liquid assets and deposits (Dep) and short term (ST) funding (expressed as a percentage), as shown in Equation 6 below:

$$\text{Liquidity ratio} = \frac{Liquid\ assets}{Deposits\ and\ Short\ Term\ funding} \quad \textbf{(6)}$$

The condition that the liquidity ratio should be higher than 100% would still hold. The capital adequacy ratio will also be calculated as the average of the capital to asset ratio.

Analysing the years before BASEL III and comparing them to the years that the Accord was proposed would give an insight into whether these ratios are responding to the new proposed regulations or not. It would also show if the causes of the 2008 financial crisis, as represented in the literature, correspond to the trends in the ratios. Therefore this chapter will analyse, on top of the importance of the ratios, the trends in the ratios for South Africa, Brazil and China to also see if a conformity conclusion can be reached.

4.2 CAPITAL ADEQUACY RATIO ANALYSIS

The first ratio analysis will be the capital adequacy ratio as it is the base point for the other two ratios.

4.2.1 South Africa

Figure 4.1 below shows the average capital ratio for the South African banking system from 2000-2013.

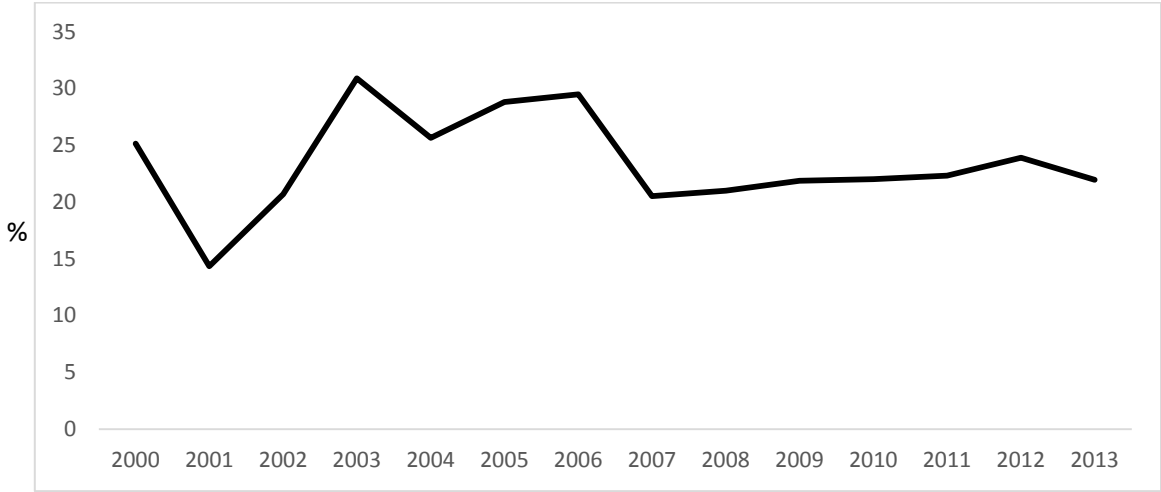

Figure 4.1: Average bank capital adequacy ratio in South Africa, 2000-2013

Data source: Bankscope (2014)

South Africa is one of the developing countries that survived the full negative impact of the 2008 financial crisis. One of the reasons this was possible is the fact that South Africa, like many other

countries, had implemented the BASEL Accords (I and II) and was aggressively adhering to the capital regulations that came with the Accord. This section will analyse the capital adequacy ratio for South African banks from 2000-2013 and Figure 4.1 above shows the average bank capital adequacy trend. As the graph shows, prior to 2000 the average capital ratio in South Africa was high but started to fall from 2000-2001. By the end of 2001, there was a sharp increase and this upward trend continued from 2001-2003. The ratio slightly dropped again as 2003 came to a close, only to increase again from 2004-2006. There is a visible severe drop in the ratio between 2006 and 2007. This is almost like the fall that had been experienced between 2000 and 2001. The ratio was then stabilised soon after 2007 and as Figure 4.1 shows, rose from 2007-2012. This is the period of the financial crisis and the time that the BASEL III Accord was proposed (which will be explained further). However, the trend during periods prior to the 2008 financial crisis can be explained otherwise through the use of annual reports released by the South African Reserve Bank (SARB).

The SARB had emphasised the need for higher capital adequacy within the banking system as far back as 1999 when the second Accord was introduced for implementation not only to the world but to the South African system in particular. It is during this time period that the SARB decided to be part of the BASEL community which comprises of BASEL member countries as well as non-members that choose to follow the banking regulations that the Committee proposed (SARB, 1999: 5). This need for more capital that the BASEL Committee called for is reflected in the South African capital adequacy trends shown in Figure 4.1above, where there was a high average ratio prior to the year 2000. This shows the extent to which the South African banking supervision authorities meant to follow the new BASEL regulations and as well as explains the high capital ratio trends during this time.

With the growth of the global financial system, there has been a growth in the innovativeness of the banking and financial market players. There was also a rise in the trading of high-risk securities and certain capital instruments during the period of 1999-2000. This created the knowledge amongst the banks and the financial sector players that arbitrage opportunities existed that could be manipulated to maximise profits (SARB, 1999: 6). This was, however, at the expense of high quality capital and by the end of the year 2000 the major fall in the average capital ratio in the South African banking sector shown in Figure 4.1 proved this point.

The other reason for the fall in the ratio in 2000(the SARB realised that the value of the banking system had been overstated) was because of the over-reliance on collateral security and the cross shareholdings (capital double counting) that existed between financial institutions. Therefore,

even when the banks' books reflected high capital, a revaluation showed otherwise. The revaluation then showed the worrying fact that, even though a consensus was reached that banks were well capitalised, the general capital levels within the banking system were not satisfactory. Therefore to deal with this problem, the SARB set up a regulatory team and required banks to report, on a regular basis, their capital structures (SARB, 2000: 14).

By the end of 2000, the SARB also put up proposals to amend the Banking Act of 1990 and with it the capital regulations. This meant an agreed increase in the banking capital structure from 8% to 10% in 2001, which was officially approved in February 2001 and was fully implemented in October 2001. The increase in the capital levels explains the sharp rise in the ratio from 2001 to 2003 (SARB, 2001: 71). Although the capital ratio fell as 2003 came to a close, the SARB (2004)stated that the South African banking system was not only safe but sound as 99% of the registered and operating banks were able to meet the 10% total capital ratio requirement by the end of 2004. This period also conforms to the preparations for the implementation of BASEL II in South Africa which required banks to hold more capital as a precaution for times of economic stress.

This 10% capital structure was maintained during the BASEL II preparation period and this saw the continued rise in the capital levels of the South African banks as shown in Figure 4.1. The report also stated that not only had most banks met the requirements but most of them had actually surpassed them and had ratios that exceeded 20% (SARB, 2004: 64). The South African banking sector was therefore doing very well and was well capitalised, a level maintained during the 2005 to 2006 period.

Despite the fact that Figure 4.1 shows a slight drop in the average capital adequacy ratio, the South African banking sector was still sound and well capitalised in 2007. A calculation of the percentage change in the capital ratios shows a slight drop of -0.3033%, from the year 2006 to the end of 2007. Some may argue that this drop was not really significant as most banks were still way above the 10% range that was required by the SARB and the BASEL II Accord. This can be explained by the fact that this was the build-up time to the financial crisis and for those banks that were international, which had branches in Europe and the United States; the effects of the financial crisis were just starting to settle in. While most global banks recorded very low capital levels for the period of 2007 to 2008, Figure 4.1 shows slight increases in the capital ratios in the South African banking sector. This shows that as most of the European and USA banks went on to collapse, the soundness of the South African banking system as a whole was able to absorb the shock of the crisis.

By the end of 2008, the average capital-adequacy ratio increased, showing that during the financial crisis, capital was well above the required levels, which kept the banking sector as sound as it had always been (SARB, 2008: 1). The capital structure in the South African banking system is robust enough even though there may be declines here and there. These slight percentage changes can be argued to be the anomalies in the data as mentioned before. Figure 4.1 shows the slight increase in the capital ratios in South Africa during the time which the SARB announced its intentions to incorporate the BASEL III regulations. These regulations, as mentioned earlier, came with a higher capital requirement.

The data analysis has shown part of the reason why the 2008 financial crisis was not felt that much by the local banks in South Africa. The strong capital structure of the South African banking system has shown that capital is an essential factor in building an efficient and sound financial and banking system. However, the financial crisis did slow down economic growth and with it the ease with which banks could raise capital. This may be the reason for the slow growth in capital levels and also the fall in the average ratios amongst banks as well. However, despite these and other problems, the outlook was generally favourable.

The analysis has also pointed out the existence of the alignment that exists between the regulations that are set by the BASEL Committee and those that the SARB requires banks to follow. The capital levels in the South African banking system can be seen responding to the implementation of the BASEL II Accord and preparations for the implementation of BASEL III. This was mostly visible from 2001 and also from 2012 as the SARB implemented BASEL II and III respectively and thus required the banks to hold more capital as per the requirements by the BASEL Committee.

Therefore, the SARB has always had capital requirements (for both the domestic and international banks trading in the country) higher than the BASEL Committee regulatory requirement. This has kept the banking system efficient and sound.

4.2.2 Brazil

Brazil is also a one of the many developing countries that implemented the BASEL Accords and, because of this, may have also evaded the full wrath of the 2008 financial crisis as well.

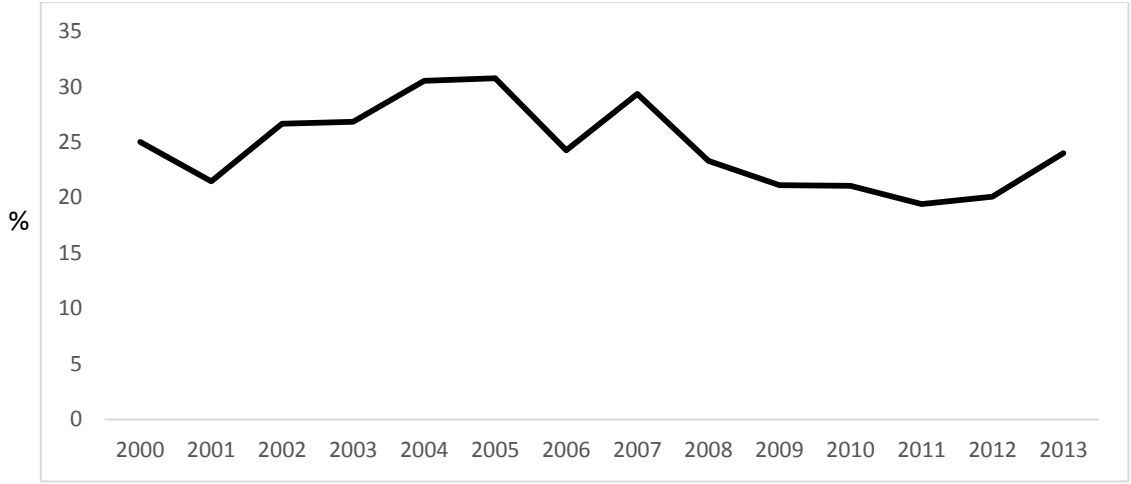

Figure 4.2: Average bank capital adequacy ratio in Brazil, 2000-2013

Data source: Bankscope (2014)

Figure 4.2 shows that the average capital adequacy ratio for Brazilian banks fluctuated a lot during the period from 2000-2013. Prior to the year 2000, the ratio was high and then started to drop until 2001. It increased from 2001-2005 and as the graph shows, the increasing trends also fluctuated as mentioned before. The ratio fell heavily from 2005-2006 and picked up again from 2006-2007, only to fall again during the financial crisis in 2007-2008. The ratio continued to fall until the end of 2009 and then rose slightly in 2010. This is in the period that the BCB announced its intentions of early BASEL III implementation. However, the ratio still went on to fall again in 2011as the implementation plans were moved to 2013. The end of 2011 saw a rise that continued to the end of 2013.

The average capital ratio of the Brazilian banking system shows the fact that it corresponded well to the regulatory requirements of the Accords being implemented by the BCB. There was a considerable increase in the capital adequacy ratio from the period of 2001 to 2002 which well corresponds with the preparations to the implementation of the BASEL II Accord which the BCB had proposed, in 2002, to implement. Prior to this increase, there had been a drop in the ratio towards the end of 2000 and as well as 2001. The lowest point of the two was recorded in 2001 and was blamed on the increased trading of risky assets and a growth in credit operations (risk weighted operations) within the banking system. The high volatility that this risky trading brought then resulted in the loss of good quality capital that the banks originally held (BCB, 2002: 39)

However, with the introduction of the BASEL II regulations, the average capital ratio increased considerably towards the end of 2001. This was attributed to the decrease in the credit

operations and risky trading, just as the new Accord had proposed. This growth continued in the last quarter of 2001,but despite the increases that were recorded from 2000 to 2001, the average capital adequacy ratio started falling yet again towards 2002 to reach another low point in 2003 as Figure 4.2above shows. The 2002 financial stability report states that there was a negative percentage change of 4.6% in the capital levels as compared to the previous quarter. This decline (16.1%-15.1%) was mostly blamed on the privately owned banks in the country. However, though this fall was recorded, analysis showed that the majority of the banks in the country still had capital levels that were in direct compliance with the required levels, thus showing that the fall in the general average capital adequacy ratio did not really pose any major threat to the banking system (BCB, 2002: 41). This decreasing trend towards the end of 2002 can be clearly noticed in Figure 4.2 above.

The end of the era of economic instability that had haunted Brazil from the 1990s-2002 (see Section 4.3.2) finally came to an end in 2003 and the country enjoyed a spell of confidence in the market and so the banking sector also thrived. However, the sound economy turned confidence into over- confidence and also raised the levels of securities trading. In 2005, economic growth in Brazil was being mainly fuelled by the high development of the financial sector with little contributions from the other sectors. It also meant that profit maximisation and financial growth now took precedence over capital and the soundness of the banking and the financial sectors. This saw the average capital ratio in the Brazilian banking sector fall dramatically from 2005-2006. Therefore the BCB required that more capital be held, consequently increasing the average capital adequacy level (BCB, 2004: 46; Carvalho and Souza, 2011).

In 2007 the capital adequacy ratio reached its highest level. This meant that all banks were over the required 11% limit that had been set by the BCB. It is also worth noting that the BCB had taken an aggressive approach to the capital requirement regulations which were way above the proposed BASEL level. Therefore the Brazilian banking system was very sound during the 2007 period which was the build up to the financial crisis. This is also the period that recorded very low capital adequacy ratios, low liquidity and high leverage ratios in the European and USA banking systems. This increase was explained to have been caused by the retention of the bank profits that had been recorded in 2006. Therefore this caused the increase of the total capital ratio (tier I and tier II capital) (BCB, 2007; BCB, 2008: 52). However, with the start of 2008, there was a drop in the capital ratio, a slight drop that is clearly visible in Figure 4.2. This drop was still not as harmful as may have looked as most banks still surpassed the required capital standards therefore the banking system was safe from the negative effects of the financial crisis (BCB, 2008: 52).

After the crisis there was a revaluation in the capital requirements by the BASEL Committee as they proposed the BASEL 2.5 Accord. The Accord stipulated that the financial crisis had pointed out the need for more capital and better risk management tools within the banking systems globally. Brazil was no exception to these amendments and by the end of the crisis, the BCB required that banks increase their capital levels. This then accounted for the slight increase in the average capital ratio that had seen a drop towards the end of the 2007-2008 period. This was maintained all the way through to 2010 when the BCB announced the country's plans to incorporate the BASEL III regulations into the domestic banking system (BCB, 2010). As mentioned in Chapter 3, Brazil had mainly opted to implement the Accord using a more aggressive and quick approach but later delayed the implementation process. Banks were required to have capital ratios of 11% as compared to the 8% required by the BASEL Committee. This therefore accounts for the slight increase in the average ratio between 2011 and 2012 as shown in Figure 4.2.

The Brazilian banking system, as the South African banking system, has so far exhibited resilience to the negative effects of contagion because of the high capital ratio that the banks have maintained. This soundness can also be attributed to the aggressive approach that the BCB has when it comes to capital requirements. While most countries have the same or lower levels of capital as compared to those required by the BASEL Committee, the BCB makes sure domestic banks surpass these requirements. Figure 4.2 shows that Brazil has been implementing the BASEL III capital rules.

4.2.3 China

Figure 4.3 below shows the average capital adequacy ratio for the Chinese banking system from 2000-2013.

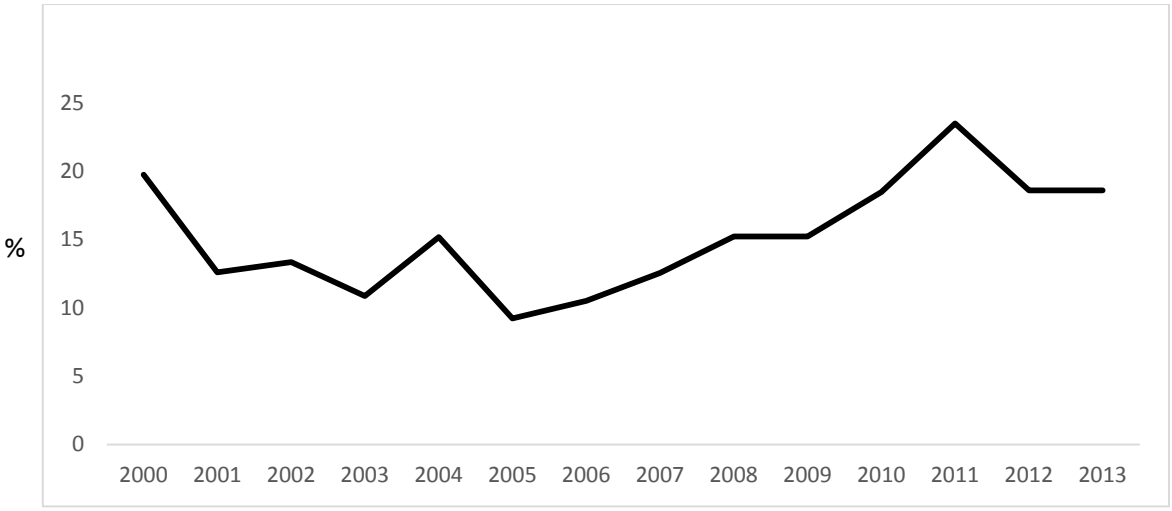

Figure 4.3: Average bank capital adequacy ratio in China, 2000-2013

Data source: Bankscope (2014)

Just like the Brazilian banks, the Chinese banking system had a fluctuating average capital adequacy ratio, except from 2000-2005. It is also visible from Figure 4.3 that prior to 2000, Chinese banks had high capital adequacy ratios but they started falling heavily from 2000-2001. A slight increase was recorded from 2001-2002 but it was short lived as there was another fall from 2002-2003. A high ratio was recorded in 2004 after a high rise from 2003. As in 2002, the increase was short lived as a drop can be seen from 2004-2005. From 2005 however, the Chinese banking system recorded high increases in capital all the way to 2008 where a slight negative percentage change was then recorded from 2008-2009. After the financial crisis, capital ratios started to increase again only to fall in 2011and then got stabilised in 2012.

In trying to analyse the reasons for the capital trends in the Chinese banking system, it is worth noting that prior to 2004, Chinese regulations did not require banks to disclose their capital ratios. This makes a full analysis of the trends of bank capital ratios in China a challenge as not all banks disclosed these ratios. However, during the period of 2000-2003, there is evidence of high capital levels in the banking system, despite the slight drops. This is because of the tough stand that the Chinese regulatory authorities took on the banks. As most of the banks were state owned, there is evidence that the majority of the high recorded capitals were in the state owned banks showing the good example that the state was setting for the privately owned banks (Molyneux*et.al,* 2014).

The other reason that the Chinese banking sector had considerably high levels of capital during this period was because of the incentive to get listed. A listed bank had better business, better ownership and better investment opportunities as compared to a non-listed bank. However, to

be listed, a bank would be expected to hold more capital to signify that it was sound. These banks would then have a better incentive to maintain this status and value so as to attract more depositors and investors and as well as avoid bankruptcy. It was also observed that during this period, all state owned banks and approximately three quarters of the privately owned banks, were listed suggesting that the levels of capital within the Chinese banking industry were normally high as shown in Figure 4.3 (Molyneux*et.al,* 2014: 17).

By the end of 2003, the China Banking Regulatory Commission (CBRC) was formed and it announced its intentions to implement the BASEL II banking regulations. The announcement came with an adjustment to the amount of capital that the banks were required to hold. Capital ratios were to be between 8% and 16% and so banks were required to increase the amount of capital that they had. This explains a sharp rise in the average capital ratio as shown in Figure 4.3, from 2003-2004. This was also as a result of a capital injection that the Chinese Ministry of Finance put into the banks as they had done in 1999 (Sun, 2009).

This second wave of capital injection was meant to re-capitalise the state owned banks and prepare them for the implementation of the BASEL II regulations. The CBRC set a timeline for the banks for the implementation of the capital adjustments and expected banks to have a capital ratio of over 8% by 2007. Despite the sudden drop in the average capital ratio in 2005, the trend that the CBRC had been hoping for was regained in 2006 going onwards as the banks started to fully implement the BASEL II capital regulations. This increase was also a result of the third wave of capital injections by the Finance Ministry on a quest to make sure that the banking sector was sound and fully capitalised. By the end of 2007, the majority of the banks in China had met the required capital levels and the capital adequacy ratio had actually increased more than they had been expected to (Sun, 2009). This increase in the capital levels can be seen in Figure 4.3 by the rise in the average ratio from the period of 2005-2007.

Not all banks in China escaped the negative effects of the 2008 financial crisis as some came out of the crisis with low levels of capital. This slight drop in the levels of these few banks can be seen in Figure 4.3 as the average ratio dropped towards 2009. The CBRC reacted by requiring that banks raise more capital through selling shares and controlling asset growth. The CBRC also made sure that capital regulation of all banks was tight and encouraged them to be less risk tolerant by issuing risk alerts to banks (CBRC, 2009: 70). Therefore with the right response from the banks, the capital levels rose by the end of 2009 as shown by the slight rise in the average ratio in Figure 4.3.

The increase in the capital levels continued into 2010 as a result of the increased number of banks that were now able to comply with the required capital requirements. The CBRC announced that it would carry on with the implementation of BASEL II in its banking system and therefore the 8% capital adequacy requirement was still to be met. By the end of that year, the capital adequacy ratios had actually exceeded the required levels and therefore that showed that the banking sector was once again sound (CBRC, 2010: 27). Figure 4.3 above clearly shows this continued increase in the ratio.

As mentioned in Chapter 3, China made an early announcement of its intentions to incorporate the BASEL III banking regulations in its banking system. Therefore in 2011, all banks were given the requirements and regulations they had to follow in preparation for the implementation of the new Accord. As a result, by the end of 2011, capital levels (as shown in Figure 4.3 above) were at their highest. At this point at least 99% of the banks in China were in direct compliance with the capital regulatory requirements which also explains the high average capital ratio. By the end of 2012 the capital ratios in China were in compliance with the BASEL requirements and the country could implement the new Accord with no problems. As China began implementing the Accord in 2013, the average capital ratio was low but however were still in compliance with the BASEL regulations (CBRC, 2011; CBRC, 2012; CBRC, 2013).

4.2.4 Capital adequacy ratio comparison

Now that the capital ratios for the individual countries have been analysed, it is important to compare them so as to be able to conclude whether they all follow the same rules and regulations and if the trends do show that. For the purposes of the comparison, three periods of interest have been demarcated on the graph. The first is the start of BASEL II implementation preparations just after 2004, which is also the period that China was preparing to open its capital markets. The 2007-2009 period is the time of the financial crisis and the last period is the beginning of the BASEL III implementation preparations.

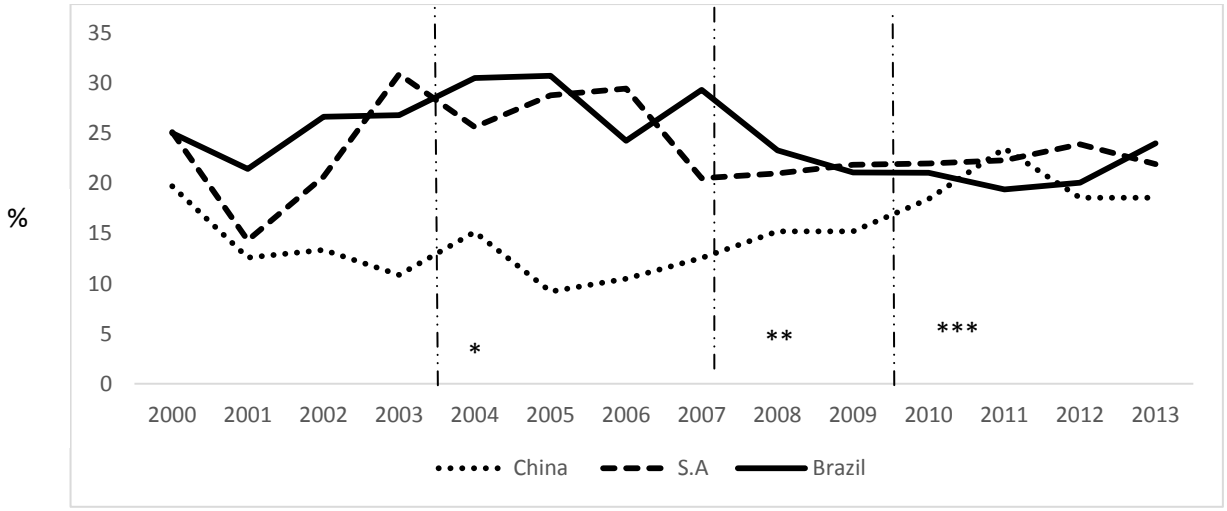

Figure 4.4: Average bank capital adequacy ratios, South Africa, Brazil and China, 2000-2013

Data source: Bankscope (2014)

Note: * Start of BASEL II implementation preparations and Chinese capital liberalisation

** Financial crisis

*** Start of BASEL III implementation preparations

Figure 4.4 shows that prior to 2001, all three countries experienced sharp drops in their average capital ratios. This could be attributed to the rise in globalisation and as well as the increase in the trade of risky securities (see sections 4.2.1 and 4.2.2). Profit maximisation took precedence over safety and soundness. With globalisation came the need to maximise profits because the trade in risky assets brought in higher returns. However, as mentioned earlier, this meant that this would leave most banks less capitalised than they should be.

The graph also shows that Brazil and South Africa have trends that move together more closely, despite having a visible mirrored resemblance from 2003-2013 (as the average capital ratio in South Africa increased, Brazil's fell). South Africa also has a mirrored trend relationship with China during the same period. The analysis clearly shows that China had a lower capital ratio from 2000-2006, as compared to the other two countries. From 2001-2004, it is also visible that while Brazil and South Africa had high ratio trends, China's ratio was low. This is probably because, while China was dealing with the effects of the 1990s Asian crisis that saw most of it banks have very low ratios, Brazil and South Africa were in their processes of reforming their banking sectors and so had slightly higher and increasing capital ratios.

The average capital adequacy ratios for all three countries increased in 2001 as shown in Figure 4.4. This is despite the fact that China still had a lower ratio as compared to Brazil and South Africa. The increasing trends in 2001 can be attributed to the measures that were taken by all three countries in limiting the negative effects of globalisation and the rise in risky trading. South Africa and Brazil amended the capital rules and also tightened regulations on risk securities trading; while China imposed strict capital rules on banks, especially on the state owned.It is apparent therefore that China, Brazil and South Africa were affected by the increase in the trading of risky assets by banks and therefore they all put up measures to make sure that their respective banks would hold enough capital to cover the losses that would come as a result of these trades. However, the increase in the average capital adequacy ratio was short lived for China as compared to the other two countries.

By the time the preparations for the implementation of BASEL II started (end of 2003), both China and Brazil showed high and increasing average capital ratios that corresponded to and were in compliance with the BASEL regulations. However, South Africa had a slight drop in the ratio but, as mentioned earlier, this was still in compliance with the BASEL regulations and just like its two counterparts, it had a sound banking system. All three countries, despite having slightly different trends still followed the same banking regulations and were all in compliance with the BASEL II Accord capital regulations. This shows the close relationship that these countries have and which, as previously mentioned, is also important for the sake of trade amongst them.

During the BASEL II period to the start of the financial crisis in 2007, Brazil and South Africa had fluctuating average capital ratio trends. This is despite the fact that their ratios were still higher as compared to China. As mentioned before, this period is also the period that China opened up its capital markets which accounted for the fall in the average capital adequacy ratio for 2004-2005 (see Section 4.4.3). From 2006 onwards, China started showing signs of increasing its average capital ratio towards the levels of South Africa and Brazil. By the start of the financial crisis, end of 2007, South Africa and China had stable and rising average capital trends showing that they were stable. On the other hand, Brazil's ratio was falling, but as mentioned in Section 4.2.2, its banks had capital ratios that exceeded the required levels. Therefore, despite this slight drop, showing that it was not fully immune to the effects of the crisis, Brazil still remained sound throughout the crisis.

By the end of 2009 as all three countries were preparing for the implementation of BASEL III there is a visible similar movement of their average capital ratios. All three countries announced

that they would implement BASEL III starting in 2013. Therefore, they all began preparations by introducing higher capitals for their respective banks. All three took a tighter stance when it came to the capital regulations and therefore recorded high average capital ratios. By 2010, the average capital adequacy ratios increased, and China recorded the highest ratios in 2011, as clearly shown in Figure 4.4. Despite having the lowest capital ratios of the three countries, Brazil was still fully complying with the BASEL capital regulations for BASEL III. Capital ratios for the three countries converged at the end of 2013 showing they are all in the right track as far as BASEL III regulations are concerned as well as indicating regulatory alignment.

4.3LIQUIDITY RATIO ANALYSIS

The liquidity of a bank is its ability to meet its obligations efficiently when the need arises and at the same time remain sound, functional and solvent. The liquidity ratio is divided into two parts which are the LCR and the NSFR (see Chapter 2) and each has its own different calculation that the BASEL Committee proposed in the BASEL III documents. However, as a result of limited data accessibility, for the purposes of this study, these two ratios will be treated as one and only one calculation will be used to calculate the overall liquidity of the banking sectors of the selected countries.

There are many formulae that can be used to calculate liquidity, but for the purposes of this study, equation 6 will be used, which shows the percentage of short term debt that a bank can meet with its liquid assets in the case that there is a sudden withdrawal or a bank run. Therefore, in the event that the ratio is low, it signifies that the bank is vulnerable to bankruptcy in the event of a bank crisis. A high liquidity ratio shows that the bank is liquid and can meet the obligations of its creditors and still remain sound and operational. The next sections will look, in detail, at the liquidity trends in South Africa, Brazil and China by matching them with the financial stability and annual reports that the respective central banks have disclosed. This would help analyse the reasons for these trends and if they match with the BASEL Accords implementation periods.

4.3.1 South Africa

The overall liquidity ratio for the South African banking system is shown in Figure 4.5 below.

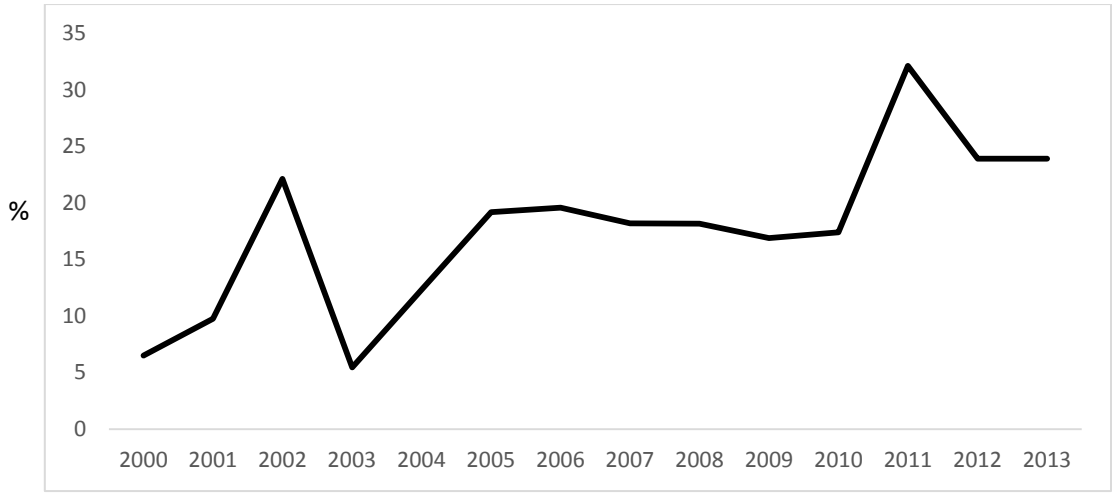

Figure 4.5: Overall bank liquidity ratio in South Africa, 2000-2013

Data source: Bankscope (2014)

Figure 4.5 shows the liquidity trend in the South African banking system from 2000-2013. As from 2000 there is a visible increase in the trend. This rise continued from 2000-2002 and then bank liquidity fell heavily from 2002 to 2003. As the graph shows, this was the biggest drop during the sample period. However, the liquidity pressures were dealt with and from 2003-2005 there was a sharp increase in the liquidity ratio as shown in Figure 4.5 above. After 2005, liquidity was maintained at a stable trend until 2009, although the ratio did fluctuate here and there. In 2010, there was yet another sharp increase which took it to the highest point it had ever been during the sample period. Despite the fall from 2011-2012, the ratio was stabilised through 2013. The reasons for these trends can be explained using the financial and banking annual reports released by the SARB.

The year 1999 was marked by a liquidity crisis within the banking sector. This period also had records of high interest rates and unfavourable business conditions. However, despite the improvements in economic growth and strides that had been made in lowering government debt, the lagging effects of the high interest rates resulted in the failures of many business and big corporates. This was a huge blow to the banking sector as this meant that most of the loans that they had granted would be defaulted or would be close to default; and these are defined as non-performing loans (SARB, 1999).

The growth in these non-performing loans was very high during this time and this caused liquidity pressures on the banks. Considering that loans are regarded as asset exposures by the BASEL Committee, this meant that the banks now had high exposures as compared to the amount of liquid assets that they were holding at that point in time. This resulted in the low

levels of liquidity that the banking sector reported prior to the year 2000 (SARB, 1999). This trend is clearly visible in Figure 4.5.

These liquidity pressures, which had mainly originated among the smaller banks and had affected them the most, had to be dealt with. Therefore, the SARB amended the liquidity requirements and required that banks hold a higher percentage of liquid assets in their books at all times. Through the Bank Supervision Department (BSD), the SARB made sure that banks made daily reports of their liquidity levels and where necessary, the BSD would even require that major shareholders of a bank inject more capital into the bank (SARB, 1999).

This was effective in driving up the liquidity levels as Figure 4.5 clearly shows a steady rise of the liquidity ratio from the year 2000 going further. The SARB, in 2000, then began the liquidity facility program (system of accommodation) for banks in a bid to make sure that banks were always fully covered in the event of a banking crisis. The liquidity facility operates under the repo rate and a cash requirement that the SARB ensures is always adhered to. The major details of how the system of accommodation works will not be dealt with here, that the main point is that the accommodation system is the other reason for the increase in liquidity from 2000-2002 (SARB, 2000; SARB, 2001).

South Africa had a major currency crisis in the 1990s which saw the Rand depreciating incredibly and this seemed to have been dealt with and liquidity was rising again, the end of 2002 saw another currency crisis hitting South Africa and this time it had a huge negative impact on bank liquidity (CPLO, 2002). Figure 4.5clearly shows this decline in bank liquidity. The SARB, through the monetary policy committee put in measures to combat the problems that had been brought about by the depreciation of the Rand. Therefore the liquidity problems were also managed so as to ensure the continued soundness of the financial sector. The SARB maintained the liquidity requirements as well as the system of accommodation, which again proved to be effective in bringing back liquidity levels to where they had to be (SARB, 2003). The rising trend of the liquidity ratio in Figure 4.5,from 2003-2005,clearly backs up this argument.

In 2006, the liquidity situation in the banking system was still stable and improving. The amount of liquid assets that the banking sector held by the end of that year signified 112% of the required liquid assets, which was still high despite a slight fall from 119% in 2005(SARB, 2006).Also, the amount of non-performing loans during that year had fallen considerably and therefore this meant that the banks were not only performing efficiently but were sound and making profits. This however did not mean that the SARB stopped implementing additional measures to maintain and improve the liquidity situation in the banking sector. Supervisors were

requested to always ensure that banks had sufficient and high quality liquid assets and as well as liquid management systems to deal with liquidity issues (SARB, 2006).

The year 2007 marked the beginning of the financial crisis and South Africa was not entirely immune to the effects of the global financial turmoil. The increase in the trade of risky securities by banks and financial institutions and as well as the unwillingness of international investors to invest because of the fear of the unstable market, all resulted in the fall of the global liquidity levels. Although South Africa reported that the liquid assets that the banks had in 2007 exceeded the required levels, there was a recorded drop in overall liquidity ratio which decreased from 2007-2009 as seen in Figure 4.5. This was caused by the increase in the deposits and short term funding during that period, which meant the even when banks were improving their liquid assets, the liquidity ratio kept falling (Mabwe and Webb, 2010: 42).

The BASEL Committee of banking supervision then introduced the liquidity ratio to monitor the liquidity levels in the banking systems and as well as reminding banks when there was the need to improve on liquidity. Banks were required to hold high quality liquid assets that would offset the increase in the deposits and short term funding. By the end of 2009 when South Africa announced its intentions of implementing BASEL III, the banks were already on track in improving the liquidity situations in their books. This resulted in the recorded high increase in the liquidity ratio from 2010 as Figure 4.5shows. Despite the fall in the liquidity ratio in 2011, the South African banking system has been sound liquidity-wise. Since the beginning of 2013, implementation of BASEL III has meant that liquidity levels are stable and on the right track to reach 100% as required. The liquidity ratio as required by BASEL III was discussed in full in Chapter 2.

4.3.2 Brazil

The overall liquidity ratio for the Brazilian banking system is shown in Figure 4.6 below.

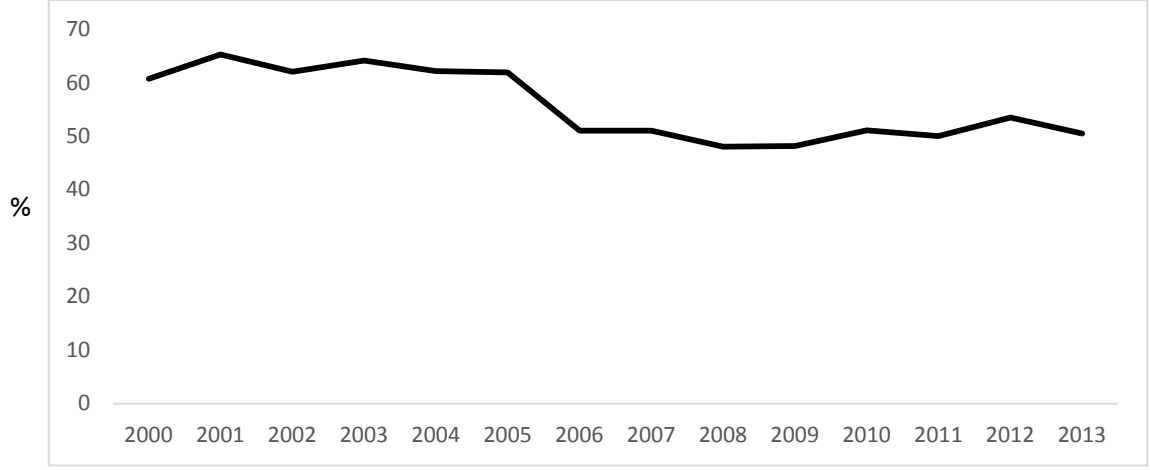

Figure 4.6: Overall bank liquidity ratio in Brazil, 2000-2013

Data source: Bankscope (2014)

Just like South Africa, as the year 2000 approached, an increase in the liquidity ratio can be seen.It was short lived as by the end of that same year, the ratio started to fall. The drop lasted from the end of 2000-2002. Liquidity pressures in the banking system seemed to have been fixed by the beginning of 2003 but as 2004 came to an end, there was a sharp fall of the liquidity ratio. The fall lasted the whole year of 2005 and then liquidity was revived in 2006. The fluctuations continued all the way through the 2008 financial crisis to the end of the sample period, 2013.

According to Moore (2007), during the 1990s there were more than sixteen banking crises that hit the Latin American countries and Brazil was not immune to the effects that these crises brought. As the liquidity trend in Figure 4.6shows, prior to the year 2000, the liquidity ratio was low. On top of the currency crisis (see Section 4.2.2), the banking crises in the Latin American countries may also have contributed to or may have been caused by the evident liquidity loss. It is well apparent, as mentioned earlier in Chapter 2, that one of the many contributors to; and effects of a banking crisis is the loss of liquidity and this can well explain the low trend prior to 2000 shown in Figure 4.6.

Brazil went through a currency crisis in the late 1990s which contributed to the low banking activity. As a result of this, the government introduced measures that would deal with bringing the economy back on track. With the economy stable again, the banking sector would also perform efficiently. According to Amante*et.al* (2007), these policy reforms that the government took made the economy and as well as the banking sector better. Therefore, an improved economy meant boosted investor confidence and therefore the lack of liquidity would be limited. This fully explains the increase in the liquidity ratio from 2000-2001.

The end of 2001 saw the beginning of a balance of payments crisis in Brazil, which was also fuelled by the unstable political environment in the country at that time. Although the impact of this crisis was minimal as compared to the effects of the crisis in 2001, it left a slight negative dent on the banking system. This type of environment, which is associated with high interest rates, high inflation and government defaults, repels potential investors and causes existing investors to disinvest from the country which results in a high capital outflow (Carvalho and Souza, 2011). The negative effects on the economy that were caused by these issues can explain the fall in the liquidity ratio from the end of 2001 reaching a low point in 2002, a trend clearly seen in Figure 4.6.

Although much literature states that contagion from the Argentine balance of payments crisis was the major reason for the economic meltdown that happened in Brazil, the political issues that had been raging on in the country since the end of the 20th century also helped to fuel the 2002 problem. Therefore as soon as the crisis in Argentina was fixed with the help of the International Monetary Fund (IMF) as 2002 came to an end, it meant that there was more room for the Brazilian government to be flexible and try to fix the internal problems that were facing the country. The stable political environment proved to be a success as it resulted in a stable economy, which ultimately attracted investors and restored market confidence Tedesco Lins (2011: 77). This healthy environment, which was maintained all the way to the end of 2004, meant that the liquidity ratiowould be high, as clearly shown in Figure 4.6.

With the economy starting to take greater shape since the 1990s-2002 crises, confidence turned into over confidence for the financial sector and the banks as well. As mentioned before, the Brazilian economy was mostly being financed by the strong and accelerated growth in the financial sector. This meant that, as 2005 approached, the rise in the trade in risky securities and the prioritisation of profit maximisation over soundness and safety; meant banks were willing to forgo safe liquidity and capital levels (for capital levels see Section 4.2.2). This resulted in the drastic fall of the liquidity ratio from 2004-2005, a trend clearly visible in Figure 4.6above (Carvalho and Souza, 2011: 27).

Brazil still enjoyed the benefits of a stable economy and with the implementation of BASEL II the banking sector was stable and sound as compared to most developing countries. Tighter bank regulations by the BCB increased capital and liquidity ratios again in 2006-2007. 2007 was the beginning of the global financial crisis and as much as the Brazilian economy and financial sectors were sound, the country was not fully immune to the effects of contagion again. The end of 2007 saw a drop in the liquidity ratio, a trend that was maintained until the end of 2008. Some analysts mention that the implementation of BASEL II helped Brazil to pull through the financial crisis with less harm done to its banking sector as compared to other countries that had not adopted the regulatory principles (Janot*et.al.* 2008).

This might be true as the liquidity ratio remained high and steady throughout the financial crisis, which lasted to 2009 and even 2010 for some countries. The trend in Figure 4.6also shows the increase of the ratio in 2011, right when the BCB announced that the principles of the BASEL III Accord would be introduced to the Brazilian banking sector. Although full implementation of the liquidity ratio will only be in 2015, countries like Brazil who have begun the implementation of BASEL III have had their banks raise the liquidity ratio gradually since 2011. This is so that

the ratio be 100% by 2015 (as required by the BASEL Committee). It also explains the high to normal liquidity ratio trend from 2011 to the end of 2013 as shown in Figure 4.6. The Brazilian banking sector is on the right track in the implementation of the liquidity ratios that are required by BASEL.

4.3.3 China

The overall liquidity ratio for the Chinese banking system is shown in Figure 4.7below.

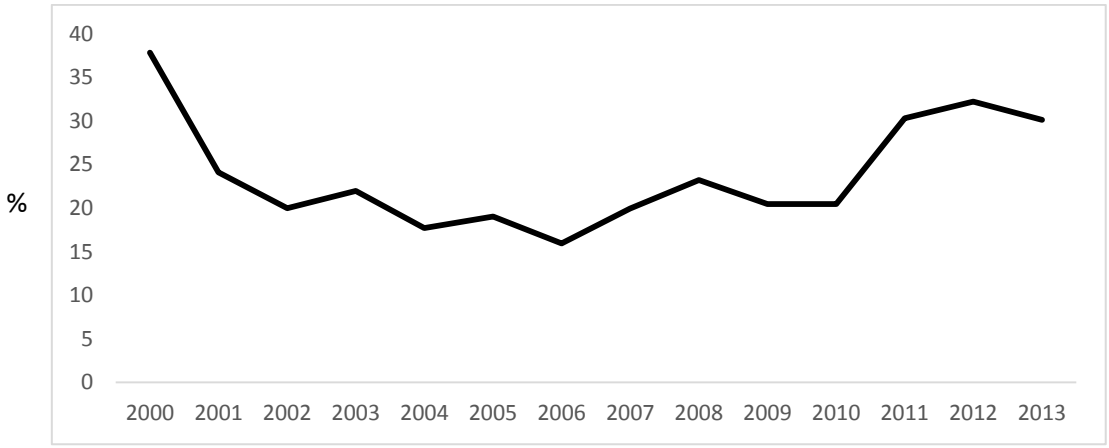

Figure 4.7: Overall bank liquidity ratio in China, 2000-2013

Data source: Bankscope (2014)

China's liquidity ratio trend was in a falling state prior to the year 2000. The fall in the ratio almost picked up in 2001 but continued to fall to mid-2002. It was revived from mid-2002 but this was not for long as mid-2003 the liquidity ratio started falling again. This can been seen to be the trend all the way to mid-2006. However, China had a high liquidity ratio in their banking system during the build up to the financial crisis, as the graph shows a sharp rise from 2007 to 2008. However, they were not fully immune to the crisis as the liquidity ratio fell during the crisis to 2009 only to be revived and stabilised thereafter. As the CBRC was preparing banks for BASEL III implementation in 2010, there was a visible increase in the liquidity ratio as well. This continued up to 2012 and then there was a slight dip towards 2013. The explanations for these trends will thus be discussed below.

China was a closed economy (government was in control of the banks and financial sector) up until the 20th century when it decided to liberate its capital and financial accounts and so it became a part of the global economy. This meant that liquidity in the Chinese banking sector (1990s-2002) was not measured according to the amount of liquid assets the banks held or the amount of loans they issued but rather mainly according to the reserve requirements that would

be set by the People's Bank of China (PBoC). Also, the Chinese currency was not yet being traded internationally, securities trading was still in the premature stages and the banks were only in there to serve as deposit holders. Banks would only give out loans to enterprises under the direct and monitored request or orders from the state, meaning that there were no individual loans. (Gottschang, 2001: 5).

As a part of its economic and banking reform, the government made capital injections into the State Owned Commercial Banks (SOCBs). The Chinese SOCBs are the largest banks in China and therefore in a way, their performance is crucial to the whole industry and also reflects the performance of the whole industry. From the late 1990s-2002, the reform phases included the lowering of the bank reserve requirements from 13%-8% which freed up a large amount of liquidity in SOCBs and the banking sector (Okazaki, 2007: 20). This therefore explains the sharp drop in the liquidity ratio from 2000-2002 as shown in Figure 4.7above.

In 2002, the PBoC also lowered liquidity reserve requirements for the banks as well as having the non-performing loans that the banks had in their books be written off. The SOCBs had the highest levels of non-performing loans and therefore the decision to right the loans off were made to ensure that the four big banks would remain efficient and sound. Non-performing loans, as mentioned in Section 4.3.1, can result in liquidity pressures for banks and therefore can consequently result in low bank liquidity (Bihong, 2006). Though this would not be the last time non-performing loans would be written off for banks, it did prove to be successful in 2002 as the liquidity ratio improved from 2002-2003, as Figure 4.7shows.

By the end of 2003, the Chinese government realised that the banks were not making enough profits from issuing loans as much as they should have been. Therefore, despite the need for a low level of non-performing loans and low banking risk, the PBoC relaxed the laws that governed banks' abilities to lend by cancelling the lending rates ceiling and as well as the floor for deposit rates. This meant that banks were now free to lend to the general public as well. This also meant that the level of risk that the banks were now facing had been increased as well as the prospective level of non-performing loans (Okazaki, 2007). As a result of the profit maximisation approach, bank liquidity was sacrificed along the way. This clearly explains the fall in the liquidity ratio from 2003-2004as shown in Figure 4.7. However, the ratio went up again from 2004-2005 as the non-performing loans in the SOCBs were cancelled again (Bihong 2006: 138). This trend can be seen in Figure 4.7 above.

The final phases of the Chinese financial reform came end of 2005 when the government opened the banking sector for foreign banks. This move was meant to increase competition as

the foreign banks would challenge the domestic banks on a business standpoint, thus also improving the soundness and effectiveness of operations within the banking sector. However, it also meant that the level of risk in the banking sector would rise as the amount of loans that were being given out would also increase (Bihong, 2006). The high rate of competition meant that banks would now forgo safety (capital and liquidity) for profit maximisation and market dominance. It also resulted in the growth of shadow banking in China, which is the risky off-balance sheet trading and lending done by banks (Dang *et.al,* 2014). This considerably affected the levels of liquidity, which explains the negative trend in the ratio from 2005-2006 as shown in Figure 4.7.

Despite the negative effects that capital liberalisation had caused, it is also important to note that the increase in competition and bank activity meant there would be a need for better market regulation, better corporate governance, corruption management and as well as transparency laws. The CBRC then tightened the regulation on lending, deposit rates, shadow banking and required banks to hold more capital and required reserves (Bihong, 2006). This resulted in the rise ofthe liquidity ratio from the end of 2006-2008 as shown in Figure 4.7. Tight CBRC bank regulations were credited for taking the banking sector through the 2008 financial crisis.

However, the sector was not entirely immune to the crisis partly because of the foreign banks that were trading in the country, while contagion played a role in bringing the liquidity ratio down as well. This explains the fall of the ratio, as shown in Figure 4.7,from 2008-2009. Liquidity pressures were stabilised after the crisis and end of 2010 the CBRC announced China's intentions to implement BASEL III. As mentioned in Chapter 3, Chinese banks went through a process of preparatory phases for the implementation of the accord and this included raising the liquidity ratio so as to meet the 2015 regulations set by the BASEL Committee. This explains the increase in liquidity from 2010-2012 seen in Figure 4.7. Despite a reported liquidity crisis in the Chinese banking sector in 2013, the country is on track to achieve the BASEL set targets by 2015.

4.3.4 Liquidity ratio comparison

Figure 4.8below shows the comparison of liquidity ratios for South Africa, Brazil and China during the period of 2000-2013. As mentioned before, it is essential to do a comparison of the liquidity ratios of all the three countries so as to establish if all are in the same track to achieve the BASEL set targets. As in Section 4.2.4, three areas of interest have also been depicted on the graph to help with the analysis.

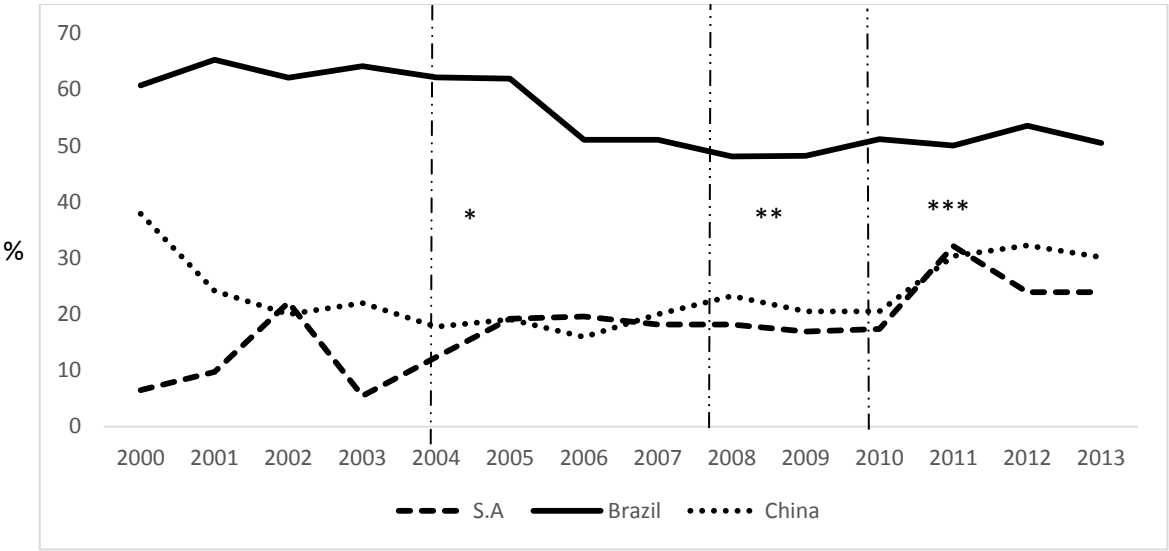

Figure 4.8:Overall liquidity ratios, South Africa, Brazil and China, 2000-2013

Data source: Bankscope (2014)

Note: * Start of BASEL II implementation preparations and Chinese capital liberalisation

** Financial crisis

*** Start of BASEL III implementation preparations

Of the three countries, Brazil seems to have the highest levels of liquidity. The liquidity ratio trend in Brazil, however high was more volatile as compared to South African and Chinese trends. The high liquidity ratio trend in Brazil, as mentioned in section 4.3.2, is as a result of the tighter regulations that are imposed on the banks in Brazil by the BCB. Generally, South Africa and China showed stable liquidity ratio trends during the sample period, especially from 2005-2010.

Prior to 2000, Brazil and South Africa had low liquidity ratios as compared to China, as Figure 4.8 shows that their trends were in a state of recovery. This is because in the late 1990s, Brazil and South Africa experienced moments of low liquidity as both countries experienced currency crises during this period. Brazil was also going through the phases of its economic reform and was unfortunate that there were plenty of banking crises that affected the banking sector during this time. In South Africa on the other hand, recovery from the high government debt and the after effects of Apartheid meant that the banking sector was not as sound as it should have been.

End of 2002, the liquidity ratios in Brazil and China increased, while South Africa's liquidity fell. This is despite the fact that economic issues that were affecting Brazil and South Africa were the same as compared to those of China. Therefore one would have expected the trends in South

Africa and Brazil to be more or like the same. However, as all countries started the preparations for the implementation of BASEL II, there were increases in the liquidity ratio trends from 2003. This was especially for South Africa and China whose trends, as mentions earlier, corresponded more. Brazil had a stable liquidity ratio trend during the preparatory period as compared to the rising trends of South Africa and China. During the BASEL II period, Brazil and China exhibited falling liquidity ratio trends as compared to South Africa. It is worth mentioning that the fall in the liquidity ratio in China during the BASEL II period was as a result of capital liberalisation while in Brazil it was the rise in the trading of risk securities. These reasons for the fall in the liquidity ratios in Brazil and China are generally related. During this period, the liquidity ratio in South Africa had increased and stabilised as the financial crisis build up came close.

Brazil and China fixed the liquidity problems in their respective banking sectors at the end of 2006. During the financial crisis period, as shown in Figure 4.8, all three countries had stable liquidity ratios, therefore were sound and not vulnerable to the bankruptcy as the crisis worsened. These stable ratio trends can be attributed to the full implementation of the BASLE II Accord by the South Africa, Brazil and China in an effort to meet the international regulatory standards. Despite the fact the levels of "shadow banking" in China and risky securities' trading in Brazil had increased considerably since 2005, the tight capital rules that came with the implementation of BASEL II helped keep the banking systems liquid and safe.

All countries had increased liquidity ratios after 2010, especially South Africa and China who started implementation preparations of BASEL III sooner that Brazil. As mentioned in Chapter 3, although Brazil announced an early implementation plan, they only started preparation late 2011. All countries do show that they are on the right track to reaching the 2015 set targets by the BASEL Committee as Figure 4.8 shows they all had the same trends of liquidity ratios after 2010.

4.4 LEVERAGE RATIO ANALYSIS

The final part of the ratio analysis deals with the controversial and complicated leverage ratio. This ratio, despite the fact that it had existed all along and banks would only use it when they thought it was necessary for reducing systematic risk, was only formally introduced as part of the BASEL III package in 2010 and has been the topic of debate between the banks and the BASEL Committee. The definition of leverage, though looked at in previous chapters, has to be fully defined again for the purposes of the analysis. The term leverage is used in so many contexts and applies to each differently. According to the SARB (2011: 38), "In essence, leverage refers to the

funding of assets and investments by typically borrowing money." Therefore as mentioned in Chapter 2, as much as a high leverage may mean more profits for a bank, it also means it is highly exposed (to debt) and would have its equity wiped out in the event that the returns from the leveraged investments are low and loans are defaulted. This was the case that fuelled the 2008 financial crisis and so the BASEL Committee proposed that banks have a minimum leverage ratio of 3% (SARB, 2011). Banks are therefore encouraged not to finance their equity with debt to more than this required level (National Treasury, 2011: 18).

As mentioned in Chapter 2, the leverage ratio will only be fully implemented in 2018 when the disclosure requirements take effect. However, preliminary implementation already started in 2013 and all banks are expected to have achieved the set levels by 2017. This basically means that, for this ratio analysis, during the period prior to 2013 the leverage ratio was not binding as it had not yet been proposed as a regulatory tool. This, however, does not mean that the ratio did not exist. As mentioned earlier, banks would use it at their own discretion so as to limit the effects of systematic risk. Analysis of the trends will look at how important the ratio has been to the banks as well as if they are any closer to reaching the set targets for 2018.

The basis of the analysis will be on the reasons why the leverage ratio changes to begin with. Since the disclosure of the leverage ratios will only be mandatory in 2018, it means the period prior to the introduction of BASEL III, banks had not been disclosing their leverage ratios or had not been calculating them at all. It is important then to look at the components that make up the leverage ratio (as per Equation5) as these components contribute to the movements shown in the figures below. Considering the leverage ratio is calculated using Equation 2 (according to BASEL) and Equation 5 (in general),Ozcan*et.al.* (2012: 12) states that, the increase in the value of the assets would subsequently increase both the numerator and the denominator; but equity increases by a larger proportion as compared to assets. In such a case, it would mean that the leverage ratio would still be low posing no exposure problems to the banks.

However, Ozcan*et.al* (2012: 12) goes on to mention that, during the 2008 financial crisis, banks would now use this increased equity to also increase lending, which would meant they now had a larger proportion of increased assets in the form of loans. These assets (loans) are what the BASEL Committee deemed as the exposure measure and by increasing their assets in this manner it means that the growth in assets was not inversely related to leverage anymore. Therefore an increase in assets through a growth in loans would significantly decrease the leverage ratio, as according to Equation 5. It is also important to note that an increase in loans and advances by banks and the financial institutions would mean increased economic activity and

growth, but also means that banks would now be more exposed than they had been before the increase in the loans and advances. Therefore as much as this trend might be good for the economy, it brings more risks to the banking sector in times of unexpected financial stress because of defaults.

To analyse the trends before BASEL III came into existence, the text will focus on the growth in banks' assets and loans from 2000-2013. Constant references will be made to Section 4.2 as capital/equity is one of the leverage components. This would give a better view as to how leverage moved during the period that was not regulated with the leverage ratio as according to BASEL III. This approach has been chosen to compensate for the lack of necessary reporting on the leverage ratio by banks under the sample period. This consequently makes analysis of the leverage ratios different from the analyses of the capital adequacy and liquidity ratios.

4.4.1 South Africa

In Figure 4.9 below, the leverage ratio trend in the South African banking system is depicted.

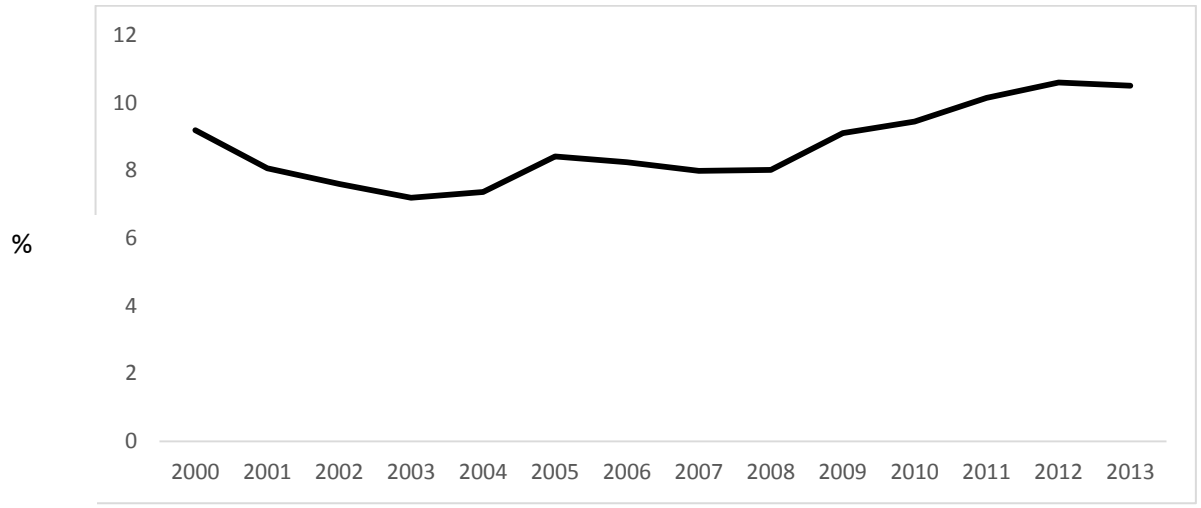

Figure 4.9: Overall bank leverage ratioin South Africa, 2000-2013

Data source: Bankscope (2014)

Figure 4.9 shows that bank leverage ratio in South Africa during the sample period has been relatively high. This clarifies the point made in the previous sections, which have shown the banking system to be sound and rather effective. As the year 2000 started, the leverage ratio wasfalling and this trend continued until the end of 2003. After that the ratio started rising gradually, first by a small percentage in 2004 and then sharply in 2005. Reasons for this trend will be fully discussed below. The leverage ratio fell from 2005 to end of 2008 and then rose sharply

again during the peak of the financial crisis. This rising trend did not stop until the end of 2012 when it was finally stabilised. This timeline corresponds well with the implementation of BASEL III in South Africa. To analyse these trends in the leverage ratio in the South African banking system from 2000-2013, annual reports released by the SARB will be used to provide additional information.

The SARB (2000) states that there was an increase in the value of assets from 1999-2000. This increase came by as market and consumer confidence were revived after the currency crisis (see Sections 4.2.1 and 4.3.1). An increase in the value of assets, as mentioned earlier, would have meant an increase in the value of capital and there was surely an increase in the capital ratio in the year 2000 as can be seen in Figure 4.1. Therefore, the increase in both capital and assets' value in 2000 meant that the leverage ratio would have been low or in a decreasing mode as compared to the previous years. This decline was also facilitated by the fact that, even with the growth in assets and equity, banks did not increase their total lending. There was no change in the loans and advances sections, which remained fairly unchanged (SARB, 2000). This therefore reduced the amount of exposure to the banks and so in turn reduced the leverage ratio as clearly shown in Figure 4.9.

According to the SARB (2001: 45), in 2001, bank assets increased by R226.3 billion which is at least a 27.6% growth rate, as compared to the value of 2000. This is almost double the growth of the previous year, which meant that there was also a major increase in the capital that banks held by the end of 2001 (SARB, 2001). This much increase in capital and assets would have given banks the much needed confidence to increase public lending, but this was not the case. Although there was a slight growth in loans in 2001 it was only of the smaller components of the loans and advances category. The major parts of this class, which included mortgage loans and overdrafts and other loans, rather decreased and by the end of the year 2001 there was an overall negative increase in the loans that banks had given out (SARB, 2001: 45). This therefore meant that exposure remained low and so the leverage ratio continued to fall. This trend can clearly be seen in Figure4.9 above as it continues until end of 2003.

The end of 2003 however brought a slight turn around in the bank trends in South Africa. According to SARB (2003: 45), assets increased in value as usual, as per the previous years, but the slight difference with the growth in 2003 is that it was slightly negative as compared to the previous year. Assets grew by 25.2% in 2003 as compared to the 27.6% in 2002. As shown in Figure 4.1, there was a significant drop in the capital ratio from 2003-2004, which meant that an increase in loans would have increased exposure and leverage consequently. This is was the case

in 2003 as by the end of the year loans and advances had increased by 11.3% as compared to 10% the previous year (SARB, 2003). Figure 4.9shows the slight increase in the leverage ratio from 2003 to 2004 that came as a result of the above-mentioned loan increases.

Asset values, for a consecutive year, recorded a negative increase in 2004. According to SARB (2004: 61), assets increased by R118.3 billion in 2004 which is an 8.6% growth rate. Compared to the 25.2% growth in 2003, one could look at this as being a significant fall in the value of assets during 2004. The 2004 annual report also mentions that there was a major fall in asset values the first half of 2004, which could also be the contributing effect to the slight drop in capital adequacy ratio during that year as was shown in Figure 4.1. In such a case, it would have been wise for banks not to increase the amount of exposure, through loans, so that they stay sound. However, despite the fall in asset values, loans and advances increased during 2004 having grown from 8.1% in June that year to 11.2% by December that same year (SARB, 2004: 62). What this meant was that with the fall in capital and value of assets, an increase in loans and advances would also increase the level of banks' exposure; thus raising the level of the leverage ratio as well. This rise can be clearly seen in Figure 4.9 from 2004-2005.

Banks improved their asset value holdings in 2005 as assets increased by a value of R179.1 billion, a 12% growth rate as compared to the 8.6% the previous year (SARB, 2005). This significant increase in the value of assets duly put the banks in a better position to weather any risky storms that were to come their way. As anticipated, banks did increase their lending as loans and advances increased by a higher margin in 2005 as compared to 2004. Despite this high increase in loans and advances, exposure on the banks did not really show while the leverage ratio fell as shown in Figure 4.9 above. This might be attributed to the strict capital rules that the banks were under and the considerable growth in asset values. This fall in the ratio continued all the way to the beginning of 2008, the financial crisis.

Although banks' assets increased in 2007, this is the year of the housing bubble and therefore the growth in loans and advances was also soaring. This growth was mainly fuelled by the rise in the increase in the mortgage loans and overdrafts and loans (SARB, 2007: 67). According to SARB (2008), there was also an increase in the loans that banks issued on resale agreements as well as credit card debtors. This increased exposure required that banks have more than enough capital cushion to cover them during the times of financial stress, but with the small growth in capital meant that leverage would be very high which explains the sharp increase in the leverage ratio as shown in Figure 4.9. To add up to this, the rate of risky trading had also gone up globally and

South Africa was no stranger to this as well. This growth in risky trading also contributed to the leverage ratio spiking up from 2008-2009.

The leverage ratio has since been under check ever since the South African government announced that the BASEL III regulations will be implemented. As mentioned in Chapter 3, South Africa has requested domestic and foreign banks to have a minimum leverage ratio of 4% as compared to the BASEL mandated minimum 3%. This was enforced since 2013 despite the fact that the final implementation will be in 2018. Therefore banks have been adjusting to accommodate the new rules. By the end of 2014, an analysis of some of the big banks in South Africa revealed that the bank with the highest leverage ratio was Nedbank with 8.5%, ABSA had 8%, Standard Bank 7.1% while FirstRand Bank had 7% (KPMG, 2014). Figure 4.9 clearly shows the leverage ratio trend continuing to increase at the end of 2013 showing that South African banks are on the right track to achieve the government and BASEL set targets.

4.4.2 Brazil

The leverage ratio in Brazil from 2000-2013 is shown in Figure 4.10 below. It has been fluctuating and just like South Africa, high as well. The ratio increased at the start of the year 2000-2001 and fell briefly until mid-2002 before rising sharply again until the end of 2006. The ratio thendropped in 2007 as the financial crisis was building up but this was short lived as it increased again from 2008-2010. Thereafter it decreased and was stabilised in 2013. This last trend from 2010 corresponds with the preparations and actual implementation of the BASEL III Accord in Brazil. In analysing the reasons for this trend in the leverage ratio, it will be evident that the capital and liquidity trends that were dealt with in Sections 4.2.2 and 4.3.2, respectively, willmove more like the leverage ratio trends in most cases.

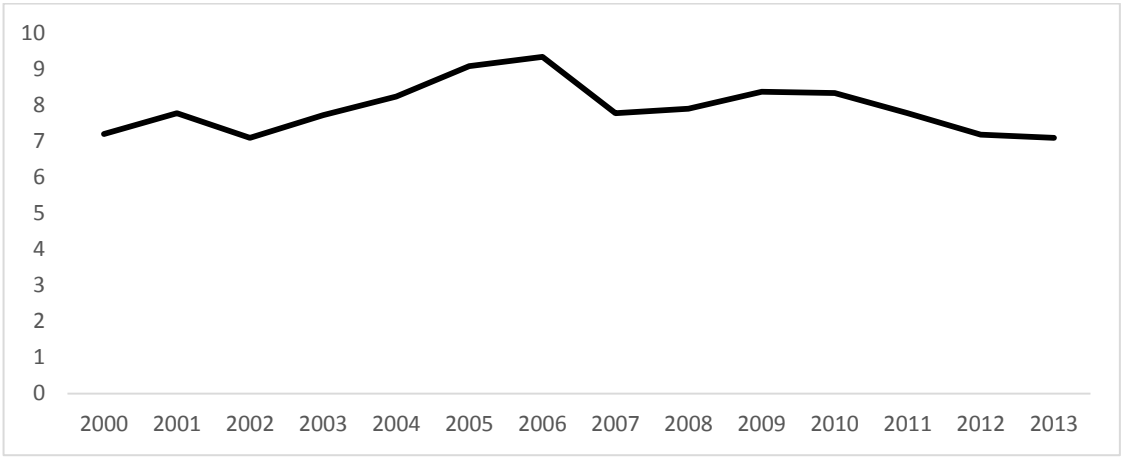

Figure 4.10: Overall bank leverage ratio in Brazil, 2000-2013

Data source: Bankscope (2014)

The leverage ratio in Brazil in the year 2000 showed an increasing trend, at the same time the capital and liquidity ratios in Figures 4.2 and 4.6, were falling. The fall in capital and liquidity during the series of banking crises in Brazil in the late 1990s and early 2000 meant that the banking system was neither sound nor as efficient as it should have been during such a time of financial stress. One would expect that the levels of loans and provisions to the public or exposure in general would fall during this time, but this was not the case in Brazil in 2000. According to BCB (2000: 62), the loans that the public were allowed access to grew by 129%. This therefore exceeded the value of assets held by banks. In the case of defaults, the banking system would be left bankrupt and would face possible collapse. This explains the sharp rise in the leverage ratio in 2000-2001 as exposure in the banking sector was high.

The leverage ratio fell in 2001, however for the wrong reasons. The Brazilian economy, as mentioned in Section 4.3.2, suffered the effects of a currency crisis which brought economic activity to a negative slump. As a result of this there was a recorded fall in the confidence of the public as well as the financial sector. This meant that as much as the banking system had enough capital (see Figure 4.2) and high valued assets (there was an asset growth of 5.9% in 2001), the leverage ratio would either remain the same or fall if this growth was not used to grant loans and advances. By the end of 2001, there was a sharp fall in the demand for goods and services and investment fell meaning that the banking sector suffered profit wise but were not at risk as the fall in aggregate demand meant that there was also a drop in the demand for loans and advances (BCB, 2001: 66; BCB, 2002: 29). These can therefore be attributed to the fall in the leverage ratio from 2001-2002 as shown in Figure 4.10 above.

The period from 2003-2006 exhibited a strong economy, which brought in more investment and more demand for credit from the public and companies. For banks, this was a huge boost and was the perfect environment to flourish and make high profits. In 2003 alone, the growth of credit operations was 8.3% while in 2005 growth in loans and advances was 21.5% (BCB, 2003; BCB, 2005). As mentioned in Sections 4.2.2 and 4.3.2, the increase in economic activity from 2003-2006 increased the risk tolerance in the financial sector and therefore the trade in high risk securities also increased. This, together with the loans and advances exposure, meant that exposure in the banking system increased exceptionally. This explains the sharp rise in the leverage ratio from 2003-2006 as shown in Figure 4.10. The graph also shows that the leverage ratio reached its peak in 2006, with a sharp increase from 2005. This was caused by the fact that as exposure (loans and advances and risky trading) increased, capital fell sharply as shown in Figure 4.2.

However, the increasing trend of the leverage ratio stopped at the end of 2006 as the growth in loans and advances slightly fell while capital and asset values increased as the BCB took a tighter approach to regulation. In 2007, general loans and advances to the public recorded a 0.2% drop as compared to the previous year, while Figure 4.2 shows a sharp increase in the capital adequacy ratio which shows that the banking system was not only sound but had reduced exposure. By 2007, the beginning of the financial crisis, banking exposure was rising again. Despite the small drop in loans and advances, there was a fall in the capital adequacy ratio (which meant a fall in asset values as well), as shown in Figure 4.2. This was during a time when there was an increase in the trading of global risk securities which generally increased exposure in the banking system (BCB, 2008). This increasing trend, as shown in Figure 4.10, continued all the way through the financial crisis (2009).

As Brazil announced its early intentions of implementing the BASEL III Accord, preparations for implementing the ratios also started early. This is despite the fact that the actual implementation phase only started later than expected (see Chapter 3). Early preparations meant an increase in capital starting in 2010. It also meant better regulation of the trading of global risky securities that had increased exposure in the years before. It also meant new rules for banks with regard to the granting of loans and advances (BCB, 2011). All these amendments helped to bring capital and liquidity ratios up as well as bringing down exposure, as shown in Figure 4.10. The Brazilian banks therefore seem on track to achieving the BASEL III set targets.

4.4.3 China

The leverage ratio in the Chinese banking system from 2000-2013 is shown in Figure 4.10 below.

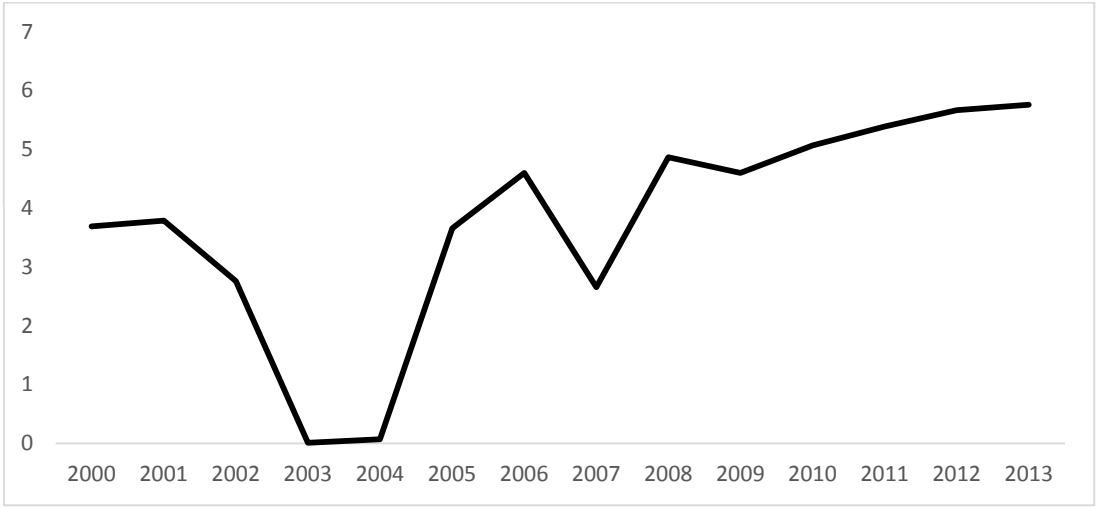

Figure 4.11: Overall bank leverage ratio in China, 2000-2013

Data source: Bankscope (2014)

The leverage ratio trend shown in Figure 4.11 indicates that the Chinese banking system has had relatively low exposure during the sample period. The ratio fell from 2000 to 2003 then from 2003-2004, the graph displays a flat trend which shows the lack of data for this period. The ratio started going up significantly until 2006. The exposure was briefly lowered for a year from 2006-2007 but it started rising again to 2008. The leverage ratio then fell for a short period from 2008-2009 after which it spiked again all the way to 2013.

As mentioned in Section 4.3.3, the Chinese banking system took long not only for it to develop but to open up to the global community as well. This makes analysis of the trends before 2002 challenging to explain. Just as was done in Section 4.4.2, there is going to be regular reference to the trends in Sections 4.2.3 and 4.3.3 especially for periods prior to 2004. This is because prior to 2004, the banks' balance sheet and business trends in China were mainly under the direct control of the government and reports were not required to be published at this time. Therefore movements of the leverage ratio will only be analysed according to how the government regulated the components that make up the leverage ratio, as mentioned in Section 4.4.

With the Chinese government controlling the banks' and the financial institutions' activities, the importance of risk management and soundness in the financial sector were made the top priority. The Chinese banking sector was not always well capitalised, but still safe from the effects of globalisation as well as financial stress. As mentioned in Section 4.2.3, as part of the Chinese reform, there were phases of capital injection by the government performed in the banking sector. Therefore the Chinese banks would not only maintain high valued assets but as a result of these capital injections, they would also have the cover they needed in the case of financial stress. At this point in time, the only loans and advances that the Chinese banks were allowed to grant were to the business sector and had to be approved by the government. This meant that the level of exposure in the banking sector was not even remotely high as even trading of securities was under the microscope (Schmidt, 2009).

As part of the Chinese reform, the government also went through phases of cancelling non-performing loans for the SOCBs (see Section 4.3.3). On top ofcreating liquidity pressures on banks, non-performing loans can also raise the level of exposure for the banks. Therefore this move not only raised liquidity in the 2000-2004 period but also lowered the leverage ratio considerably (Bihong, 2006). The falling trend of the leverage ratio can be clearly seen in Figure 4.11 above.

As soon as the government realised that banks in China would help fast track the economy if they were given the freedom to grant loans and advances as well as trade more extensively in

international securities, everything changed. As part of its reforms, the Chinese government put bank regulation in the hands of the CBRC and as well as prepared the banking sector for the introduction of international banks. Relaxed capital requirements, more risky trading freedom and relaxed loan granting laws therefore raised the leverage ratio from 2005-2006 as shown in Figure 4.11. By the end of 2005, foreign banks were allowed to operate in the Chinese market. (Bihong, 2006; Dang *et.al,* 2014).

However, as mentioned in Section 4.3.3, the rise in the levels of "shadow banking" as well as the introduction of foreign banks into the Chinese market initiated the need for tighter regulatory controls on banks. Therefore the CBRC not only raised capital requirements for all banks, but made them tougher for the foreign banks and those domestic banks that would trade globally. This helped to raise the capital adequacy ratio as well as the liquidity ratio and it also helped in reducing the level of banks' exposure, so there was drop in the leverage ratio from 2006-2007 as shown in Figure 4.11 (Bihong, 2006).

This was short-lived though as 2007 marked the beginning of the financial crisis. The rising leverage ratio form 2007-2008 shows that the Chinese banking sector reacted positively to the trading of global risky securities and that they participated in the housing bubble. It also indicated a rise in exposure within the banking sector. The CBRC therefore reacted by raising the capital levels so as to lower the levels of exposure for banks which worked; as Figure 4.11 shows that from 2008-2009, the leverage ratio did fall (CBRC, 2008).

China started implementation of the BASEL III Accord in 2013 but had begun preparations well before that (see Chapter 3). The CBRC required banks to follow the minimum 3% level that the BASEL Committee suggested. The leverage ratio in China has been rising, as shown in Figure 4.11 and banks are well in the right course to meet the BASEL targets by 2018.

4.4.4 Leverage ratio comparison

Figure 4.12 below shows the compared trends of the leverage ratios. The comparison of the leverage ratios is different from the comparisons done for the capital and the liquidity ratios. This is because, as mentioned before, it has been optional, before the introduction of BASEL III, for banks to use the leverage ratio as a tool for checking their levels of exposure. Therefore there has not been enough data and reports to show how bank leverage ratios in each country have been and why they have the trends that they have.

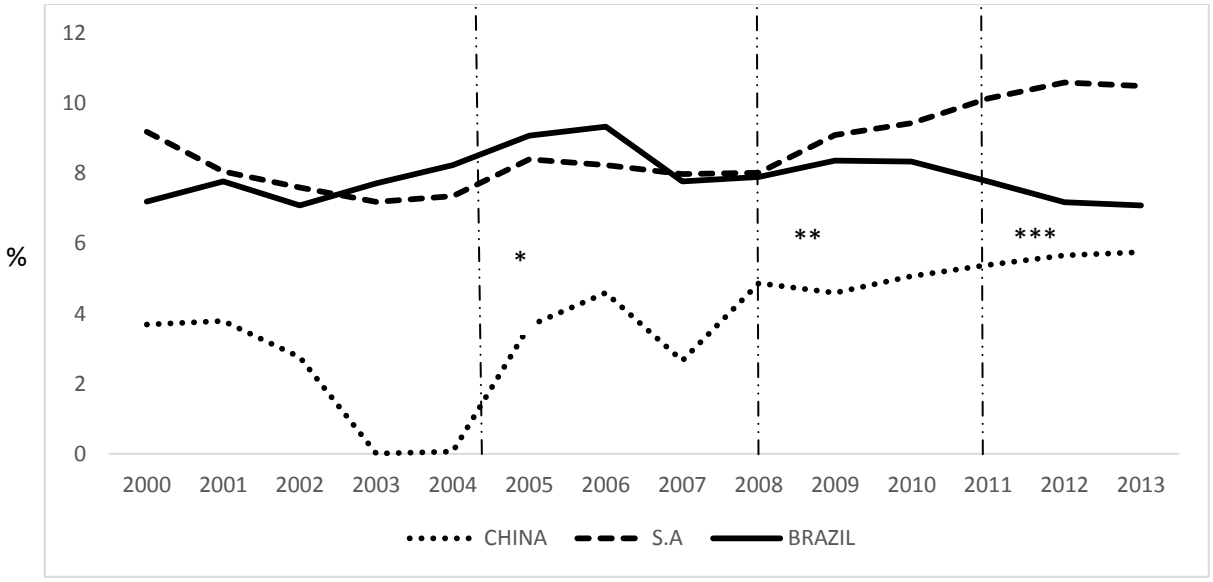

Figure 4.12: Overall bank leverage ratios, South Africa, Brazil and China, 2000-2013

Data source: Bankscope (2014)

Note: * Start of BASEL II implementation preparations and Chinese capital liberalisation

** Financial crisis

*** Start of BASEL III implementation preparations

The graph shows that South Africa and Brazil have generally had higher ratios during the sample period, as compared to China. As mentioned before, the South African and Brazilian financial and banking sectors have been more evolved and globalised as compared to the Chinese financial and banking sectors. The Chinese only reached this level of openness, that the other two countries had been on for decades, in 2005 when they began preparing to let foreign banks in. This explains the difference in the levels of exposure between China and its two counterparts.

Despite the general high ratio for South Africa, its ratio as well as China's, fell by the beginning of the year 2000 while Brazil's increased. As mentioned in Sections 4.2.4 and 4.3.4, Brazil has had the highest trends with regard to capital and liquidity ratios as compared to South Africa and China. This is clearly the case as well for the leverage ratio as shown in Figure 4.12. The healthy economic conditions Brazil has been enjoying over the past decades also brought about a wave of risk within its banking and the financial sectors, as compared to South Africa and China.

Prior to 2004, China and South Africa's leverage ratios fell while the ratio in Brazil increased, but however all three countries had high or increasing leverage ratios from 2004-2006. The Chinese banking sector had been well reserved and highly state controlled to the extent that banks did

not have a high overall leverage ratio as compared to the banks in South Africa and Brazil. In 2005 however, Figure 4.12 shows how all this changed as the leverage ratio in the China began to rise and correspond with the levels in South Africa and Brazil. Therefore, Chinese capital liberalisation and the rise in global shadow banking contributed to these increases in the leverage ratios for the three countries. This supports the fact in the literature that the rise in shadow banking and the trading in risky securities might have helped in the build up to the 2008 financial crisis. Brazil and China's leverage ratios fell from 2006-2007 while the ratio in South Africa was high but fairly stable. South Africa and Brazil had stable ratios from 2007-2008 but China exhibited an increase in the leverage ratio during this period.

As the countries entered the 2008 financial crisis, it is visible that with the slight exception of South Africa, leverage ratios in Brazil and China increased in response to the rise in shadow banking as well as the housing bubble which had increased the level of mortgages as well as non-performing loans. While it did not take long for Brazil and China to react to the crisis, South Africa's leverage ratio only started going up as the crisis intensified, which is 2008-2009, as shown in Figure 4.12 above. After 2008, Brazil's and China's leverage ratios fell, while South Africa's kept rising and as Figure 4.12 shows, the leverage ratio in South Africa rose from 2008-2012 and then it started coming down slowly to meet the ratios of Brazil and China. This might have meant the banks in South Africa were performing better than those in BrazilandChina

The graphalso shows that the leverage ratio in South Africa has not dropped since then while the ratio in China has not dropped since 2009. However, Brazil seems to have low leverage ratio compared to South Africa and China since 2009. The ratio in Brazil only started improving 2012 showing it is also, like the other two countries, on the track to achieve BASEL set targets. The latest levels of the leverage ratios in Figure 4.12 show that the three countries have been complying with the BASEL III guidelines. They therefore appear very comfortable and on the right track in terms of the BASEL Committee's proposals for the ratio, as the trends are stable and steadily rising.

CHAPTER 5

MAJOR FINDINGS, CONCLUSIONS AND RECOMMENDATIONS

5.1 INTRODUCTION

The purpose of this study was to study the developments in the regulation of the financial markets, with banks in particular, in South Africa, Brazil and China over the period of 2000-2013. This arose as a result of the recent implementation of the BASEL III Accord by many countries around the world. A secondary goal of this research was to establish the existence of regulatory alignment among these three countries, which is an important aspect of the study as the countries that were being compared are not only trading partners but are all members of the BRICS countries (the other two countries being Russia and India). For the purposes of the length of the study, it was not possible to include Russia and India.

Another secondary goal was to establish the financial soundness of the banking systems of the three countries by analysing the capital adequacy ratios, leverage ratios and liquidity ratios.

5.2 MAJOR FINDINGS

The 2008 global financial crisis surely opened the eyes of the financial regulators as tighter and tougher regulatory rules have been implemented globally since 2009. All three countries under this study have not been behind in this transition of bank regulatory laws as they have also been involved in implementing internationally recognised regulations. South Africa, Brazil and China are among the many developed and developing countries that have chosen to follow the BASEL regulations and they have implemented all three Accords. Implementation of the new Accord, BASEL III, only started in all three countries in 2013.

Preparations for the implementation of BASEL III were slightly different from country to country. While South Africa chose to follow the general timeline that the BASEL Committee had proposed, China and Brazil chose to announce early implementation. This meant that their preparations would be rigorous and tougher than those that were done in South Africa. China and Brazil introduced measures to make sure that banks had more capital cover as compared to South Africa. However, despite the fact that China and Brazil announced early implementations, their preparation timelines were shorter than that of South Africa, as shown in Table 3.3. South Africa also went the extra mile to propose other programmes that could help in implementing the new Accord. This is with reference to the twin peaks approach that was discussed in Chapter 3.

However, as mentioned earlier, the different preparatory and implementation procedures among the three countries do not mean that there is no regulatory alignment. There were bound to be differences in the ways each country chose to prepare for the implementation and the ways each would eventually implement the Accord. This is because the procedures that the BASEL Committee proposed for the implementation of BASEL III were simply suggestions, meaning that each country had the right to deviate from these procedures and use methods that would fit their system the best. It was also discovered that all three countries started their implementation procedures by analysing their financial and banking systems to try and find the right methods to use.

South Africa and China started implementing the new Accord early 2013 while Brazil ended up delaying implementation despite having announced early implementation intentions. This meant that banks in Brazil had to be subjected to tougher capital levels as compared to their counterparts in South Africa and China. While all countries have shown much progress in implementing BASEL III, assessment reports done by the RCAP suggested that there were still some major areas that needed special attention so that the Accord could be effective.

Therefore, in analysing the developments of bank regulation globally, it was established that there have been major developments in making the banks sounder and safer. However, it is unfortunate that what has made this development possible are the lessons from the effects of financial crises and the collapse of many banks. Bank regulation in the developing world has become tighter ever since it became apparent that the effects of globalisation were not all positive. This is mainly the case with China, a country that has had its financial system separated from the global community for many decades only to open up in the late 21st century. While it has been unfortunate that many banks have collapsed over the years, the lessons have been helpful in making the global banking community more resilient.

In analysing the ratios that were proposed as part of the BASEL III package, it can be seen that while capital adequacy ratios have always been present in BASEL I and BASEL II, the introduction of the liquidity and the leverage ratios can be more than helpful in reducing the degree of risk in the banking sector. It has become apparent that while a bank can be well capitalised, poor management and high-risk trading can lead to the accumulation of risk within the banking sector and this can prove to be detrimental. Therefore, the two supplementary ratios are helpful in reminding banks about their levels of risk. The leverage and the liquidity ratios can also be helpful in devising proper risk management tools for the banks. Despite the controversies that have surrounded the leverage ratio especially, it was established that with the

proper implementation procedures and proper management, banks could benefit more from the ratio.

Times of financial stress have been well associated with negative ratio trends. In analysing the capital adequacy ratios for South Africa, Brazil and China, it was discovered that the aspects of financial and banking crises, poor economic performance, currency crises and even globalisation, to mention but a few, have been well associated with low capital adequacy levels for banks. It was also established that in most cases, banks would go on to collapse as a result. This shows that capital adequacy ratios are important and if maintained they would prevent the collapse of many banks. This is so because good economic times and proper regulation by the governments or regulators as shown in parts of Chapter 4 are associated with high capital adequacy ratios and sound banking systems. The importance of capital adequacy ratios was also established as it was shown that the three countries would occasionally inject capital into the banking system so as to strengthen the banks.

Liquidity ratios were also seen to be very important for the sound and effectiveness of the banking system as the Chapter 4 analysis showed that the more liquid banks were, the more safe they were from the effects financial crises. Like capital adequacy ratios, liquidity ratios were seen to be associated with times of poor economic performance and financial crises. Regulators and governments showed how serious they are when it comes to the liquid assets that banks hold as well as their overall liquidity. This is because lack of liquidity has been one of the major reasons why banks have since failed to pull themselves out of financial and banking crises. However, it does not really mean that the low liquidity is always good for a bank as it may suggest that the bank is under-utilising its assets and resources.

Leverage ratios on the other hand are different from the liquidity and the capital adequacy ratios as high leverage ratios have not been associated with good times but rather times of financial stress. It was established that very high leverage ratios were in part responsible for the 2008 financial crisis. While high leverage for a bank or an institution may mean profits, it also means that the level of exposure for the bank will be very high. Therefore, as Chapter 4 shows, the high leverage ratio trends have been associated with times of banks' demise. This has led governments (especially China) to go ahead and cancel the exposures for banks that would probably raise the leverage ratio, e.g. non-performing loans. Leverage ratios are complicated and governments are still to actually announce how they will reach their targets.

5.3 CONCLUSIONS AND RECOMMENDATIONS

Based on the study of the implementation of BASEL III in South Africa, Brazil and China, it can be concluded that with the proper implementation procedures and effective management the new Accord can achieve a sound global banking environment. The three countries have also shown that they are willing to put in high investments for the proper implementation of the new Accord; therefore when it comes to proper management all countries seem to be doing well. Regulatory powers in South Africa have been given to the SARB, in Brazil they have been given to the BCB, and in China regulation for banks is the responsibility of the CBRC. This kind of specific delegation in regulation could prove to very effective since these regulatory institutions are well funded and have one job to focus on.

The existence of regulatory alignment has been established for South Africa, Brazil and China. This is because all three countries have since used mostly the same bank regulations as per the requirements of the BASEL Committee. They also meet the international standards for banks regulations and use most of the same regulatory institutions. This was important, as mentioned earlier, as these three countries are major trading partners and this would limit the possibilities of bank arbitrage for banks that have branches in these three countries.

It can be concluded that the three ratios that were proposed by the BASEL Committee under the BASEL III Accord are important for banks and therefore can be used to prevent the re-occurrence of financial crises in the future. If these ratios had been enforced before the 2008 financial crisis, it can be safely assumed that they would have shown banks the right way to limit the levels of risk they were subjecting themselves to. They would have also been useful in preventing the collapse of many banks that failed as a result of the 2008 financial crisis. It should however be noted that the ratios are only effective if implemented under the right management and the timelines are followed. While regulation of banks in South Africa, Brazil and China has since proven to be effective and resilient thus far, more still needs to be done as global risk still exists. Regulation of risky global securities has to be tighter, the ratios have to be constantly enforced and credit advances have to be kept in check as well.

5.4 AREAS FOR FURTHER STUDY

There has not been an adequate study of the implementation of the capital adequacy ratios, leverage ratios and liquidity ratios prior to this one. Prior studies would have been of help in making better comparison analyses of the ratios. For this study, reliance for the analysis was placed on the data and reports, published by the central banks for the three countries, on the ratios. However, these reports and data on the ratios have been limited, making the study

difficult. Therefore it would be suggested that more research be done on the trends of the ratios as well as the reasons for the trends so as to supplement this current study. It would also be suggested that central banks and the banks themselves publish more reports on the ratios so they can be better understood.

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