

The Relevance of The Basel III Accord Within The South African Banking System.

There are numerous countries which are regulated by the Basel II Accord that manifested different results from the 2007 subprime crisis. The United States and some European Countries emanated the subprime crises and experienced massive decline in market confidence as write-offs became the order of the day. The write offs became so severe that the Federal Bank of the United States had to step in to offer massive bailouts to rescue the American banking industry. However, conversely to what happened in America, there some countries (including South Africa) which were also regulated by the Basel II Accord but did not experience massive write-offs as a result of the subprime crisis. This begs a question of whether there is a deeper reason for the failure of the American and European banking system to the extent that they had to bailout their banks during the 2007 financial crisis.

With this question remaining unanswered, there remains scepticism on whether a country regulator can rely on implementing the Basel III Accord for improved banking sector resilience. In particular, the stringent requirements of the introduction of liquidity standards will be costly to implement in South Africa. Therefore, a question will need to be asked whether the Basel III Accord is relevant in South Africa

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1. Introduction

Despite the disruptions in 2007, the banking sector remains the centre of any economy. The manner in which this sector is regulated has an impact on the lending patterns and determines the growth potential of the economy. The creation of such regulations should, therefore, be contextually correct and be suitable to the countries which they purport to regulate. The need for such suitability is more pronounced in a country that has an identified economic growth plan.

The purpose of this research is to identify elements that have resulted in the conception of the Basel III Accord and to investigate whether South African bankers believe that there are sufficient grounds to implement the Accord in South Africa. This will be done by reviewing the Economic context in the countries that originated the sub-prime mortgage crisis which ultimately resulted in the creation of the Basel III Accord and by handing out a survey questionnaire to assess whether bankers believe that there are sufficient grounds to implement the Basel III Accord in South Africa.

The background section will discuss securitisation and the subprime lending as critical elements that created the 2007 financial sector crisis. To understand the crisis, one needs to understand key elements that led to the sub-prime lending debacle as well as the 'originate to distribute' model that was prevalent in the times leading up to the 2007 financial crisis. The background section will show that borrowers who were advanced loan deals during the era heading up to the subprime crisis had good credit scores. However, these borrowers were given loans at the back of incomplete loan documentation and improper affordability assessments. Thus banks advancing these loans did not have proper recourse strategies to follow when a borrower defaulted.

The background section will lead directly to the research question. Since the Sub-prime lending crisis originated in the United States (US) and the banking environment in South Africa being different to that of the US, is the Basel III Accord which was intended to fix problems arising from the subprime crises relevant in South Africa. Or, should the regulation of South African banks be left at the behest of the South African Reserve Bank (SARB). With this in mind, the paper seeks to assess the relevance of these regulations in order to ensure that the benefits of the regulation overshadow the costs of its implementation. The research question is posed to bankers in order to assess whether they believe that the implementation of the Basel III Accord is relevant in South Africa.

The evolution of Basel regulation will be presented by way of giving the history behind the formulation of the Basel Committee and the guidelines which have been issued by the Committee; particular attention being given to Basel I, II and III. This section will give context on contemporary

international banking regulation matters. Banking regulation literature will then be assessed with the view to determine the best way to regulate banks. Specifically, the paper assesses whether regulation should be left at the behest of an international regulator, a home country regulator or a host country regulator. To do this, the impact of regulation on financial sector crises, innovation, competition, economic growth and social welfare will be assessed. The paper will surmise that banks are international in life but national in death. Therefore, it should be the host country regulator's responsibility to ensure the soundness of the banking operations which they control. This paper will take on a view that financial sector failures in any given country will adversely impact on the economic potential of that country whilst also impacting key social welfare agendas. As a result, the type of regulations implemented in any country should be within the host country's prerogative.

In addition, contemporary approaches to banking regulation will be discussed. In this regard, a review of contemporary literature will be assessed with a view to outline what contemporary literature contributes to regulation discourse. The discourse points out that there are various alternatives to regulate financial institutions, some of which differ from what has been advanced within the Basel III Accord. In light of this, the paper concludes that international regulation should be light touch allowing for host country to choose amongst various regulatory alternatives. As such, a more comprehensive and far reaching regulatory stance contained within the Basel III Accord may not be relevant for 'to the letter' implementation in all countries.

The paper concludes that, in the views of South African Bankers, the Basel III Accord is irrelevant within the South African banking system and that its implementation will lead to increased cost of banking; with potentially disastrous impacts on the availability of capital, credit, market liquidity and economic growth. Not to mention that the 'to the letter' implementation of the Basel III Accord will by way of increasing the cost of doing banking exclude the already marginalised parts of the South African population who cannot afford to bank at these increased costs.

2. Background Information

A combination of a fall in property prices, poor loan documentation, and increased securitisation were all seen as the reasons behind the 2007 financial crisis that led to massive losses by well-known international banks. Such losses sent shock waves through the whole banking system and created a danger of bank runs as market confidence in the manner in which banks are run and regulated faded.

This prompted regulatory introspection which eventually led to the drafting of the Basel III Accord. This section will seek to review the major events which led to the 2007 financial crisis and

consequently the Basel III Accord. It will begin by defining the key issues that led to the crisis; these being securitisation, as well as subprime lending. The section will seek to outline how a loan can become subprime and how subprime lending was actually at the crux of the crisis.

2.1 Securitization

In its simplest form, securitization involves the packaging of financial assets of all types including credit card debt, vehicle finance, residential and commercial property mortgages by way of combining them into different portfolios in terms of associated risk in order to re-sell them to third parties (Swagel, 2009; Mpofu, 2010). In the years leading to the 2007 crisis, securitization of assets increased into more complex securities where one asset could be securitized and resold to more than one buyer (Swagel, 2009).

Several authors have stated that the catalyst of the 2007 financial crisis was the heightened use of securitization. It created the "originate to distribute" lending model (where banks write debt only to sell it to third parties) for many lending companies and disconnected the lender from exposure to the borrower's real credit quality, consequently encouraging increased lending volumes without a care for bad debts (Mpofu, 2010). Furthermore, unfamiliarity with the lending field prevented those who were accepting the credit risk from implementing controls on this securitisation incentivized lending (Gerardi, Lehnert, Sherlund, & Willem, 2008). This permitted the 'hot potato' of sub-prime loans to be passed through the banking environment and to be held at last in the hands of gullible investors (Shin, 2009).

Furthermore, the reporting of these securitised debts became difficult to track. Some firms learned that by entering into counterparty agreements; they could disclose a creditor and the liabilities such as write offs resulting from bad debt in the books of a counterparty. Often, these liabilities were not reported. This led to a build-up of leverage in what came to be known as a shadow banking system (Alexander, 2013).

2.2 Subprime Lending

Lying at the core of the shadow banking system were many assets which would later be characterised as subprime mortgages. By way of classification any loan can be characterised as subprime at inception of the loan and/or after the loan is granted. At inception, a subprime loan is characterized by the following; firstly, the granting of loans to the least credit worthy individuals with poor credit scoring; second, when there is insufficient documentation to predict income prospects and individuals behaviour throughout the credit agreement; and third subprime mortgages result in higher than normal default risk to the lender and warrants special attention to

ensure that the borrower makes the payments (Mpofu, 2010). When such loans are granted, the banks have to charge higher interest rates to compensate for their risk and the fact that capital requirements needed to be held is higher for subprime (Gerardi, Lehnert, Sherlund, & Willem, 2008; Mpofu, 2010).

The fourth reason a loan may be classified as subprime is where the quality of security is unacceptable and the extent on the leverage is considered too high. The leverage of a property is, in principle, the total value of all mortgages on the property divided by the value of the property. This is known as the property's Loan-to-Value (LTV) ratio. Both the numerator and the denominator of the LTV ratio will fluctuate over the loan term. But, the current values of the denominator and numerator should be known when the loan is originated. The lender usually undertakes a title deed search to see if there are other mortgages and liens on the property. The lender would also hire a valuator to confirm the true value of the property (Hatzius , 2008, Gerardi, Lehnert, Sherlund, & Willem, 2008). However, the LTV ratio may be vague in instances where a comprehensive system of registering property liens does not exist; the lender may not be able to accurately assess total liens over property values.

Following inception a subprime loan may be classified as sub-prime when it performs below expectations i.e. the borrower being unable to meet credit obligations timeously. This may be as a result of income levels of the borrower falling below the levels at which the loan was initially granted, the borrower taking up subsequent loans which reduces ability to service the current loan and where the borrower is simply a delinquent customer. Unforeseen circumstances like family deaths, spouse's retrenchment and so forth may also reduce the ability to pay and result in the loan being subprime (Swagel, 2009).

2.3 The Crux of the Crisis

As previously mentioned, sub-prime lending was one of the main risk contributors in the 2007 financial crisis. However, previous sections have not dealt with the various drivers of subprime lending. This section will seek to uncover the drivers of subprime in the years leading up to 2007. In this regard, this section will look at credit scores, loan documentation and leverage as other key factors, not prominently discussed, that have created the subprime debacle and may have ultimately led to the financial meltdown.

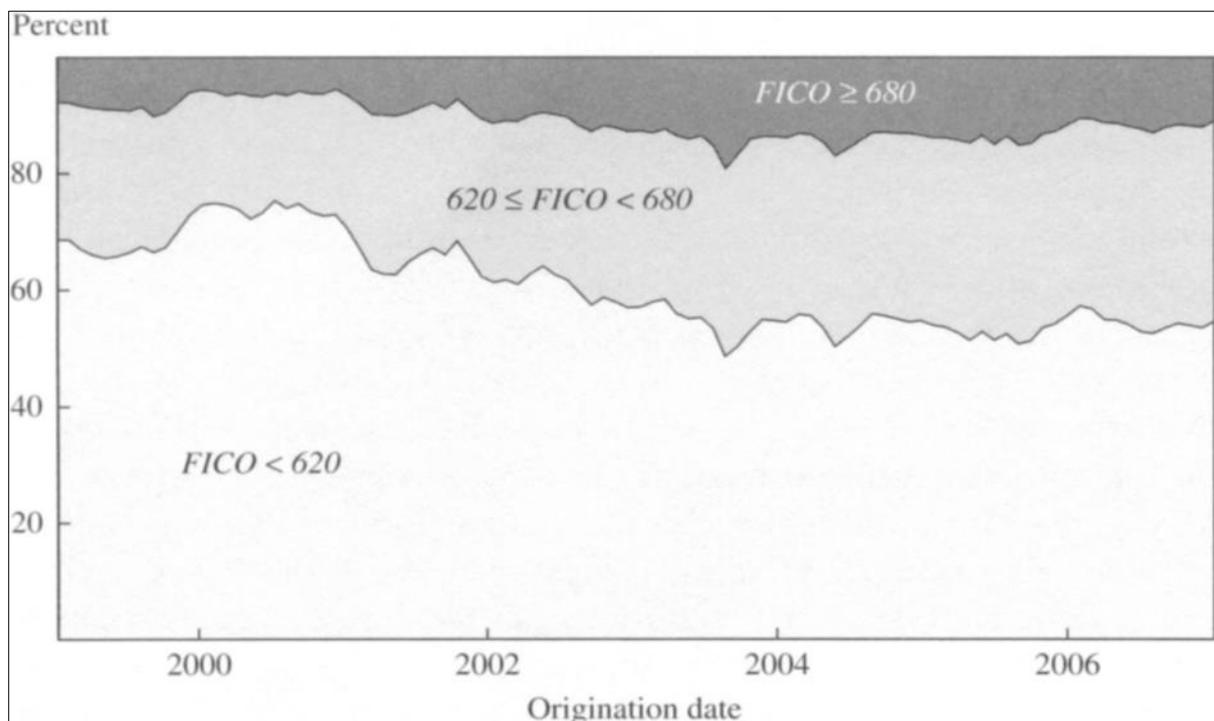
2.3.1 Credit Scores.

Credit scores sum up a borrower's lending history when making loan re-payments and are the most accurate pointer of subprime or prime status. The FICO score is the most commonly used credit

rating score in the United States of America. Industry rules in the USA state that, borrowers with FICO scores of 680 or above a may not under usual circumstances be considered subprime, borrowers whose credit scores are between 620 and 680 can at times be categorised as subprime, and borrowers whose credit scores below 620 are always categorised subprime and may not be qualify for prime loans (Swagel, 2009).

Figure 1 shows the percentage of subprime loans that were raised between the years 2000-2006 in the United States falling into each of the categories mentioned above. Loans given to borrowers with good scores (FICO scores of 680 and above) was high during from 2000-2006, while loans to bad customers (those with scores below 620) were smaller in proportion (Gerardi, Lehnert, Sherlund, & Willem, 2008). Figure 1 suggests that credit scores were not the main reason for the 2007 financial crisis and that one needs to have a look at other factors in order to understand the true source of subprime. The quality and completeness of loan documentation as well high levels of leverage are some of the factors that may have been considered to be notable contributors to the subprime crisis. The manner in which these factors contributed to subprime will be discussed below:

Figure 1: Distribution of mortgages by credit risk.



Adapted from (Gerardi, Lehnert, Sherlund, & Willem, 2008)

2.3.3 Loan Documentation

Borrowers present a file documenting the borrower's income and expenditure patterns with each loan application. During times of increasing securitisation the quality and completeness of loan documentation decreased significantly resulting in the loans being classified as subprime after the loan was granted. In essence, subprime in this category referred to the general inability of the lenders to effectively predict borrower behaviour due to incomplete information (Gerardi, Lehnert, Sherlund, & Willem, 2008). A lack of loan documentation not only reduces the ability to correctly score the loan deal but it also has the impact of increasing credit impairments as the lender lacks the validity necessary to follow legal actions when the borrower defaults; such validity is reduced by the lack of or incompleteness of crucial loan documentation. Furthermore, improper loan documentation would generally imply that banks did not have sufficient information to conduct affordability assessments on the loans they granted.

2.3.4. Leverage

Leverage increased significantly during the boom years (5 years leading up to 2007). Loans were granted as high as 150% of the collateral value. The high leverage was made worse by multiple bonds on a single property. Originators often preferred to raise two mortgages on a property one for 80% of the value of the property and another for the remainder of the loan value which the borrower wished to take out. If the borrower defaults, the first mortgagor would receive payment for his/her debt instrument, with the second mortgagor getting paid from the remaining proceeds, if any (Stiglitz, 2009).

Further, the United States did not have a comprehensive structure for tracking mortgages on properties. As a result, borrowers could take out a second bond immediately after financing their home, raising their LTV ratio. While this borrowing does not affect the first mortgagor's recovery, it served to increase the borrower's level of indebtedness and, as a result, the chances that borrower might default: thus decreases the worth of the original pledge (Gerardi, Lehnert, Sherlund, & Willem, 2008). Furthermore, there was a decline in home prices which decreased more than 12% from 2007 to mid-2009. This decreased the collateral value of the liens and impounded the extent of the losses on each individual loan at the point of default (Hatzius, 2008).

In summary, it appears that the borrower's credit scores were of a good enough standard to classify loan advances at prime. However, such a classification would fail under inspection as there was insufficient loan documentation for thorough scrutiny. Thus most loans were classified as subprime due to incomplete documentation and the inability of banks to get back their money by selling the houses and realizing mortgages.

Furthermore, banks in the United States of America were not prudent and issued loans with leverage up to 150% on the first loan. This led to increased levels of impairments which ultimately sank the American banking system. The increased use of securitization and the aggregation of these risky assets for re-sale abroad ensured that subprime losses were spread to banking institutions outside the United States of America. Numerous banks in the United Kingdom, France, Germany and Ireland bought these securitized assets, and as a result, also suffered from the associated impairments. These banks had not adequately capitalised against the default risk due to the fact that there was insufficient customer information as a result of the 'originate to distribute' business model.

Subsequently the prospect of a financial crisis and economic downturns became an inevitability that all players in the market had to contend with. The financial crisis was characterized by bank runs, unprecedented losses and the closure of major banks. Again, some banks did not have adequate liquidity buffers to sustain a long period of bank runs and were forced to stop trading (Alexander, 2013). The productive economy began to collapse. Many people, including those who had financed homes at high LTV, were retrenched. The serviceability of loans decreased, the financial system shrunk further and the industrialised world was in a recession.

Of note, the Basel II regulation which was in place at the time could not do much to bring this crisis to a halt. Similar banking and market failures have hit the developed world since the Basel Committee of bank supervision first started regulating the international banking environment. Second to the 2007 sub-prime crisis, the Asian crisis was the next most notable crisis bringing was known to be miracle growth to a halt.

2.4. The Asian Crisis

Since 1960 the Asian economies of Japan, Korea, Singapore, Thailand, Malaysia, Hong Kong and Indonesia (known as the Asian Tigers) grew at unprecedented rates. In fact the growth of these economies was almost three times the growth of the rest of the world between 1980-1995. As a result, GDP per capita increased, poverty decreased and inequality was blown a heavy dent (Bird & Milne, 1999). Most of these countries experienced low inflation rates, budget surpluses and declining government foreign debt as a percentage of GDP and export growth in the double digit figures. Creating mass euphoria around the economic prospects of these countries in what became known as the Asian miracle (Dittmer, 1999).

Financial liberalisation followed by the 'Big Bang' promoted the liberalisation of cross border capital flows and produced opportunities for citizens and banks who were situated in low interest yielding environments to invest capital in countries with higher yields (Dittmer, 1999). Investors in the first world, who were in low yielding environments were fascinated by the high growth rates in Asia and invested large sums of capital into Asian companies and banks who channelled the funds into highly export orientated sectors, the steel industry and the housing market.

After all, the word 'Asian Miracle' became a buzz word with the World Bank and IMF speaking highly of the Asian Tigers. However, this served to mask some serious structural concerns including high reliance on foreign capital, under-developed and un-transparent banking systems, cronyism between financial sector heads and high ranking government officials, questionable and corrupt investment decisions as well as an over reliance of the export market (Dittmer, 1999). By the mid 1990's the export market was saturated in all areas where the Asian Tigers had a comparative advantage (Textile, Footwear, heavy steel and house hold electronics). Furthermore, competition in these markets had intensified with China (already a cheap manufacturer owing to its low wage frame-work) having devalued its currency in 1994 (Dittmer, 1999).

This resulted in lower export growth in the Asian Tigers' region, which was followed by improving currencies¹, rising demand for foreign products and the inevitable increase in current account deficits. With decreasing global growth, robust competition from China, stronger currencies the economy in Asia came under a lot of stress which exposed all the structural problems listed above. Asia had at the time been battling a 'boom bust syndrome' and had experienced a number of 'bubble burst' in the early 1990's (Dittmer, 1999).

The mid 1990's were no different and as rent seeking behaviours fuelled a number of bubbles in the export orientated markets, the steel manufacturing and automobile industry and in the property sector all of which came to burst between 1995-1997 (Bird & Milne, 1999). As a result, many Korean companies which were highly leveraged filed for bankruptcy during this period. In Thailand, banks that had finance large real estate companies were hit by a number of defaults and in turn failed to make foreign debt repayments owing to external stakeholders. The Thai Government was forced to bail-out many banks by guaranteeing banking sector debts in order to restore confidence. However,

¹ Currencies in Asia were pegged at unsustainable levels to the US Dollar. As a result, they continue to improve at a time of low export growth and high import growth as they were driven by improvements in the US Dollar.

the Thai government failed to meet some of these guarantee commitments and reneged on arrangements made sending the banking segment into a tail spin (Dittmer, 1999).

Furthermore, Thailand which had up to that point pegged its currency to the dollar allowed its currency to float, a move deemed as fatal error. The Thai baht went for a bath and was not assisted by the mass exodus of foreign capital (Dittmer, 1999). Despite this, many investors (not understanding how the world had become inter-connected) believed the crisis to be isolated in Thailand and continued to fuel bubble chasing behaviours in other Asian countries burst cycles of their own in the export market as a result of lower global growth in 1997 (Bird & Milne, 1999). The Asian tigers were in recession and this recession was exported to the rest of the world.

‘It is in the nature of economics that it is better at explaining the past than at anticipating the future. After the event, there is clearly more information upon which to draw. The problem with prediction is not usually in identifying the relevant indicators, but in attaching appropriate weight to them’ (Bird & Milne, 1999: 421).

The above quote seems to neatly display the fundamental problem facing regulators. i.e. no single regulator can adequately trace and measure events so as to determine the economic consequence of each event. As a result regulations lag crisis and no single regulation can avoid all the crisis of the future (Bird & Milne, 1999).

What is evident from the 2007 and the 1997 financial crisis is as follows: (1) financial crisis are difficult to predict, (2) it is therefore difficult to regulated the unpredictable, (3) the deregulation of capital creates opportunities for it to flow to high yielding environment, (4) there has been a growth of bubble creating investment decisions since the deregulation of capital which is fuelled in the main by rent seeking behaviours and (5) in all of history, even in the wake of Basel, there has been no regulation to adequately deal with human behaviours of panic and greed.

3. Problem Statement

There are numerous countries which were regulated by the Basel II Accord that manifested different results from the 2007 subprime crisis. The United States and some European countries emanated the subprime crises and experienced massive decline in market confidence as write-offs became the order of the day. The write offs became so severe that the Federal Bank of the United States had to step in to offer massive bailouts to rescue the American banking industry. However, conversely to what happened in America, there some countries (including South Africa) which were also regulated

by the Basel II Accord but did not experience massive write-offs as a result of the subprime crisis. This begs a question of whether there is a deeper reason for the failure of the American and European banking system.

With this question remaining unanswered, there remains scepticism on whether a host country regulator can rely on implementing the Basel III Accord for improved banking sector resilience. In particular, the stringent requirements of the introduction of liquidity standards will be costly to implement in South Africa. Therefore, a question will need to be asked whether the Basel III Accord is relevant in South Africa.

One of the more notable differences in the countries that emanated the crisis and those that survived it relatively well could be strength and dominance of that particular country's internal regulators. If such regulators are able to force stricter and more contextually correct regulations than those imposed by the Basel Accords then they are able to safeguard their own internal banking systems and they are able to achieve a more resilient banking environment than that which they can achieve by simply rolling out the requirements of the Basel III Accord. These country regulators will be able to independently ensure a more resilient banking system.

There is an argument, as a result, that these regulators should be allowed to freely regulate their own internal banking system. This argument is enforced by the view that strong internal regulators understand the banking context more closely and are able to regulate according to their own intrinsic risk profile.

The problem, however, is that local regulators are forced to abide to the international regulation that may not be as contextually correct as regulations implemented locally. Such regulation may harm the domestic economy and increase compliance costs without adding new benefits. Incorrect regulation may also stifle financial sector innovation and competition; which is necessary to have an affordable and more inclusive banking system that contributes positively toward economic growth.

4. Purpose Statement

The research explores the proposition of whether the Basel III Accord is relevant and fit for implementation within the South African environment amidst an already strong regulator and regulatory framework that promotes banking sector resilience. Furthermore, the research explores bankers' beliefs concerning the more stringent capital and liquidity requirements within the Basel III

framework when juxtaposed with what is believed to be a strong South African regulatory framework. The purpose of this research is to try and understand South African banker's opinion on the relevance of the Basel III Accord. Primarily, the paper seeks to uncover whether South African bankers believe that the Reserve Bank has sufficient independence and clout to administrate regulations and punish non-compliant banks without relying on the Basel III Accord.

Moreover the research has purposed to understand bankers' opinions on the costs of implementing the more stringent capital and the new liquidity requirements within the South African Banking sector. The costs of the new regulations have been assessed with the view that a costly banking system will be more expensive to the end user and will be exclusionary in nature. Banker perceptions of the cost of regulation and whether the regulations are necessary given the dominance/lack thereof of the South African Reserve Bank will then be used to assess whether the Basel III is relevant within the South African Banking environment.

5. Research Question

The questions chosen for this research work will be used to explore the premise of whether bankers believe that it will be suitable to implement Basel III within the South African banking environment given that the country's banking sector has proven to be resilient amidst the 2007 global financial sector crisis. These questions will be used to assess whether the South African regulator can enact suitable regulations independently of the BCBS proposed regulations. The belief of whether the implementation of the legislation might influence the country's' cost of banking will also be explored.

The questions to be posed in the research will be as follows:

- Are regulations implemented within the South African environment by the South African Reserve Bank working well to improve the financial Sector resilience?
- Will New Basel III Capital Regulations work to improve resilience without increasing operational costs and reducing profits?

6. Research Hypothesis

The research paper has used to the following questions to test the bankers opinions on the relevance of the Basel III Accord within South African Banking. First, do the regulations implemented within the South African Banking environment and independently of the Basel III Accord work well to improve banking sector resilience? Second, will the Basel III Accord significantly increase the cost of

banking? Based on the answers of the question, the research has sought to prove at a 95% confidence interval that.

H0: The Basel III Accord is relevant in the South African Banking environment.

H1: The Basel III Accord is irrelevant in the South African Banking environment.

7. Literature Review

The banking sector continues to be the central place in the whole economy as it acts as an intermediary that facilitates transactions between lenders (those who are in a financial surplus position) and borrowers (those who are in a financial deficit position). In doing this, the financial sector allows people to make daily economic decision with ease and with greater effectiveness. It allows people to save for future aspirations, retirement needs and/or simply preserve the real value of their funds. It, conversely, also allow people who do not have the means to take advantage of investment opportunities access to credit; such investment opportunities having being successfully undertaken lead to economic growth, job creation and infrastructural development.

As a centre for economic growth, the banking sector can extend credit of more value than the funds in the economy through its ability to create money. For every Rand deposited in the financial system, the financial system keeps a fraction of that Rand and borrows the remainder to other economic participants. Such participants through a series of economic activities will deposit such funds to the same bank that will then reserve a fraction of those funds and then lend out the remainder.

For example: if client A deposits R100.00 in Bank A, Bank A will Keep R10.00 as reserves and then lend out R90.00 to client B who needs the money to buy a business called ABC traders. To buy ABC traders, Client B pays R90.00 to client C. Client C then deposits the proceeds of selling ABC traders into Bank A who will keep R9.00 and advance R81.00 to client D who needs the funds to pay for his daughter's college education. The college in question may deposit the money into bank A again and continue the cycle of money creation.

For the purpose of this example on R100.00 was deposited into the bank but the Bank was able to create R171.00 in credit extension, only reserving R19.00 for the means of servicing the needs of depositors. This illustrate the conundrum of banking, which seeks to answer to meet two objectives; (1) how to ensure that sufficient funds are able to meet withdrawal demands from people who have deposited funds in the bank and (2) how to maximise lending in a profitable manner whilst ensuring that lenders pay back in order to meet on-going withdrawal demands mentioned in objective one.

Striking an appropriate balance between these objectives is important in ensuring health banking system, sustainable economic growth and the reduction in bank runs.

When banks are left to their own devices, they may seek to maximise profits by reducing the amounts of reserves they hold to meet deposit and extending credit in a reckless manner; thus jeopardising banking soundness, increasing the risk and prevalence of bank runs and threatening economic growth. To the extent that economic growth is defined as a public good, the reduction thereof by means of reckless banking decision is seen as an externality and warrants the involvement of and regulation by government to reduce the risk and prevalence of such externalities.

In South Africa, the South African Reserve Bank (SARB) bears the mandate to regulate banks. As such, the SARB, requests information from banks to monitor banking behaviour, monitors trends they find to be concerning, sets corrective measures, and where trends are an on-going concern the SARB will implement regulations to deal with the trends. All of this is done by ensuring or maintaining the soundness of banking practices within South African borders.

Other countries have their own central banks which seek to also achieve the central aim of banking regulation as the SARB by using a range of regulation and policy tools that may be completely different to those enacted by the SARB. This presents an opportunity for regulatory arbitrage where banking migrates to countries that are perceived to be to employ more lenient stances to banking regulation.

The Basel Committee on Banking Supervision (BCBS) was established to reduce regulatory arbitrage in the international banking system by advocating towards a harmonisation of international banking regulation by setting a single regulatory standard that will, at a given time, regulate all banks. In this regard, the Basel I, II and III have been put forth to regulate banks. In doing this, the Basel Accords seek to enhance individual country regulation and by so doing enhance regulation at an international level.

This literature review section will seek to outline how international banking regulation has evolved since the establishment of an international standard setting body. To do this, the paper will take the reader through a brief history of the Basel Committee of Banking Supervision and will seek to detail the key regulations it promulgated; the Basel I, II and III. This will be followed by assessing various arguments for host country regulation against those advocating for an international regulator. Micro and macro prudential approaches will analysed and the paper will take the view that there a number of factors that make it necessary for country specific regulations to exists specifically in an era of

financial liberalisation to prevent asset price bubbles and perverse incentives like moral hazards and rent seeking behaviours from taking over the market.

Contemporary regulation matters will then be discussed. These include issues of how to regulate systemic risk, liquidity and capital. Again the paper will take a view that, in the main, financial sector regulations should be left at the hands of the host country. Sighting reasons such as economic growth, social welfare agendas as key outcomes of banking regulations. Since these outcomes have national consequences, it is rational that banking regulations should be regulated nationally. In addition to national regulation, contemporary banking issues do present a case for international regulation. However, such regulations should be light touch and not as far reaching as the Basel III Accord.

7.1. The Evolution of International Banking Regulations

7.1.1. The Need for international regulation.

'The Basel Committee on Banking Supervision has its origins in the financial market turmoil that followed the breakdown of the Bretton Woods system of managed exchange rates in 1973. After the collapse of Bretton Woods, many banks incurred large foreign currency losses. On 26 June 1974, West Germany's Federal Banking Supervisory Office withdrew Bankhaus Herstatt's banking licence after finding that the bank's foreign exchange exposures amounted to three times its capital. Banks outside Germany took heavy losses on their unsettled trades with Herstatt, adding an international dimension to the turmoil. In October the same year, the Franklin National Bank of New York also closed its doors after incurring large foreign exchange losses' (Basel Committee on Banking Supervision, 2015;1).

These disruptions prompted central bankers of the G10 countries to form a Committee on Banking Regulations (later renamed Basel Committee on Bank Supervision (BCBS)) and supervisory practices at the end of 1974. This committee was designed with the intention of instilling regular communication and collaboration between its member countries on bank supervisory matters in order to enhance international financial sector stability (Basel Committee on Banking Supervision, 2015).

This was done by holding quarterly meetings every year, a practice which has been honoured since February 1975. With every passing year, the committee gradually expanded its influence and reach, with non-member countries ascribing to regulatory directives from the committee. With this, the committee's membership increased in 2009 and 2014 and now has 28 member countries.

Furthermore the committee also reports to the Group of Central Bank Governors and Heads of Supervision (GHOS), this is an oversight body comprising of central bank governors (Basel Committee on Banking Supervision, 2015).

Despite this growth, the Committee's decisions have no legal force and are mere supervisory recommendations on sound practices in the expectation that they will be implemented by the individual central bank governors (Basel Committee on Banking Supervision, 2015). This has been one of the Committee's biggest impediments in the process of achieving its primary objective, which is to achieve a single set of international regulation that will not only level the international regulation playing field but also reduce banking arbitrage resulting from an un-level playing field (Basel Committee on Banking Supervision, 2015).

7.1.2 International cooperation between banking supervisors

Indeed, during the early years, the Committee's aim was to achieve two compelling objectives; one, to guarantee that no foreign banking organization would flee supervision and two, to deal with regulatory competition by ensuring consistent and adequate supervision across member countries (Basel Committee on Banking Supervision, 2015). In this regard, the committee published a white paper titled the 'Concordat' in which the committee sets out guidelines for sharing supervisory responsibilities of banks with foreign footprints.

In 1983, the Concordat was modified and published as 'Principles for the Supervision of Banks' (Basel Committee on Banking Supervision, 2015). Discourse continued amongst member countries with several papers published with the intention of strengthening the core principles of financial regulation whilst also attempting to involve member countries who were not part of the core group. The intention was to ensure that these new members will add invaluable knowledge on current discourse and further strengthen the regulatory framework being worked on (Basel Committee on Banking Supervision, 2015).

Indeed, the participation of non-core regulators also had a role in the formulation of the Committee's core principles for successful bank regulation in the subsequent year (Basel Committee on Banking Supervision, 2015). However, this role was relatively small as the G7 (now G10) almost single handedly managed the process towards the publishing of international principles. And in 1997 the first paper on the principles of financial regulation was published. When first published, the paper set out 25 basic principles that the BCBS believed to be necessary for banking supervision to be effective (Basel Committee on Banking Supervision, 2015). After a few revisions, most recently in September 2012, the document now advocates for 29 principles, catering for powers of supervision,

expectations for supervisors, compliance with regulatory requirements and early supervisory interventions (Basel Committee on Banking Supervision, 2015).

7.1.3. Basel I: the Basel Capital Accord

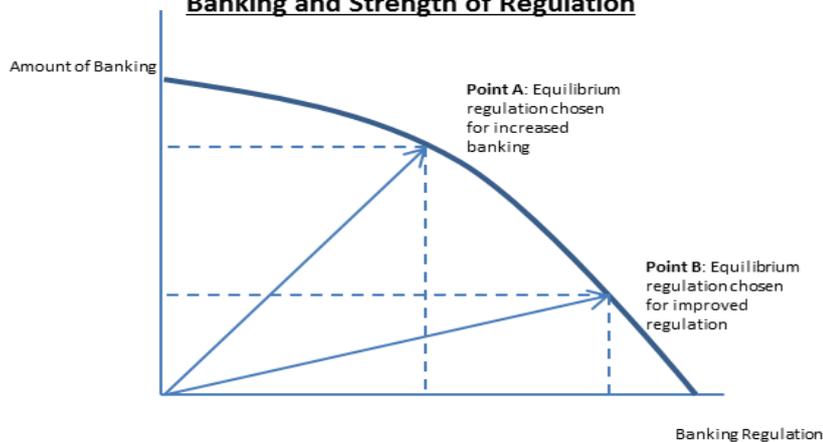
Once the foundations for regulation of banks with foreign footprints were established in the first 'Concordat', the committee's activities started focusing mainly on capital adequacy. Such focus was sharpened in the early 1980's when the Latin American Banking crises rocked the banking world; raising concerns that the capital ratios were worsening in an era of increasing international risks. As a result, Committee members decided to stop the reduction of capital levels in the banking environment by working towards greater alignment in measuring and implementing capital standards. This led to an accord on a weighted method to the measurement of risk for all banks (Basel Committee on Banking Supervision, 2015) (Lall, 2011).

There was increased awareness by the committee of the necessity to have one multinational agreement to improve the stability of the world banking system and also to remove comparative inequalities between different regions; such inequalities were seen to be arising from differences in country specific capital requirements (Basel Committee on Banking Supervision, 2015). This was informed by the risks arising from the incentive posed by the lack of a single standard; which encouraged individual countries to practice regulatory forbearance in order to protect and quite possibly grow the banking activity they controlled (Khan, Husain, & Sherani, 2003).

At the time, contemporaries like Allen and Giddy 1979 were pointing out that, unless some sort of interventions are put in place, future banking regulations in an era of multinational banks will be characterized by regulatory competition amongst country regulators. This may happen where one regulator adjusts the capital standard downwards to attract banking institutions and another regulator follows the same trend (Allen & Giddy, 1979). Thus sending capital regulation into a downward spiral and increasing risk.

According to this argument, regulators will be faced with a tradeoff between ensuring adequate regulation or maximizing the volume of banking they control, a trade-off that almost looks like the production possibility curve. The point chosen by the regulator would be like choosing a desired level of risk and return at the marginal rate of substitution (Allen & Giddy, 1979). In effect, this will entail tradeoffs between lowering risk (through Capital and liquidity provisioning) and growing the economy (Through credit extension in the banking environment) as well the tradeoff between the amount of banking in the country and the strength of regulation. This argument is illustrated in Figure 2 which shows the different marginal rates of substitution a regulator may choose.

**Figure 2: Marginal Rate of Substitution:
A Comparison Between Amount of
Banking and Strength of Regulation**



Similar comments were published on a BCBS consultative paper in December 1987, and this led to the creation and approval 'Basel I Capital Accord' by the G10 Governors. The Accord was published to the banking fraternity in 1988. This Basel I Accord required a minimum capital ratio of 8% against risk-weighted capital to be implemented by 1992. This framework was ultimately implemented in almost all countries which have internationally active banks (Lall, 2011).

Capital, under Basel, was grouped into two tiers: Tier 1, known as core capital, was defined as the sum of capital reserves, retained earnings, common stock and all other capital surpluses, and; Tier 2 known as supplementary capital, consisted of subordinated debt with original debt of at least 7 years, undisclosed capital reserves, hybrid capital instruments, loan loss allowances and preferred stock which will mature after 20 years. Basel I recommended that core capital must be a minimum of 4 per cent and aggregate capital (Tier 1 plus Tier 2) to be a minimum of 8 per cent of risk-weighted total asset (Khan, Husain, & Sherani, 2003).

Under Basel I, assets were risk weighted in line with the borrower's credit risk. Sovereign bonds, as an illustration, had a zero per cent risk weighting. Corporate and retail loans, on the contrary, carried a risk weighting of 100%, this meant 8% of capital was to be held against the value of these loans. In this framework no capital was needed for government loans. The BCBS had hoped that most banks would implement this accord, and that the risk weightings would improve asset performance (Lall, 2011).

But contrary to implementing the ethos of the Accord, Banks reacted to Basel I by implementing measures to take more risk against available capital. Basel I provided avenues for regulatory

arbitrage (Khan, Husain, & Sherani, 2003). First, since risk categories were loosely defined, similar amounts of capital were expected to cover assets varying risk profiles (such as loans to large corporations and retail customers' overdrafts). As a result, banks were incentivised to move towards riskier lending as this type of lending had higher-yields within a given risk category (from corporate loans to retail overdrafts). Second, Basel I's created an incentive for banks to move assets off the balance sheet in order to reduce capital reserve requirements because it focused only on the originate to hold model. This resulted in a gradual fall in capital levels within the banking system (Lall, 2011).

Basel I became a blunt instrument which was seen as ineffective by regulators and costly by bankers. Its bluntness and ineffectiveness was demonstrated by the Asian financial crisis which showed that banks were engaging in more complex risk which was not regulated in the Basel I Accord. The Basel I capital framework did not keep up with financial innovation; and had for all purposes become irrelevant (Lall, 2011). The Asian crisis showed that free-flowing capital created a tendency for over-investments on a given asset category and created asset bubbles which were followed by asset price bursts, with disastrous effects to all concerned.

7.1.4. Basel II: the new capital framework

As a result, markets became discontent about the effectiveness of the Basel I Capital Accord. This led to the formation of the Basel II Accord. The new accord was created to achieve the following objectives: (1) to promote the soundness and safety of the banking system and preserve existing capital levels in the banking environment; (2) to improve competitive parity; (3) to create an approach that will address current banking risk more comprehensively (Lall, 2011).

To achieve these objectives, the BCBS published a Revised Capital Framework in June 2004 generally known as the "Basel II Accord". This recent accord rested on three 'pillars'. It specified minimum capital requirements (Pillar 1); it offered directives to national regulators for supervision (Pillar 2) and created minimum disclosure requirements by setting reporting standards in place (Pillar 3) (Lall, 2011).

As the framework was published, however, its failures to achieve its stated objectives were quickly exposed. With respect to the first objective, the Committee decided to implement an 'advanced internal ratings-based' (A-IRB) capital measurement approach. Under the A-IRB approach, banks were allowed to use internal models to estimate many categories of credit risk. The intention behind this was to improve alignment between regulatory capital and underlying risk (Lall, 2011). However, only large global banking corporations were allowed to use the A-IRB model. Smaller banks were to

adopt a 'standardized approach' which was an advanced version of the Basel I method for linking risk classes to external ratings provided by credit rating agencies (Lall, 2011).

However, this was a flawed approach and the flaws quickly became evident. The fourth official 'Quantitative Impact Study' (QIS) done by the US Fed, for instance, revealed that banks operating A-IRB system would experience a 15% drop in capital requirements whilst also reaping the benefit of 31% reduction in Tier 1 capital (Lall, 2011). Since the large banks operating this tactic accounted for a noteworthy share of the market, capital quantities in the financial system declined (Lall, 2011). In this sense the A-IRB reduced the available capital within the banking system and increased riskiness in banking instead of reducing it.

Furthermore, the internal ratings model introduction also gave the larger banks significant advantages over smaller rivals, thus breaching the second objective of improving or achieving competitive parity between smaller and larger banks (Lall, 2011) Larger banks would be able to free up financial resources and increase their asset bases by doing more lending whilst smaller banks were forced to deleverage and store up more capital whilst reducing the lending activities they conducted; thus reducing their profitability and long term viability.

According to Lall (2011) this failure of the Basel II Accord to address the regulatory objectives and in particular its failure to level the competitive playing field whilst implementing regulations to the benefit of large global banks was as result of the Committee being captured by the big global banking corporations. It is important to note that such institutions were the chief originator and transferor of systemic risk during the 2007 subprime financial crisis described above.

7.1.5. The Basel III Accord

In light subprime crisis and events outlined within the background section the BCBS decided to draft a new set of regulations to promote banking resilience in order to protect the economy against perils arising from catastrophes in the banking system (Basel Committee on Banking Supervision, 2010). This came in the form of the Basel III Accord. The Accord was not intended to replace Basel II but was meant to build upon the three pillars of banking advanced through Basel II² (van Vuuren, 2012 & KPMG, 2011) whilst implementing additional reforms to create a more resilient banking system and mitigate the short comings of Basel II.

² The three pillars of Basel II are as follows: minimum capital, supervisory review and market disclosure.

7.1.5.1. Strengthening the Regulatory Capital Framework

Key to this, the BCBS intended to address the existence of excessive leverage within the banking sector and the erosion of the quality and quantity of the capital base. In this regard, it implemented various measures as follows: (1) raising the quantity and quality of capital, (2) enhancing risk coverage, (3) supplementing risk based capital with the leverage ratio, (4) removing pro-cyclicality and promoting counter cyclical buffers, and (5) addressing systemic risk and interconnectedness.

7.1.5.2. Raising the Quantity and the Quality of Capital

From a Basel III perspective, all banking risk exposures must be backed by high quality and quantity of capital. Reforms aimed at increasing the amounts of common equity capital that each bank is supposed to hold have been introduced to achieve this aim and with the overriding intention of improving market discipline and improving capital base transparency via improved disclosures (Basel Committee on Banking Supervision, 2010) (Chun, Kim, & Ko, 2012).

In this regard, the BCBS in implementing Basel III has endeavored to simplify the way capital is structured by changing the categorization of capital from the Basel II's six levels to three levels: a move that has all but eliminated the use of Tier 3 capital in the regulatory minimum. Under new regulations, total regulatory capital is divided into Tier 1 capital and Tier 2, the combination of which has to be a minimum of 8% of its risk-weighted assets. On its own Tier 1 capital must be a minimum of 6% of its risk-weighted assets and Tier 2 capital is to make up the remaining capital requirement.

This Basel III ratio advances a more stringent requirement as to what forms part of a bank's capital structure as it has also redefined what can form part of Tier 1 and Tier 2 capital. It obliges financial institutions to reserve a minimum of 4.5% of Common Equity Tier 1 capital to its risk-weighted assets (Chun, Kim, & Ko, 2012) and hybrid bonds have been removed from the calculation of the minimum requirement under common equity capital and can now form part of remainder of the 1.5% requirement to make up the 6% tier 1 Capital requirement (Cecchetti, Domanski, & von Peter, 2011) (Basel Committee on Banking Supervision, 2010) (Chun, Kim, & Ko, 2012).

Table 1: Basel Capital Requirements

Basel Capital Requirements				
Basel II Capital requirements		Basel III Revised Capital requirements		
Tier 1 Capital	Common Equity Capital non-innovative Hybrid bonds	Tier 1 Capital	Common Equity Capital (Core Tier 1 Capital)	4.50%
			Hybrid Bonds	6%
Tier 2 capital	Non-innovative subordinated bonds and innovative subordinated bonds	Tier 2 Capital	Non-innovative subordinated bonds and innovative subordinated bonds	8%
Tier 3 capital	Short term subordinated bonds			

Adapted from Chun, Kim & Ko 2012

In addition, banks can hold subordinated debt and non-cumulative dividend preference shares. This can be used to make up an additional 2% holding of Tier 2 capital (Basel Committee on Banking Supervision, 2010). This will then make up a total of 8% capital to be held against risk weighted average asset, a ratio that is similar to that which was enforced under Basel II. Tier 1 shows the differences between the Basel II and Basel III Capital requirements.

Moreover, and in addition to the 4.5% common equity holdings requirement against all risk weighted average capital, the committee has also implemented a capital conservation buffer set at a minimum 2.5% capital buffering. Adding this buffer to the minimum 4.5% requirement discussed above will mean that banks will be expected to hold 7% common equity capital. The 7% common equity capital buffer will be supported by a counter cyclical buffer which will increase capital holdings by up to 2.5% of common equity in times of excessive credit growth. This could mean that banks may at a given level of lending be expected to hold 9.5% of common equity against risk weighted average assets to buffer its lending (Cecchetti, Domanski, & von Peter, 2011).

7.1.5.3. Enhancing Risk Coverage

Notwithstanding these higher capital requirements the Basel III Accord has realised that capital requirements need to be adequately and uniformly reported across many jurisdictions. More importantly, the Basel Committee has endeavoured to ensure that risks arising from counterparties are correctly measured and accounted for. This is done by introducing measures to address inadequate risk reporting and to deal with the risk arising from securitization (Basel Committee on Banking Supervision, 2010) (Accenture, 2012). Adequate risk reporting is, in this regard, seen as an important pillar in dealing with all risk exposures (on and off the balance sheet). Banks are required to measure and report on all forms of risk.

7.1.5.4. Supplementing the Risk Based Capital Requirements with the Leverage Ratio

Such reporting is done with a view that excessive risk taking can be combated when the risk is known and measured. One such measurement tool comes in the form of the recently promulgated leverage ratio which was created to combat excessive build-up of leverage³ by creating a minimum leverage ratio. The leverage ratio is a simple, transparent ratio which is to work independently of all risk measures. This leverage ratio is the ratio of overall capital to total assets including exposures which are deemed off the balance sheet (Chun, Kim, & Ko, 2012). This ratio is intended to mitigate against the risk caused by a deleveraging process that creates a downward pressure on asset prices (Basel Committee on Banking Supervision, 2010).

³In simple terms, Leverage in banking= Capital/ Nominal Assets

This leverage ratio set forth in the Basel III Accord is expressed as the sum of Capital (The numerator) divided by the sum of all Exposures Amount (the denominator), with this ratio communicated as a percentage and expected to be above 100%. The basis of calculation is the average of the latest three month totals (Basel Committee on Banking Supervision, 2013). It is envisaged that the leverage ratio will limit the volume of bank's total exposure to regulatory capital.

7.1.5.5. Removing Pro-cyclicality and Promoting Counter Cyclical Buffers

Apart from being concerned about the excessive deleveraging process that took place during the 2007 financial crises; the BCBS was also apprehensive about the pro-cyclical impact of this deleveraging process and was intent on fighting the root causes of such cyclicity. To this end, a capital buffer which encourages dynamic provisioning has been proposed by the BCBS to resolve the pro-cyclicality problems. These measures recommend a build-up of capital buffers to create room for increased provisioning in boom times (Basel Committee on Banking Supervision, 2010).

Such buffers should be accelerated as and when credit growth expands. Thus banks will have to create and hold more capital reserve when credit growth accelerates to cater for losses associated with economic downturns preceded by massive growth in credit extension as seen in the 2007 credit crisis (Basel Committee on Banking Supervision, 2010). Restrictions will be placed on banks distributions in the event that they fail to meet the minimum capital buffer (Accenture, 2012) (Chun, Kim, & Ko, 2012).

7.1.5.6. Addressing Systemic Risks and Interconnectedness

In addition to addressing the pro-cyclical nature in banking, the BCBS has recognised the need to measure and reduce the size of big exposures as important if the bank was to reduce systemic risk. The committee had reviewed various supervisory practices and issued recommendations on large counterparty exposures. In the same light, the bank published a draft Core Principles for Effective Banking Supervision in which Core Principle 19 requires that host country laws and regulations establish prudent limits on large exposures to a single borrower or closely related group of borrowers. But the 1991 guidance and the Core Principles were not effective in setting out how banks should measure exposures to a counterparty. This has led to significant variations of practice between banks (Basel Committee on Banking Supervision, 2013).

To combat these variations in banking practice and bring about closer alignment, the Basel Committee has implemented measures to reduce the bank wide risk and market spill overs emanating from a single banking institution by introducing measures to govern systemically important banks. Such measures are aimed at improving the loss absorbing capacity of these banks

as well as introducing incentives for banks to deal with central counterparties when issuing market securities. These will in-turn limit large counter party exposures.

The committee has also set in place a number of other requirements which are meant to mitigate risk arising from individual banking institutions and various counterparty arrangements within the banking system in order to address rising systemic risk. These requirements include:

- An international regulatory framework for improved resilience of banks and banking systems,
- Capital incentives for banks to use central counterparties for over-the-counter derivatives,
- A requirement for banks engaging in securitisation, trading and derivative markets to hold more capital.
- An increased requirement for capital holding as a way of mitigating risks arising from inter-financial sector exposures; and
- The implementation of liquidity requirements that will act to curtail over reliance on short term interbank funding.

7.1.5.7. Introducing Global Liquidity Standards

Empirical evidence shows that during the onset of the 2007 financial crisis, many banks which had adequate capital levels found themselves in difficulties as they did not manage their liquidity in a prudential way. The crisis signalled the importance of managing liquidity for the correct functioning of banks and financial markets by showing that banking liquidity can evaporate very quickly and that illiquidity can last for an extended period of time. The banking system was severely stressed and this called for central banking action in order to support banking institutions in surviving the financial turmoil (Basel Committee on Banking Supervision, 2013).

This led to a drafting of perhaps the most ground breaking reform contained in the Basel III Accord which is the introduction of international liquidity standards. The committee saw a need to introduce bank wide liquidity management standards that will cover two independent and yet complementary goals. Firstly, the goal is to create sufficient high quality capital to with-stand short term stress scenario lasting a month, the Liquidity Coverage Ratio (LCR) (Basel Committee on Banking Supervision, 2010). Banks are required to have a liquidity coverage ratio exceeding 1 (100% in percentage terms) which basically means that they are to have more liquid assets than their cash outflows (Steyn, 2011) (Chun, Kim, & Ko, 2012).

LCR= High Quality Liquid Assets/total Net liquidity outflows over the next thirty days>1

Secondly, long term resilience can be ensured by creating an incentive for banks to fund assets out of more stable sources on an on-going basis, the Net Stable Funding (NSF) Ratio (Basel Committee on Banking Supervision, 2010).

$NSF = \text{Available Stable Funding} / \text{Required Stable funding} > 1$

In line with this measure, Basel III forces banks to hold higher capital buffers to counter unexpected losses on assets maturing in periods greater than 12 months in terms of the net stable funding ratio. This ratio will reflect the banks longer term liquidity and requires a holding of long term liquid assets for assets maturing in the long term (Naidoo, 2012). In this regard, banks will no longer be able to finance home loan out of current account deposits accessed from client's transactional accounts. They will in future have to finance assets like home loans by issuing fixed deposits which closely match the maturity of the home loan (Chun, Kim, & Ko, 2012). As such, pay the liquidity premium in order to source assets of similar maturities.

It is without doubt that the Basel III Accord offers the most comprehensive set of regulation ever to be advanced by an international bank regulator. It improves the capital framework by raising its quantity and quality whilst also attempting to improve risk coverage. Also worth noting is how the Basel III Accord works to make banking less pro-cyclical and thereby more stable. Furthermore, the liquidity buffer is said to make banking more stable by avoiding the risk of bank runs. However, there is a growing amount of discontentment around the issue of international regulation of banks; particularly because internationally drafted regulations are seen as being made in favour of large global banking corporations. Moreover, global banking regulations do not address country specific regulatory shortfalls. This has led to the 2007 financial crisis and is likely to lead more banking sector crises in the years to come. As a result, a number of authors prefer host country regulation instead of an international banking regulation framework like the Basel III Accord; thus questioning the idea and functionality of international regulation.

7.2. The Locus of regulation

7.2.1 Why should regulations be host country?

When the concept of international regulation is analysed, the first response from some circles is that banking is global in nature and as such banking regulation must also be made and monitored globally. But this appears to be improper logic. Many industries like food supply are global and systemically important but are not regulated globally. But proponents of global regulation still argue their point by raising the following issues. One, they argue that it would be incorrect to force banks to set up 'subsidiaries' or separate entities in each country with separate capital and assets (Persaud, 2010).

They argue that this step will reduce capital flows. In this set-up, capital-poor countries would lose the already little capital they have and capital-rich countries would gain an unfair advantage (Persaud, 2010).

According to Persaud (2010), proponents of international regulation make five arguments for their cause; first, they attest that investment would be limited by a country's savings rate if banking were not international. Second, they argue that there would be regulatory arbitrage and capital would move to areas with permissive regulations and away from areas that are stricter: increasing overall risk (Persaud, 2010). This argument has also been advanced by Allen and Giddy as early as 1979 and to which international regulations are yet to resolve (Persaud, 2010).

Third, they argue that the splitting of bank supervision would mean that no one had a good idea of the overall risk of any bank (Persaud, 2010). Fourth, host country regulations are often an excuse for financial protectionism. For example India, which has clung to host country regulation, tends to have very limited penetration by international banks (Persaud, 2010). And, Fifth, it is argued that it is prudent to have the activities of, say, Barclays bank, in a small, developing country, regulated by sophisticated regulator in London as opposed to officials in a country where regulatory competence is inadequate (Persaud, 2010).

At first the above arguments against host country regulation are enticing, indeed these arguments have won over regulators in the past. However, the 2007 financial crisis has improved the level of information that many would be commentators have on financial regulation. To be more specific, the sub-prime crisis has shed some light on problems arising with having a single capital adequacy ratio to regulate countries in different side of an economic boom or bust cycle as well as on different rating scales on the rating agencies' lists; this is seen to have created perverse pressure on capital flows (Persaud, 2010).

In countries experiencing an economic boom, regulatory capital requirements are low relative to the economic opportunities. As a result; banks in those countries have incentives to increase lending when lending may be more risky (Persaud, 2010). For countries in a recession, however, the capital adequacy requirement makes lending appear risky and unprofitable relative to other countries and so banks in those countries undertake less lending even though lending in that country may be profitable in the medium to long term (Novoa, Scarlata, & Sole, 2009) (Stiglitz, Principles of Financial Regulations: A Dynamic Portfolio Approach, 2011) (Hyun Jo, 2012). This is made worse by the downgrading/upgrading of the risk ratings by the rating agency as a country goes in and out of

recession and growth phases⁴. In this regard, Persaud (2010) shows that capital adequacy requirements are pro-cyclical and often lead to asset price bubbles. This phenomenon is likely to exist even with the implementation of the Basel III Counter Cyclical Buffer.

Persaud (2010) argues that, many lending errors are made in an economic upturn and poses the question of who is best to respond where lending in relation to oversubscription of certain assets leading to an asset price boom (Persaud, 2010). If South African banks, for example, are funding a property bubble in Namibia, which regulator is more knowledgeable to ascertain what the right amount of total lending should be in Namibia: the Namibian regulator, the South African regulator or an international regulator (Persaud, 2010)? Bearing in mind that the funding to Namibian asset markets carried out by the South African bank may be important to the Namibian economy and its regulator, but not to the South African or international regulator.

Persaud (2010) argues that If all lending and borrowing was supervised and carried out under the guidance of a national regulator, then all excessive lending which leads to asset price bubbles could be well managed and controlled. This is because the national regulator is well aware of any bubbles and structural inefficiencies within the local market.

Moreover, Persaud (2010) points out that all other laws in a country have an impact on finance. He dismisses the growing view of finance as immune from other laws within the country. He argues that contracts can be made unenforceable in a given country if they are governed by an external regulator. Moreover, centrally governed contracts can be made unenforceable should the home country decide to repeal certain conditions that were necessary for the enforcement of those contracts. To return to the aforementioned illustration, no South African lender would lend to a Namibian borrower if the borrower could ignore his/her contractual duties under the lending contract and have a Swiss court declare the arrangement unenforceable (Persaud, 2010). In this regard credit arrangements in Namibia need to be controlled by Namibian laws and regulations because the Namibian government can by law make them enforceable; thus advocating for host country regulation.

The importance of host country regulation was also put under spotlight during the recent crisis. When Lehman Brothers was going bankrupt, it pulled back its capital to the United States and

⁴ Rating agencies would downgrade a country and subsequently companies operating in those countries when the country's economy is experiencing a downturn. This makes capital more expensive for banks that are using the externally related rating system and places those banks at a further disadvantage as they have to hold even more capital compared to the banks that are using the A-IRB rating model. Furthermore, this paper will also outline that there exists perverse incentives within the rating agencies that manifest in quicker downgrades of smaller firms and more lenient view on larger banking corporations. This works to increase the divide even further.

disinvested in foreign subsidiaries and left these subsidiaries short of capital. This prompted debates in the UK of whether it will suit the region to return to an old framework of ring-fencing capital or to implement other methods to bring about the same effects; like forcing international branches to become nationally regulated subsidiaries. It appears that free capital flows advocated mainly by those pushing for international regulatory authorities pose significant risks on capital outflows in poorer (more dependant) countries when they are most needed, in times of recession(the Asian Crisis discussed in the background section is an apt example of this phenomenon). Thus, these capital flows advocated in international banking regulation have recessionary pressures in smaller countries; specifically when such capital is owned by a big foreign based multinational facing regulatory pressure elsewhere (Persaud, 2010). The recent announcement of the withdrawal of Barclays bank from African activities in light of heightened regulation is testimony to this.

Persaud (2010) argues that the 2007 crisis has led to a realisation that 'global banks are global in life, but national in death' and that this has driven recent debates to return to host country regulation (Persaud, 2010). He argues that the real cost of bank failures is that domestic policies, economic growth and social and welfare agendas are derailed (Persaud, 2010). Stiglitz (2009) and (2011) is in agreement with this idea. He notes that during the 2007 crisis public deficits rose to unprecedented levels and which led to the doubling of public debt levels; thus putting a strain on the taxpayer who has to pay back the debt. Given that they bear the cost of regulatory failures, taxpayers should not leave it up to someone else to regulate the banking that they subsidize (Persaud, 2010). As long as bailouts and all other social costs associated with banking failures are national, regulation will need to be national character.

This paper attests to this view. Bank failures have significant result on the banking stability as well as the economic growth potential of the host county; notwithstanding the devastating impact on the social welfare and economic growth potential of the country. It should, therefore, be the host countries responsibility to regulate banks within their jurisdictions.

7.2.2. Deregulation, competition, Innovation and the Locus of Regulation

Apart from the arguments that regulations should be host country, international or home country, all actors in banking are well aware of the dangers of an unregulated market and in particular the far reaching externalities that can be caused by the failure of key banks. Such externalities are not limited to the economy or region in which the particular bank operates. They also impact on the global economic sector via linkages in financial, credit and monetary flows. Indeed Stiglitz (2011) points out that financial institutions are not only a source of risk to but are also a transferor of risk. This makes the case for at least some sort of light touch international regulations.

It is for this reason why banking regulations have existed for the bigger part of history. But unlike the regulations in many other industries, banking regulations are not focused on regulating price and monopoly but rather soundness of operations. These regulations need to maintain a balance between adequate regulation and competition. Davis (1966) argues that a cautious regulator or restrictive set of laws may inhibit innovation and delay much needed change. Whilst an overenthusiastic loosely drawn regulatory stance may permit change at too rapid a pace thus creating dangers of banking failures.

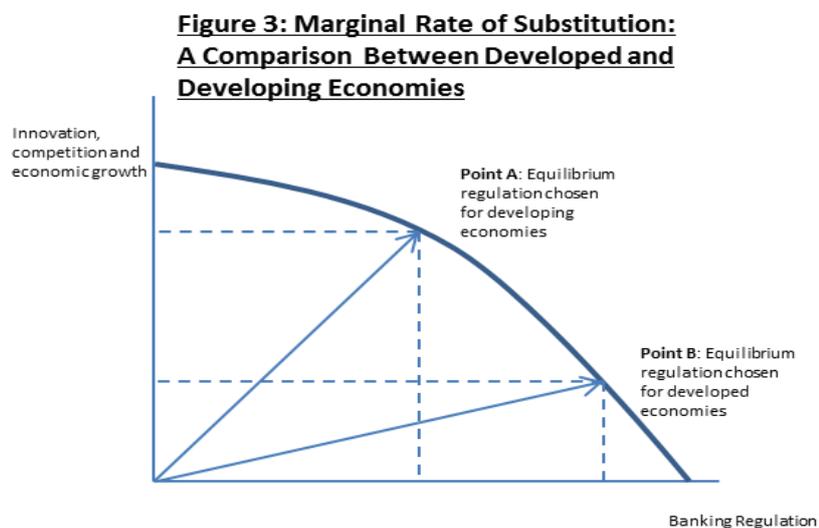
In this regard, Davis (1966) argues that bank regulation must always endeavor to set the regulatory minimum and allow bankers sufficient room to take their own course based on experimentation and experience. The regulator's challenge, as a result, is how to allow continued innovation that fosters financial deepening and faster growth while mitigating against the prevalence of financial sector crises and the potential for instability (Kroszner & Strahan, 2011)? This argument of a trade-off between innovation, competition and regulation is similar to the analogy made by Allen and Giddy (Allen & Giddy, 1979). In their 1979 paper titled 'Towards a Theory of Interdependence in Global Banking Regulation' Allen and Giddy argue that regulatory tradeoffs will force regulators to choose an equilibrium regulation point in a production possibility curve. In this regard they will have to choose between innovation and competition on the one axis and regulation or deregulation on the other at the relevant marginal rate of substitution.

In recent times, it seems as if the balance of this curve has been shifted towards deregulation or international regulation in favour of increased competition and innovation. In his 2011 paper titled 'Principles of Financial Regulation' Stiglitz lays the blame of the increased frequency of financial sector crisis in the developed world solely on the trend to deregulate financial markets. He argues that the drive to create innovative products and make banking competitive has led to a pendulum towards deregulations. This deregulation drive has; however, come full circle with many would be proponents of deregulation now arguing for more regulation.

This is because of the realisation that financial sector liberalisation proponents have got it wrong in the sense that they correctly state that liberalisation increases market competition and even innovation. But such liberalisation is closely linked to an increase in financial crises (After all financial sector liberalisation is seen to have fuelled both the Asian and the subprime crisis). To the extent that financial crises have serious repercussions spanning a time frame between 5-10 years during which time there is market uncertainty, low economic growth and the derailment of social welfare agendas; one cannot say that there are serious benefits from any liberalisation attempt (even if they increase competition and liberalisation). This deregulation creates chaos in developing economies

and can be easily dealt with by tightening the regulatory framework (Stiglitz, Principles of Financial Regulations: A Dynamic Portfolio Approach, 2011).

Despite this, Stiglitz 2011 notes that many problems faced by developing countries are different to those faced by developed countries. According to Stiglitz developing countries are struggling with too much regulation that stifles financial sector innovation, credit extension and in most cases economic growth. Importantly, this means the marginal rate of substitution between innovation and regulation is different in each country depending on the development and complexity of the banking system. In line with Stiglitz's argument developing countries must not be subject to the stringent regulatory requirements that are used in more advanced economies; specifically if their markets are not at the same level of sophistication as their developed counterparts. In this regard Stiglitz argues for a process of gradual transitions where new regulations are introduced as and when needed (Stiglitz, Principles of Financial Regulations: A Dynamic Portfolio Approach, 2011). Figure 3 below illustrates Stiglitz points. The equilibrium regulation suitable for a regulator in a developing country where banking is not complex must allow for more innovation and growth. A converse argument exists for developed country regulators who need to enact more regulation to cater for the more complex financial sector under their care.



Stiglitz 2011 notes that the problem with regulation is that all too often go beyond efforts to enhance the safety and soundness of banking systems. Much regulation is advocated by incumbents in the industry who seek to protect dominant positions by increasing barriers to entry and monopoly rents and whilst reducing competition: through some kind of processes of regulatory capture. With The G7 (now G10) having a bigger voice in Basel Committee, one may argue that regulations advanced here may be made solely for the best interest of G10 member countries and for the

protection of dominant market positions already held by the banks they control. This may be stifling international banking competition and the emergence of internationally competitive banks from developing nations (Lall, 2011).

The problem is that, by and large, competition is the most efficient mechanism of innovation. In this sense Stiglitz makes the same conclusion as Davies 1966, that the core regulatory challenge is to strike a correct mix towards enhancing competition, improving openness, and innovation in the banking sector while creating an environment that advances sound prudential oversight whilst implementing needed constraints on banks. Achieving this mix can alleviate many problems that led to the East Asian and sub-prime crisis (Stiglitz, Principles of Financial Regulations: A Dynamic Portfolio Approach, 2011).

It is unambiguous that a regulator may not at any given time focus on advancing prudent lending whilst disregarding the growth of banking sector and of competition and innovation within the sector; particularly when empirical evidence suggests a causal relationship between an innovative and thriving banking sector and the economic growth of the country. In this regard, this paper attest that regulation should be the host country's responsibility as they are better placed to control the pace of banking sector innovation and to obtain a perfect balance between economic growth and financial sector resilience. Where upon the maintenance of financial sector regulation is the primary objective of all financial regulations.

7.2.3. Macro-Prudential capital approaches and the locus of Regulation

To achieve this objective, Kroszner & Strahan (2011) argue that regulators should focus on reducing regulatory arbitrage by moving beyond institutions specific regulations and adopting a more macro-prudential regulatory approach and improving upon the transparency of reporting; by moving counterparty agreements and derivatives to a centralized clearing platforms that will monitor sizes and riskiness of counterparty agreements (Kroszner & Strahan, 2011).

This macro-prudential approach advanced by Kroszner & Strahan here has come under spotlight as a result of the recent financial crisis. It has been found that banking executives do not have the interest of carrying the costs of bank failures individually and are much more comfortable in transferring much of the social cost of failures to external players. Banking executives have incentives to doing this which will be discussed later in the paper. They will, therefore, manage risk in such a manner that their individual banking institutions are sound at the expense of the soundness of the banking system and the economy.

Regulators can circumvent this by enacting laws that ensure risk diversification as an approach to manage risk such that the failure of any bank may not result in the failure of the whole banking system. This is seen as the core of macro prudential regulation and is advocated by authors such as Basel Committee on Banking Supervision (2013) and Beale, Rand, Battery, Croxson, May, & Nowak (2011).

In addition to Kroszner and Strahan, Morris and Song Shin 2008 attest to increasing focus on ensuring that the whole banking system is stable and profitable and serving the economic growth objective of the country (Morris & Song Shin, 2008). In support to this Morrison (2011) and Beale, Rand, Battery, Croxson, May, & Nowak (2011) argue that a single bank should be managed in such a manner that ensures viability of the bank in question whilst not compromising the whole economy.

In this regard, Regulatory bodies should manage banks in a manner that avoids externalities such as: First, a failure of a single institution leading to runs on other banks that are perceived to have similar lending and investment decisions. Second, a failure of a bank that is linked to numerous other institutions via lending, borrowing and payment decisions leading to failures of other banks, who as a result of exposure to a failing bank, experience liquidity, capital and operational difficulties (Morrison, 2011) (Beale, Rand, Battery, Croxson, May, & Nowak, 2011). Fourth, a failure of a bank undermining confidence in the regulator and leading to runs in banks resulting from the banking debtors losing confidence in the banking system. Fifth, a failure of large systemic important institutions having a serious impact on economic growth as it reduces the amount of capital available for lending activities.

Underlying these authors' views is the discrepancy between private and public returns on risk and the dissatisfaction of contemporary regulatory stances that advocate for capital adequacy regulation. Despite numerous crisis situations in recent times, Stiglitz (2009) and (2011) argues that many commentators still do not push for enough macro-prudential regulation since regulators continue to harbour the view that markets are efficient and, therefore, regulation should always result in minimal interference in the working of the banking sector (Stiglitz, Principles of Financial Regulations: A Dynamic Portfolio Approach, 2011).

These commentators generally argue for capital requirements as the minimum adequate regulatory tool. Their rationale lies in ensuring that regulated banks remain solvent in order to protect the interests of small retail creditors who generally lack the resources and knowledge to monitor banking institutions. In this regard, the purpose of banking regulations is to put restrictions on the activities of a bank when certain solvency measures are likely to be breached. Stiglitz (2009) argues

to the contrary, he shows, by way of analysis, that over reliance on capital adequacy standards as a single instrument is not only inefficient but may also be counterproductive.

To understand his rationale, one will have to consider nation A which has been hit by a crisis and in which a large proportion of financial institutions fail to meet capital adequacy standards. Assuming that capital standards are not adjusted and this country has to quickly comply. The financial institutions in Nation A would find it hard to raise liquidity in the midst of a crisis. As a result, these financial institutions will be forced to curtail lending thus reducing the amount of credit available in that market. As a result firms who demand credit will likely have that demand unmet and such firms will be forced to reduce business operations or at least the ambition for enlarging business operations. In time, these adjustments can trigger an economic recession. Worse still, as companies file for bankruptcy, the number of nonperforming bank loans will rise and this will weaken the banking sectors financial positions further. In this regard, rigid application of capital adequacy may be self-defeating (Stiglitz, Principles of Financial Regulations: A Dynamic Portfolio Approach, 2011). This is likely to continue, despite the implementation of the Basel III countercyclical buffer which is inadequate in addressing inevitable problems arising economic cyclicalities.

Morris and Shin 2011 are in agreement with Stiglitz, they argue traditional capital approaches are not appropriate for obtaining a stable financial system. These regulations tend to focus individual institutions instead of addressing risk in a system context. In a system context, activities of a single bank have spill over effects that have a bearing on the viability of other banks and economic players. The stability of the system is then viewed as a public good which is undersupplied by the market (Black, Calitz, & Steenkamp, 2011). In a system context, therefore, the regulatory objective entails finding ways to reduce externalities by imposing some sort of Pigovian tax to deter market participants from engaging in risky behaviours. Such a Pigovian tax can be used in the same way as the counter-cyclical buffer advanced by the Basel III Accord. This will move the financial system towards a more efficient economic outcome (Morris & Song Shin, 2008).

Stiglitz attests to the above whilst also noting that Pigovian taxes can act as incentives to move banking towards an efficient outcome but only if these taxes are varied and not just limited to capital holdings. He argues that incentives to internalise risk are improved by imposing capital requirements on banks. Such capital requirements should not be too stringent and must be supported by other constraints. Such constraints may involve the restriction of CEO salaries; the jailing of CEO's whose banks fail and the like. These incentives may very well work to reduce excessive risk taking whilst freeing capital for lending.

Stiglitz (2009) acknowledges that the use of capital as the primary method of regulation increases the cost of operating a financial institution. Banks facing steep capital requirements will, therefore, look to increase profits and interest margins by transferring capital costs onto the consumer via high interest rates. However at such interest rates, the client willing to borrow from the bank would be one that is inherently risky. So banks will be encouraged to take on this risk (Stiglitz, Principles of Financial Regulations: A Dynamic Portfolio Approach, 2011). Moreover, at a high cost of capital banks will always look to maximise on risk and will take all opportunities provided by regulatory arbitrage to economise on capital. A phenomenon that has led to the downfall of Basel I and II and led to increased use of securitisation as a tool to move risk off the balance sheet.

In addition, Stiglitz 2011 notes two more points of disconcertion. Firstly, these risk models used in capital adequacy have an approach of measuring risk at an asset level. This is incorrect because there a number of factors that influence risk some of which have to do with correlation and concentration. On the former, a bank that has a number of low risks but highly correlated assets may be more risky than a bank holding high risk and uncorrelated assets. A same case can be made for a bank with a low concentration of assets as compared to highly concentrated assets (Stiglitz, Principles of Financial Regulations: A Dynamic Portfolio Approach, 2011).

Secondly, much of the capital regulation is focused on credit risk and not much focused is paid to market risk. Indeed the market poses sufficient risk to the bank which hedges risk using AAA graded instruments much like the securitised back sub-prime loans before the 2007 financial crises. Market failure in the sub-prime mortgage will make it difficult for the bank to gain access to those funds when they are called upon and thus result in the failure of that bank (Stiglitz, Principles of Financial Regulations: A Dynamic Portfolio Approach, 2011).

In light of this, Stiglitz advocates for putting certain market constraints on banking behaviours, like placing a ceiling on lending rates and deposit rates and on entering certain markets. He states that lending rates restriction would restrict banks from taking on excessive risk and would be beneficial for all parties. Morris and Song Shin (2008) and the BCBS (2010) agree with Stiglitz but provide alternative solutions. They advocate for two complementary approaches to regulation. First, they present a case for liquidity regulation, which places limits on the composition of a financial institution's balance sheet, and not merely on the size of its equity relative to its total assets. Second, they believe that banks need to hold a simple leverage constraint that is independent of the riskiness of assets as a better way to ensuring system stability than the traditional risk-based capital charge. This may be a measure that places a limit on the bank's lending depending on the combined risk weighted average assets held by the bank (Morris & Song Shin, 2008). Both these measures are

consistent with the Basel III Accord; although it can be said that they are still too reliant on capital regulation as the primary tool of ensuring banking soundness.

As a result, there remains disconcertion in some sectors of the impacts of capital adequacy, limits to risk, liquidity and leverage on banking institutions in developing economies. In a recent paper Khan, Husain, & Sherani (2003) present empirical evidence that the new capital adequacy and liquidity ratios, even with risk weights attached to them, may have led to a reduction in lending and overall liquidity in developing countries. Authors like Khan *et al* (2003) argue that capital adequacy ratios are likely to have asymmetric effects when implemented in countries which are at different stages of economic development and economic cycle. Banks that are in a recessionary cycle are more likely to face capital constraints and to reduce lending than those that are not (Khan, Husain, & Sherani, 2003). Such banks would normally operate in low liquidity environment and are likely to experience both Capital and Liquidity shortfalls.

These views attest to the fact that the capital standards even if they are uniform have differing outcomes in different countries. Developing countries with capital shortages are likely to feel the brunt of lower economic growth when following capital standards whilst they are also likely to witness increased cyclical of credit growth throughout boom bust cycles as capital is allowed to freely enter and leave the country. The impact of rating agency⁵ downgrades in developing countries also has an impact on these boom bust cycles. This paper attest to these views with the understanding that developing countries as stated in Stiglitz 2011 seem to be over regulated and this stifles credit growth, banking sector innovation, financial inclusion and ultimately economic growth in those countries.

Furthermore, this paper will take on the view that the 28 member countries of the Basel Committee do not provide views and regulations that are diverse enough to manage the international banking sector. And that much of the discussions in the Committee is dominated by the G10 and seems to be advancing the cause of large international banking corporations. Therefore the regulations contained within the Basel Accords are not representative of every country specific scenario.

Moreover the fact that the regulations are not enforceable by way of legal standing and may be flouted, as has been done by the UK whose regulators are known to adopt a light touch regulatory

⁵ The impact of rating agencies will have to be viewed cautiously. Non-AIRB banks have their capital reserves tied to rating agency outcomes. Such regulatory outcomes being closely linked to the sovereign rating outcome in the country in which the banking institution operates. Sovereign downgrades in third world countries may have disastrous effect on the capital holdings of non-AIRB banks in those countries. This will have adverse effect on liquidity as more capital has to be reserved. To make matters worse, institutional investors tend to withdraw much needed liquidity from countries facing downgrade. Thus the result may be a shortage of both banking capital and liquidity.

stance, continue to leave room for regulatory arbitrage. This may leave developing economies who comply with the Basel Accords with less capital and liquidity in their economies as they battle regulatory competition. This paper argues that Basel in all its instalments has failed to address the problem identified by Allen and Giddy 1979 in that it is yet to address the international problem of regulatory competition and the downward spiral it has on regulatory standards. Importantly, Basel has failed to level the playing field, thus making it difficult for banks within developing countries to become internationally competitive.

Apart from this, this paper argues strongly for a national host country regulator that is able to ensure that the social and economic growth of the country is adhered to by implementing relevant regulations that will safeguard the financial sector and not result in unnecessary regulatory burdens on banks. This should be backed by a strong regulator who is able to implement, monitor and enforce suitable regulation. In this regard, the South African Reserve Bank given its track record has been able to do so; by implementing regulations like the National Credit Act and recent amendments to the act which has ensured a vibrant but stable financial sector.

7.2.4. Micro-Prudential Approaches and the Locus of Regulation

To add onto this, this paper will argue that there are exists in a given economy and banking sector, a number of unique incentives and constraints that drive decisions of all participants. The existence of these incentives make it all the more necessary to have a host regulator in charge of the market. In a review of Stiglitz book titled 'Freefall', the paper finds a number of incentives that were peculiar only to the United States that drove the early 2000's housing bubble and ultimately the 2007 financial meltdown. Namely; Incentives to lend to the least credit worthy individual, Incentive to offer multiple bonds, Incentive to employ the originate to distribute model, incentive for rating agencies not to downgrade assets and banks, incentive to foreclose, incentive to chase market bubbles and the incentive to default (Stiglitz, Freefall: Free Markets and the Sinking of the Global Economy, 2009).

As noted within the background section in this paper, it is indeed true that the lending that took place during the years leading up to the crisis were to creditors with good credit score. However most of the lending was advanced with insufficient documentation and to individuals who could not afford to repay (Swagel, 2009). Most of the bonds were issued at 100% or even greater LTV's, often restructured multiple times during its life and involved high transaction costs. The lenders made excessive profits from the high transaction costs⁶ and the restructures which carried a fee as well as

⁶ In South Africa, the National Credit Act and the recent amendment National Credit Act Amendment regulate lending fees. Steep competition between the four major banks also works to reduce other non-lending fees.

an opportunity to increase transaction cost even further. As a result increasing profits on transaction costs, mortgage originators barely considered the ability to repay and liar Bonds (where the borrower does not indicate his ability to repay) became common practice (Swagel, 2009) (Stiglitz, 2009).

In addition borrowers were allowed to take on additional bonds with other mortgage originators and this led to many of the bonds being exposed in excess of 100% LTV's. This in turn, was fuelled by the originate to distribute model where parties originating the loan were least worried about the loan quality as they often re-packaged these loans and sold them to third parties (Swagel, 2009). To make the problem worse, rating agencies that were tasked to regulate credit quality of securitised products were faced with a conflict of interest (Stiglitz, *Freefall: Free Markets and the Sinking of the Global Economy*, 2009).

This is because rating agencies are profit making institutions and in the years leading up to the crisis, they had worked with the big banks to offer advice on how to get a AAA rating and thus could not morally downgrade a bank which had followed its advice. This dilemma led to many would be junk rated assets being rated AAA. As a matter of fact the rating agencies only downgraded banks when it had already become public knowledge that their assets were junk. In this regard the rating agencies failed to play their role of warning the market of impending risk (Stiglitz, 2009).

Moreover, as securitisation grew, the amount of lending owned and managed by local banks decreased. This presented its own problems: firstly community banks which were most likely to be lenient on defaulting customers and allow them time to recover and/or even write down some of the debt controlled less debt. Secondly the holders of securitised mortgages, who were controlling more debt than ever, were least likely to restructure or write down debt and were more interested in foreclosure, and thirdly, with multiple bonds on the property, the holder of the second lien was likely to be even more interested in foreclosure as the restructuring of the debt to a lower balance would most likely result his/her lien being all but null and void. All of these worked to increase the incentive to foreclose and, as a result, the amount of foreclosures increased (Stiglitz, 2011).

With this increased risk to foreclose, the asset price bubble in the US housing market which had been fuelled by too much capital chasing too few houses was sure to burst. Foreclosures led to an increase in property sales at fire sale prices and as a matter of course led to a significant decline in property prices (Stiglitz, *Principles of Financial Regulations: A Dynamic Portfolio Approach*, 2011). This meant that borrowers who had borrowed in excess of 100% bonds were faced with having to repay more than what the house was valued at a time. Worse still, the US mortgage system employs a zero

recourse mortgage principle meaning that banks who reposes a property cannot sue the customer if the sale proceeds from the home are less than the outstanding balance. Thus individuals who suddenly owed more on the property than what it was worth could simply default on the property and walk away (Stiglitz, 2009).

It is important to note that all of these problems were unique to the United States at that point in time and required the US supervisor to implement methods of recourse. Furthermore, as seen on the regulations advanced by the Basel Committee, international regulations do not deal with country specific structural problems such as these. To the extent that such structural problems exist in the US, it is easy to believe that similar problems exist in other countries and require regulators each host country to implement micro-prudential approaches to deal with unique economic incentives that shape behaviours in their markets. In this regard, the importance of host country regulation cannot be over emphasised.

It is the failure to regulate these micro-prudential risks that lead to market failures and financial crises. As one author notes it, financial crisis do not come about because there is no regulation, but it comes about because of loopholes within the regulations. The loopholes in these micro prudential areas led to the 2007 financial crisis as it allowed for a build-up of excessive and unchecked leverage. Host country regulation should be strong enough and the regulator must be well aware of the markets which they regulate in order to ensure that all country specific regulatory loopholes are mended.

7.3. The Regulation of Contemporary Banking Matters

In this regard, the regulator must go as far as regulating items which are traditionally viewed off the balance sheet. Indeed one of the main reasons for the severity of the 2007 economic and financial crisis was that the banking sectors in a number of countries had created large sums of on-and-off balance sheet leverage; which was followed by a sustained erosion of the quantity and quality of the capital base (Basel Committee on Banking Supervision, 2010). The crisis raised questions of whether current regulations were sufficient to deal with contemporary banking problems presented by larger banking co-operations.

This section will seek to review literature on key aspects of modern banking regulation at an international level. For the Purpose of this paper key aspects of regulation will be summed up as systemic risk regulation, capital regulation and liquidity regulation; with liquidity regulation having gained prominence in recent literature.

7.3.1. Systemic Risk

At a primary level, systemic risk arises from the likelihood that some event or series of events could result in a severe destruction of the banking sectors' ability to provide lending to the economy (Yellen, 2011). This risk usually emanates from reduced market capitalisation and liquidity positions brought about through sustained periods of reckless or negligent lending, provisioning and risk hedging. The existence of systemic risks is largely characterised by low market liquidity, withdrawals of cash from the economy, and a large number of bank runs.

All these characteristics were prevalent in the time leading up to the 2007 financial crises guiding a massive contraction of lending and subsequently economic growth. As a result of this period, and in order to avoid further financial shocks, regulators have to play a more active role in various economies to tackle the dangers of systemic risks. But in order to do so, Yelland (2011) argues that policy makers need to identify and monitor the key determinants of systemic risk. The key factors that have been identified as conduits to systemic risk include, high levels of leverage, growing interconnectedness and collective moral hazard.

7.3.1.1 Factors increasing systemic risk

Yellen (2011) states that the first factor that contributes to increased systemic risk is the accumulation of high levels of exposure and leverage within the banking sector along with excessive reliance on short term unstable funding; with most banks that rely on unstable funding likely to experience capital adequacy problems.

The immediate impact of such a problem can be deduced from an analysis of the optimal bank decision model created by Eichberger and Summer (2005). The model displays that a bank facing capital constraints is less likely to be able to fulfil its function of providing credit in the market and that such a bank may pose a risk to the banking system by transmitting the risk potential in new credit to banks that do not have the capability to service the market/niche that that bank serves. Hyun Jo (2012) elaborates that a failure of a domestic bank can lead other banks to failure and can bring about failures in most financial sectors by transmitting: credit, market, and liquidity risks.

Such transmission of risk is closely linked to the second and perhaps most fundamental factor that increases systemic risk which is the growing interconnectedness amongst various banking institutions. The interconnectedness of banking institutions increases the risk of a failure in one banking institution transmitting failures onto other institutions with similar practices (Yellen, 2011). Such a bank failures can have various serious implications for the whole banking system. One, a failure of a single institution can lead to runs on other banks that are perceived to have similar lending and investment decisions. Two, a failure of a bank that is linked to numerous other

institutions via lending, borrowing and payment decisions may lead to a failure of other banks, which as a result of exposure to a failing bank, experience liquidity, capital and operational difficulties (Morrison, 2011).

As outlined by Stiglitz (2011), a third factor leading to a transmission of systemic risk is the increased similarities in risk hedging practices leading to concentration risk. An example is when a bank purchases near cash instruments to cover its liquidity shortfalls from company X, where company X is considered a good company and so all the banks in the market use it as a hedging instrument. Then all the players in the market will reduce institutional risk as company X is considered a safe risk hedging avenue. However, in the event that company X fails then all the Banks will fail with it.

In this regard, systemic risk can be better managed when each institution diversifies its hedging activities. Conversely, following similar risk diversification methods would increase systemic risk. But under the current bailout culture, banking executives are more likely to hedge risk in similar ways as it improves the likelihood of being bailed out should the institution or a group of institutions fail. This phenomenon is commonly known as the collective 'moral hazard' where market participants act as a collective to the detriment of bank depositors and other market stakeholders (Basel Committee on Banking Supervision, 2010) (Beale, Rand, Battey, Croxson, May, & Nowak, 2011).

7.3.1.2. Attributing risk

According to Tarashev, Borio, & Tsatsaronis (2010), factors leading to an increase in systemic risk need to be closely assessed as to their potential impact on the market in order to determine the right tool to use in regulation and the right institutions to regulate. In this regard, a systemic risk model to attribute risk to individual firms needs to be established in order to measure the quantum of risk that can be attributed to that firm. This section will deal with various systemic risk models that have been advanced in recent literature in order to attribute systemic risk to and individual firm.

The 'Value at Risk' model is the most popular method for allocating risk across individual bank exposures. It considers the losses that each bank can generate in an event of general distress (Tarashev, Borio, & Tsatsaronis, 2010). The model is shown below as:

$$SR = SC * PC * ES$$

Where

SR = Real systemic risk of a firm

SC= Real social costs of a crisis per rand of capital shortage

PC= Probability of a crisis

ES= Expected capital shortfall of the firm in a crisis

(Acharya, Engle, & Richardson, 2012)

In this model, expected capital shortfall captures many characteristics which are believed to be important when measuring systematic risk; such characteristics being banking size, the level of interconnectedness and leverage in the banking system. The presence of these characteristics will increase the expected shortfall of any bank when the financial system experiences turmoil and may result in widespread losses should they be present on a number of financial institutions operating in the same sector or geographical area.

Another method of measuring systemic risk has been proposed by Gordy and Lütkebohmert (Tarashev, Borio, & Tsatsaronis, 2010). They make use of the asymptotic⁷ single risk factor (ASRF) model and a so-called "granularity adjustment" (GA). They assess Portfolio Value at Risk (VaR) underpinned by the internal rating system advanced in the Basel II⁸ and III Accords and assume that credit risk will arise from two sources: systematic risk and idiosyncratic risk. Systematic risk arises because of unexpected changes in macroeconomic and trading environment to which all borrowers are exposed. Such risk cannot be varied through diversification of borrowers.

The remainder of the risk would all be (as they call it) idiosyncratic (peculiar to the individual bank) and would depend on a bank's lending patterns and the extent to which it diversifies its lending book. As a portfolio becomes more diversified, in the sense that the largest individual exposures account for a smaller share of total portfolio exposure, idiosyncratic risk is diversified away at the portfolio level (Gordy & Lütkebohmert, 2013). Although this model does not solve for system wide risk, it provides the ground work for the analysing banks that pose a potential threat to the system as a whole (Adrian & Brunnermeier, 2014). Such banks would be the least diversified and/or carry relatively large counter-party debt.

Adrian & Brunnermeier (2014) argue that a single institution's risk measure characterised by VaR Model and similar to models advanced in the Basel Accords do not necessarily reflect a firm's contribution to total systemic risk, for a number reasons. Firstly, some institutions are so large and

⁷ A value that is more easily determined when a number of variable have been considered. The variables themselves could be infinite

⁸ Portfolio risk in these model is expressed as $EL=PD \cdot EAD \cdot LGD$ where:

EL is expected loss

PD is the probability of default

EAD is the exposure at default, and

LGD is the loss given default

interconnected so as to cause negative risk spill over effects on other institutions. Secondly, a number of smaller banks may be systemic if they behave as a group via interconnections or by undertaking similar investment decisions. Adrian & Brunnermeier (2014) state that systemic risks is generally accumulated in periods of low volatility, and manifests during crises: so a good systemic risk ratio should track this accumulation.

To achieve this, Adrian & Brunnermeier (2014) advance another method of computing a firm's systemic risk namely the "Conditional Value at Risk" (CoVaR). Applied to a financial system, CoVaR would measure the severity of distress in one institution, on a condition of distress in another institution or in a group of institutions on which the measured institution has dependencies. For example, a CoVaR measure could equal the VaR of losses in bank A conditional on the losses in the entire banking system being equal to their VaR level. Since CoVaR captures the interdependence of losses on between bank A and other banks in the banking system, it is a specific measure of the systemic risk posed by bank A and how external (systemic factors) have a bearing on that risk (Tarashev, Borio, & Tsatsaronis, 2010).

7.3.1.3. How systemic risk should be regulated

This CoVaR measure seems to highlight the fact that systemic financial events have a bearing on all banking firms and that all banking firms have a bearing on systemic events; thus emphasizing that subtle yet important inter-connection of all financial institutions in a given market. In systemic financial events, spill overs across institutions can occur from direct contractual ties as well as from increased counterparty credit risk, these spill overs may also be indirect and arise from market price adjustments and liquidity spirals. As a result of these spill overs, the measured conditional movement of institutions' assets and liabilities tends to rise above and beyond levels purely justified by the fundamentals in the VaR model. Systemic risk measures must, therefore, measure the potential for spreading financial distress of a number of institutions onto other institutions by tracking the increase in conditional movements. It is for this reason that the CoVaR measure is gaining popularity as the most appropriate measuring tool (Adrian & Brunnermeier, 2014).

Once the relevant riskiness of an institution can be measured through the CoVaR and probability of systemic risk will need to be appropriately managed. Interconnectedness of banks has come into the spotlight in recent years with most regulators focusing on banks that are expected to pose the most systemic risk. As a result, certain internationally active banks have been identified as systemically

important and have been given the name tag too big to fail⁹ (see, (Morrison, 2003) and (Mishkin & Feldman, 2006)). These kinds of banks were widely protected during the 2007-9 financial crises in order to avoid the likely implications of their failures. Below is an argument that Ben Bernanke used to justify the Federal Reserve Bank's rescue of Bear Stearns to the Joint Economic Committee¹⁰;

“Normally, the market sorts out which companies survive and which fail, and that is as it should be. However, the issues raised here extended well beyond the fate of one company. Our financial system is extremely complex and interconnected, and Bear Stearns participated extensively in a range of critical markets. With financial conditions fragile, the sudden failure of Bear Stearns likely would have led to a chaotic unwinding of positions in those markets and could have severely shaken confidence. The company's failure could also have cast doubt on the financial positions of some of Bear Stearns thousands of counterparties and perhaps of companies with similar businesses. Given the current exceptional pressures on the global economy and the financial system, the damage caused by a default by Bear Stearns would have been severe and extremely difficult to contain. Moreover, the adverse effects would not have been confined to the financial system but would have been felt broadly in the real economy through its effects on asset values and credit availability.” (Morrison, 2011, p. 501)

This statement by Bernanke highlights some method of assigning systemic risk was done on Bear Stearns and it was concluded that the failure of Bear Stearns had the potential of significant market spill overs. Furthermore, the solution for the Bear Stearns problem highlights a growing trend to bailout systemically important banks as a manner to avoid a collapse of the whole banking system. Critics of this kind of approach argue that bank bailouts create an environment where the social costs of bank failures are borne by other market players and that the banking institution itself bears

⁹ It is important to note that the existence of the too big fail phenomenon is as a result of regulatory forbearance. The repealing of the Glass Steagall Act in the United States led to mergers of retail and investment banks that had thither been prevented. Furthermore, the A-IRB made it easier for international banks to expand and thus grow even bigger. In particular the perceived regulatory capture of the Basel Committee by internationally active banks which has led to preferential capital regime for these banks has increased the rate of growth for these banks whilst requiring them to hold less capital. The problem therefore became a “too big to fail and most likely to fail problem”.

¹⁰ Note that this bailout was from the Fed and not the US government. The fed has no political accountability but has access to the national purse. These rescues cannot, therefore, be scrutinised at a public forum. It is important to note that despite there being an explanation from Ben Bernanke such explanations are not necessary when bailouts are done by the Fed. As a result most of the bailouts done by the Fed were costly to taxpayers and to the advantage of banks that had taken on excessive risk. These banks were in effect not held to account for banking failures resulting from excessive risk whilst they kept all the profits arising from excessive risk taking. This led to what is now known as ersatz capitalism in banking where gains are privatised and losses are publicized (Stiglitz, 2009).

so little of the cost of failure. The bank bailout culture is seen to be fuelling a collective moral hazard¹¹. Stiglitz (2011) points out that constraints on banking size and span of operation will all but eliminate the ‘too big to fail’ problem; whilst Farhi & Tirole (2012) argue that the bailout culture should be abandoned and banking executives should be penalised for failing to manage risks in a manner that is prudent.

In addition, Besar, Booth, Chan, Milne, & Pickles (2011) argue that senior bankers should have pay structures that are linked to risk exposures and that they should not be paid bonuses until it can be determined that the projects they undertake are risk free. This is vital in ensuring that much of the social costs of bank failures are borne by the individuals making decisions (Beale, Rand, Battey, Croxson, May, & Nowak, 2011). According to, Besar et al (2011), linking the outcomes of banking decisions to the decision makers might be achieved through giving the supervisor powers to appoint and dismiss non-executive directors of banks, a mechanism that has been followed for a long time in South Africa and was implemented in Ireland during their banking crisis.

Many authors who disagree with bank bailouts argue that banking should be regulated at an individual firm’s level and ensure that banking executives take into account long-term and systemic risks. Such banks should mind the possibility of a total collapse of banking networks and interconnections between a single bank and other banks and the customers of that particular bank. In this scenario, the failing bank will bear all the costs of its failures and will have little or no impact on the rest of the financial system. However, this seems improbable in today’s highly connected banking system.

But proponents of this view see the punitive measures on banking executives as a crucial tool in managing agency problems and reducing CoVaR in each banking institution. However, opponents note that moves to reduce CoVaR may include diversification of loan portfolio and managing a large number of smaller counterparty agreements; which may be costly for banks to manage. Moreover opponents argue that having strict regulations to guard banking employees may stifle financial sector innovation and reduce growth within the banking sector which necessarily needs to evolve to cater for differing market needs, not to mention that monitoring efforts and costs would be greatly increased (Stiglitz, 2011).

¹¹ The recent crisis has revealed that banking executives do not have the interest of carrying the costs of bank failures individually and are much more comfortable in transferring much of the social cost of failures to external players. They will, therefore, manage risk in such a manner that their individual banking institutions are sound at the expense of the soundness of the banking system as a whole. Farhi & Tirole (2012) have termed this behaviour of managing risk so that the bank is likely to be bailed out should it fail instead of following more prudent risk hedging practices that are much safer for the bank and the banking system as “Collective Moral Hazard”.

In addition to removing bank bailouts, many authors argue that deposit insurance should also be removed as it produces the same kind of risk as the existence of bailouts, namely collective moral hazard. Cooper & Ross (2002), Craine (1995), Chan, Greenbaum, & Thakor (1992) argue that deposit insurance increases risk taking by banks. Chan et al (1992) add that overly priced deposit insurance leads to an inequitable transfer of wealth by making credit more expensive: whilst correct pricing deposit insurance negates any transfer of wealth, does not produce an efficient allocation. Whilst acknowledging that deposits insurance leads collective moral hazard, Stiglitz (2011) argues deposit insurance should continue to be used as a way to ensure that individual participants do not have to bear the labour of monitoring deposit taking institutions. Stiglitz argues that regulation and supervision is a public good and should be managed publicly at the hands of the regulator.

But despite this, Chan et al (1992) demonstrate that above being market inefficient, the fixed-rate insurance system incentivises firms to take on risk and insulate banks through deposit insurance from market imposed disciplines that are necessary for the bank to properly evaluate risk and take measures to avoid it (Kim & Santomero, 1988).

To deal with the collective moral hazard and the deposit insurance moral hazard, Allen, Elena, & Marquez (2011), Kim & Santomero (1988) and Mazumdar & Heaun Yoon (1996), argue that banks must be forced to lend on equity which is more costly as opposed to lending against their liability book. This is because banks offer credit to businesses and are supposed monitor them, with such monitoring expected improve the loans expected returns. Given the cost of monitoring and the limited liability on banks that lend against the deposit book, banks are faced with a moral hazard problem when choosing the correct monitoring effort. However, implementing measures to ensure that banks lend at the back of equity will only work in traditional banking and will not solve for the risk posed by the 'originate to distribute model'.

But proponents of this view continue to argue for lending against equity which is more costly to obtain and will therefore create an incentive to install proper monitoring efforts. This induces financial institutions to absorb costs associated with its own default, thus addressing the moral hazard problem that arises from excessive reliance on lending against the deposit book (Allen, Elena, & Marquez, 2011). In this manner the banking sector will self-regulate and ensure that shareholder value/equity is maintained at all cost. However, literature has almost neglected to analyse that lending against equity reduces the amount of reserves available to buffer the banking sector against trading losses. With the banks having to keep increased reserves against equity as per Basel III and then having to lend against the remaining equity, most banks will be left with insufficient reserves to weather years of financial losses.

In light of this, Allen, Elena, & Marquez (2011) advance that increasing the loan rate as a method to improve the monitoring of loans. A minimal increase in the lending rate creates a greater incentive for banks to monitor their loans in order to receive the higher return if the loan is repaid. However, increasing the loan rate is sub optimal as it decreases the efficacy at which banks are able to perform their function of liquidity transformation. This will impair the banks' ability to provide credit to the economy: intuitively, lending against equity which is also more expensive and would lead to an increase in the loan rate as banks have to adjust the interest spread and will have similar results as those of increasing the loan rate for the goal of improving monitoring.

Therefore, these devices, namely: the management of executive pay, managing risk at an individual firm level and lending at the back of equity are said to be able to deal with the main causes of systemic risk as mentioned above. Banks which conduct their lending at the back of equity will lend more prudently and are less likely to be over leveraged. Executives who face strict and punitive measures for taking on excessive risk will take on more prudent measures of lending and risk hedging and will ensure that the bank does not fail and will therefore not transmit credit and liquidity risks to the rest of the banking system. But the same executive may become over prudent and stifle necessary innovations.

This paper supports the view that the management of executive pay as a crucial tool to managing the excessive risk taking of banks managers as well as the agency problems that excessive pay based on profits actually creates. Lending at the back of equity is also support as light touch method of managing risk. Specifically since equity buffers are necessary to ensure sustainability of banks that experience short term losses. It is important to note that all these initiatives will only work for traditional banking where the securitisation and other instruments used in the 'originate to distribute model' are not prevalent.

7.3.2. Liquidity

For the purpose of this paper, a liquid asset is defined as a financial instrument that the firm can quickly resell at its true value and whose market value is likely to remain constant (Tirole, 2011) (Holstrom & Tirole , 2000). These instruments can be grouped as instruments of raising Market or Funding liquidity. A bank can rely on these two different forms of liquidity to meet on-going liquidity needs or to circumvent potential liquidity crises.

For example, when a bank faces liquidity shortfalls the bank may either sell a portion of its shareholding or obtain 'Market Liquidity' on the other hand a bank can obtain 'Funding Liquidity' by going into the credit market and borrow funds whilst paying the interest margin or entice depositors to deposit funds into the bank (Tirole, 2011).

The availability of both these forms of liquidity will depend on the economic environment as well as on corporate governance. For example, improved corporate governance will put investors' at ease about the guarantee of receiving back their invested funds. Thus, better corporate governance facilitates refinancing and thereby boosts market and funding liquidity (Tirole, 2011). As we shall see, there is a correlation between funding and market liquidity which poses various risks; causing liquidity shortages in the market during bad economic cycles. An example showing this correlation is investor behaviour during a recessionary cycle; during a recession, an investor will be less willing to deposit funds in the bank if they fear that the economic collapse can lead to bank failures and result in a funding liquidity shortfall. The same investor will be unwilling to fund the balance sheet of a bank because the economic collapse or corporate governance is such that the value of the individual share is declining or is expected to decline. Hence funding and market liquidity tends to co-exist during a recession.

Liquidity transformation, therefore, becomes crucial for banks looking to weather liquidity shortfalls during crisis times. Tirole (2011) identifies three activities that a bank can follow in the liquidity transformation process. First, the banking institution has to induce government and private investors to invest money in the bank. Second, the bank will also have a task to transform such liquidity into assets that will yield return and profits for the bank. Third, the bank will have to keep sufficient assets that can be quickly converted into cash to satisfy depositors demand for liquidity.

7.3.2.1 Methods of managing liquidity transformation within banks

According to Tirole (2011) these activities are easy to achieve using methods of corporate financial management. First, a company's capital structure sets a timeframe for paying investors. Short-term debt necessitates the paying out of cash and uses current liquidity reserves. Long-term debt creates room to adjust to liquidity needs and but creates pressure by placing constraints on the potential new debt levels that a firm can raise. The preferred liquidity instrument is one that allows a firm to delay payment as much as possible. In this regard, equity is the most preferable liquid asset as it does not have a precise timetable for the payment of dividends (Holstrom & Tirole , 2000).

Furthermore, corporate financial management provides tool on managing cash flows when revenue and expenses are not properly synchronised. This lack of synchronicity between cash inflows and cash outflows requires financial institutions to find liquidity sources or methods to meet the day-to-day financial needs even in times of potential shortfall. Two commonly used methods for corporate finance as well in liquidity transformation are available to this purpose: "Finance as you go" and "Liquidity Hoarding" (Tirole, 2011).

Finance as you go occurs when the firm goes into the capital market to raise capital and in return offer new share subscriptions as and when liquidity needs arise (thus raising the firm's equity position). Markets would, in general, fund temporal mismatches between cash inflows and disbursements (Funding Liquidity and liquidity uses) in perfect markets. However the real world is not perfect, financial market imperfections, which encompass poor corporate governance, unreliable cash flows anticipations, moral hazard, adverse selection, irrational behaviours, transaction costs as well as market uncertainty creates difficulties for liquidity-strapped corporations to raise financing even for positive net-present-value actions (Tirole, 2011) (Peter & Fishman, 2007).

For this reason, banking institutions must have contingent plans in place in order to deal with potential liquidity shortages. That is, they must conserve liquidity by keeping liquid assets on their balance sheets or by obtaining loans from either a parent company, other banks and or insurance companies (Tirole, 2011). This practice is generally known as Liquidity hoarding. There are many proponents of liquidity hoarding including (Brunnermeier & Pedersen, 2009) (Cecchelli, Domanski, & von Peter, 2011) (Kovalik, 2013) (Tirole, 2011).

This is because liquidity hoarding builds Liquidity buffers that may diminish systemic risk in four ways. First, sufficient liquidity buffers reduce the risk of bank runs by creditors (Kovalik, 2013). Second, substantial amounts of liquidity can decrease a banks reliance on business revenues or on withdrawing the lending they provide to creditors as means to obtain liquidity (Kovalik, 2013). Third, if banks have inadequate liquidity, liquidity buffers may buy their executive officers and regulators time to find other sources of liquidity in a cost effective manner (Kovalik, 2013) and Fourth, liquidity buffers reduces a banks reliance on central banks for funding during a liquidity stress event. This dependence on central banks is a cause of collective moral hazard (Kovalik, 2013). Recent literature has begun focusing on equity as the more favourable way of adopting the liquidity hoarding approach (Farhi & Tirole, 2012).

However, even supporters of liquidity hoarding agree that the practice is detrimental when done in excess. When one institution stops providing credit to Firms in order to hoard liquidity, the other institutions may be forced to service the market niche that that particular institution serves; leading to improper credit granting and potential increases in systemic risk. Furthermore if the institution which hoards liquidity is able to increase its market appeal by hoarding liquidity, other institutions will also start hoarding liquidity; leading to a chain effect that spreads throughout the system (Kovalik, 2013). This then reduces the effectiveness of the banking sector to fulfil its liquidity transformation mandate.

Furthermore, liquidity hoarding in banking is a relatively new concept and leaves a few basic questions unanswered. The dynamic management of liquidity does not resolve the conundrum of what to do after the institution has faced liquidity stresses and has drawn down all the available liquidity. Drawing down on a bank's liquidity leaves the bank vulnerable to further liquidity shocks that may happen in the not so distant future. Literature has not yet offered guidance around this conundrum of repeated liquidity shock events (Tirole, 2011).

However, DeMarzo & Fishman (2007) shed some light on this conundrum. They, by way of illustration, demonstrate that liquidity should not be completely exhausted even after it is decreased during a liquidity stress event. Good corporate governance should ensure that a firm downsizes its lending activities in bad economic times, and avoid being totally exposed to liquidity risk¹². Furthermore a regulator should be able to quickly step in and limit operations of banks which fail to meet its minimum liquidity requirements (Tirole, 2011).

7.3.2.2 Rationale and method for regulating liquidity.

As previously noted, liquidity hoarding is a new concept; capital adequacy has traditionally been the only tool for circumventing all forms of banking crises including liquidity crises. An important regulatory conundrum is whether it is feasible to add on a liquidity measure onto the solvency measure (Tirole, 2011) and whether regulators can trust banks to correctly manage their own liquidity. Tirole (2011) states that banking firms left on their own may well under or over hoard liquidity.

Under hoarding may come about by some sort of asset substitution when a bank surrenders liquidity held as insurance for size of the balance sheet. The bank in question may sell its liquid securities to enlarge the size of its fixed or illiquid securities. This institution will have inadequate liquidity to cover future shortfalls. If a future liquidity shortfall is small, investors will inject new liquidity and rescue the ailing bank. Therefore, the availability of funding liquidity can lead the bank to overinvest in illiquid assets (Tirole, 2011). If this is the case, these institutions may find themselves insolvent and will pose systemic risk to the whole banking sector should it happen that funding is unavailable in difficult economic times.

¹² It is important to note that reducing lending is bad for the economy; leading to less liquidity available for firm's expansion. A bank that is reducing its lending is not able to act out its maturity transformation role. This may increase systemic risk

On the contrary, institutions may hoard large sums of liquidity to put themselves in a position to finance new lending ventures in future; this low investment form happens when the institution cannot identify suitable illiquid investment vehicles that have a positive net present value (Tirole, 2011). The lack of this identification may be as a result of poor management within the financial institution itself; this may lead to a reduction in economic growth potential. Using this rationale, the choice of how to manage liquidity cannot be entirely at the behest of bank. They should thus be regulated by an external party in the form of a regulatory body.

Such regulatory bodies are particularly troubled by the liability side of the balance sheet, and more specifically they worry about retail depositor's welfare. The main objective of regulators is to offset for the small depositor's inability to monitor and exercise control over banks they invest their money with. Thus the banking regulator will represent the interests of the retail depositors and borrowers (Tirole, 2011). With this representation in mind, regulators will generally push for more liquidity to be held and will force institutions to overhoard; with the potential result being market liquidity shortages(via less liquid funds available for lending) and increased lending interest rates to the detriment of the very depositors and the borrowers whose interest they seek to protect.

Furthermore, the regulator will be concerned with the possible knock-on effects of bank failures; which have increased in number and severity of externalities leading to a number of these ailing institutions being bailed out. As result, there is a rationale for insisting on banks' holding enough liquidity so as limit externalities and the occurrence of a wide spread financial sector and economic crisis. Despite the appeal of this argument, the appropriateness of liquidity hoarding as the optimal tool in addressing systemic risk is still questionable (Tirole, 2011). No matter how compelling this argument, maturity transformation remains the key role of a bank (Tirole, 2011). The issue at stake is whether banks can transform the maturity of funds successfully using generic corporate finance tools or whether specific bank regulation should be put in place to ensure compliance. To this question literature does not provide any clear cut answers.

73.2.3 Uncertainties in liquidity management

Furthermore, a regulator which regulates flows of liquidity within the banking sector will encounter a number of exertions because setting the appropriate liquidity levels for the purpose of determining the liquidity buffer is challenging for two reasons (Kovalik, 2013). First, there is a challenge because regulators can never be certain about liquidity needs of individual institutions (Kovalik, 2013). The regulators' mission is convoluted further because banks and their counterparties may adjust their activities after liquidity regulations are enforced (Kovalik, 2013). The general

banker's tactic is to try to game the system until new regulations are put in place in a sort of dialectic dance between banker and regulator.

Second, an individual institutions needs for liquidity will depends on the institutions' characteristics. Things like individual risk profile, liability and capital structure, balance sheet size, scale of operations, political environment, stage of development and economic cycle as well the institutions business activities play a part (Kovalik, 2013). All these problems make it difficult for regulators to choose the nature of regulation that can be attached to each institution and to choose assets to regulate (Kovalik, 2013).

When opting for assets to be included in the liquidity buffers, regulators must, therefore, hit a balance between a broad and a narrow definition of assets (Kovalik, 2013). If the definition is exceedingly broad, a fraction of the liquidity buffer may not be liquid when needed. A point in question would be the securitisation backed mortgages that were originated in the US in the years leading up to the 2007 financial crisis. These assets were considered liquid but failed to provide comfort when called upon during the sustained liquidity strain in 2007-2008. (Kovalik, 2013). Conversely, if the definition of qualifying assets is excessively narrow, banking organisations may face a limited supply of those liquid assets, resulting in several un-premeditated effects (Kovalik, 2013).

Moreover, a narrow definition of qualifying assets will increase concentration risk as institution set themselves up to meet the liquidity requirements. This may increase systemic risk in the market as the failure of one qualifying asset class can create significant turmoil in the market. This is similar to what is highlighted by Stiglitz (2011) in that capital and liquidity regulations focus on measuring risk at an asset and firm level and do not measure risk at a market level and, therefore, fail to account for such risk. Moreover, a narrow definition that leads to increased demand from institutions for qualifying assets, given the supply of such assets would be limited, the price of such assets will increase and fewer institutions will be able to meet the liquidity requirements at these increased prices (Kovalik, 2013). Since liquidity regulation is a new concept, both the rationale for a narrow or broad definition has not been adequately tested.

This paper will support the view that methods of corporate finance like finance as you go and liquidity hoarding should be implemented by the national regulator in order to manage liquidity. This view is enhanced by the fact that in order to be successful all liquidity must be held nationally. There is no point of holding liquidity in foreign country and there is even less rationale for holding liquidity in foreign currency. Liquidity regulation should, therefore, be at the behest of the host regulator.

This paper advances that, the Net Stable Funding Ratio and the Liquidity Coverage Ratio advanced by the Basel III Accord provide suitable guidelines on how a national regulator may choose to regulate liquidity.

7.3.3 Capital

The conventional defence for capital regulation in the banking environment is the stability of the banking system and the reduction of bank moral hazard (Flannery, 1998). This justification is based on the premise that banks seek to optimise returns from leverage by lowering capital reserves (banks lend out against capital which would ordinarily be used for capital reserves). Authors who view banks as seeking to over leverage their balance sheets argue that risk can be reduced if banks lend out against equity (Allen, Elena, & Marquez, 2011). According to these authors, banks are expected to hold more equity capital as buffers.

Practically, it seems that financial institutions are habitually willing to reserve capital levels that are significantly higher than regulatory prescriptions, and that the sum of capital reserves held in the banking system seems to change independently of changes in regulations. In juxtaposing aggregate capital reserves to regulatory minimums in the USA; Allen, Elena, & Marquez (2011) find that aggregate capital levels rose considerably in the last decade, with actual capital holding being 75% more than regulatory requirements in the early 2000s.

To explain a similar build-up of capital in the USA during the 1980's, Barrios and Blanco (2003) find banks capital structures and movements thereof bear no relation to regulatory actions during that time. They argue that capital reserves between the years 1985-1991 were by and large driven by market discipline and economic forces and not by banking regulation (Allen, Elena, & Marquez, 2011).

However, Allen, Elena, & Marquez (2011) argue that capital reserve accumulation between the mid 1980's and the early 2000's may have only been cosmetic and sub optimal when viewed against the ideal of maximising social welfare. The 2007 financial crisis that occurred at the height of this capital reserve accumulation seems to support this argument. The 2007 financial crisis shows that there are many factors of determining capital levels which are socially acceptable and welfare maximising including such things as the risk of banking contagion and the prevalence of collective moral hazard, concentration risk and non existence or insufficiency of market discipline. Based on this there is, currently, no comprehensive theory that sufficiently explains optimal reserve levels that a bank must hold. It remains an open question whether banks were undercapitalized during the 2007 crisis, despite having capital levels that were significantly higher regulatory requirements (Allen, Elena, & Marquez, 2011).

The determinants of the aforementioned social welfare maximising level of capital level have to be considered in the process of trying to understand optimal bank capitalisation levels. Of these factors, the existence of market discipline¹³ is deemed as an important factor in forcing banks to adopt an optimal level of capital. In general, market discipline is stronger on the liability side for a banking institution (see, (Flannery, 1998), (Berger, Davies, & Flannery, 2000), (Allen, Elena, & Marquez, 2011)); meaning that capital regulations have been viewed in the main from a view of securing depositor confidence in banks.

7.3.3.1 Why do Banks experience Capital Crises?

The fundamental problem in understanding banking capitalisation and in implementing capital reforms is the existence of the asymmetric information problem as banks are better informed about the quality of its loan book when compared to regulators who obtains this information from banks (Mazumdar & Heaun Yoon, 1996). A number of authors have, analysed the formulation of capital guidelines which would encourage truthful and accurate loan book disclosures by banks with consensus that such regulations do not exist and are difficult to create (Mazumdar & Heaun Yoon, 1996). Authors dealing with this asymmetric information problem have come up with four main paradigms on how banks can be regulated.

First, under full information, transparency and market discipline will move banks to an optimal capital structure even if regulations are absent (Mazumdar & Heaun Yoon, 1996). This is because bank employees have inherent incentives to ensure that the bank is a going concern and will maintain an optimal capital structure without any regulatory pressure being levied upon them. Equity holders of the bank can, in this regard, install sufficient market pressure to ensure that the bank is disciplined in its approach to capital. This is because bank equity holders stand to lose more when the bank fails and, as a result, are incentivised to increase monitoring efforts (Mazumdar & Heaun Yoon, 1996). In maintaining an optimal capital structure banks will seek to balance a number of conflicting risk and incentives e.g. risk vs. return and returns vs. cost of capital this balance may be more optimal under monitoring done by equity stakeholders.

Second, in scenarios of full information, social wellbeing is increased when there no capital requirements imposed by the regulator and the banking sector adequately competitive in both the loan and liability markets (Mazumdar & Heaun Yoon, 1996). A competitive liability market will ensure that depositors withdraw funding if they feel that the bank is taking on too much risk and the bank will have to pay more for funding and may face a bank run. Since the bank does not wish to pay

¹³ Market discipline occurs when bankers are fearing a drop in the share price, bank runs and reduced amounts of people seeking to borrow money from that institution

more, they will maintain sufficient discipline. A bank that has to pay more interest in order to acquire liquidity will have to transfer it to loan market and will charge more interest on their loan book. So customers will not take out more loans at that bank.

There are a number of differing standpoints in literature when discussing the effects of capital requirements on bank loan portfolio risk and its ability to maximise social welfare (Mazumdar & Heaun Yoon, 1996). Koehn & Santomero (1980) argue that stricter capital regulations do not necessarily lower bank risk, whereas other writers back traditional approach that they do (Mazumdar & Heaun Yoon, 1996). Mazumdar & Heaun Yoon (1996) add another angle to this discourse, advancing that capital requirements are superfluous from a social welfare standpoint (Mazumdar & Heaun Yoon, 1996). Mazumdar & Heaun Yoon (1996) raise the view that regulations may be suboptimal and points out that there is a trade of between the costs and the benefit of regulating capital markets. This is also akin to the production possibility curve and making decision between the benefits and the costs of regulation at a marginal rate of substitution advanced by Allen and Giddy 1979 in relation to rregulatory competition. Considering the above, there would be no need to regulate capital markerts when full information is at hand and the banking sector is competitive.

Third, under asymmetric information, analysis of the design of capital regulations when the regulator cannot observe bank loan quality demonstrates that capital regulations and fairly-priced deposit insurance can coexist if and only if the regulator can at least observe the capital structure and the loan rate that the bank actually employs in the competitive loan market, and can prevent collusive bank-borrower relationships (Mazumdar & Heaun Yoon, 1996) and (Chan, Greenbaum, & Thakor, 1992).

However, in practice, the costs of implementing regulations required to thwart such complicity may be quite high (Mazumdar & Heaun Yoon, 1996). Thus, the design of capital regulation involves a trade-off, between the subsidisation of deposit insurance and the regulatory costs, which has not been covered in recent literature (Mazumdar & Heaun Yoon, 1996). The optimal bank regulation point is where the savings arising from not having to subsidise deposit insurance outweigh the cost of regulations (Mazumdar & Heaun Yoon, 1996).

Finally, Mazumdar & Heaun Yoon (1996) demonstrates that, even under asymmetric information, the optimal capital requirement that should be enforced is the laissez-faire one (Mazumdar & Heaun Yoon, 1996). Regulations may never be optimal if the regulator relies on the regulated banks to gather the information necessary to regulate them.

Morden welfare economics have done well to inform the public that resource re-allocation of cannot occur without making someone worse-off; it has done much to inform us that free markets yield the most efficient outcomes. But despite this, many authors still point out, successfully so, that regulations are not always created with the objective of attaining efficient markets. Regulations are generally imposed to achieve welfare goals and to create room to supply and or monitor public goods whilst reducing market externalities.

The locus of regulation discussed in the above section present clear scenarios on why macro and micro-prudential regulations should be controlled by the host country. Sighting reasons such as economic growth, social welfare agendas as key outcomes of banking regulations. Since these outcomes have national consequences, it is rational that banking regulations should be regulated nationally. In addition to national regulation, contemporary banking issues do present a case for international regulation.

However, such rationale as presented requires regulations to be light touch rather than comprehensive as the Basel III Accord. This is because there are a number of viable alternatives towards the regulation of systemic risk, liquidity and capital that may work in different scenarios. Therefore, international regulation must be light touch to allow the host country to explore within these alternatives in order to find some sort of regulatory equilibrium that is most suitable for the country specific context. Seeing that the Basel III Accord is as comprehensive as it is, a question arises on whether it is relevant in the current international banking context. And, in reference to this paper, whether it is relevant in South Africa.

8. Research Methodology

This research paper employed a qualitative research method to assess banker's opinions on the Basel III Accord. The quantitative approach was utilised in order to quantify the extent to which bankers believe that the Basel III is relevant within the South African banking system.

The rationale of the questionnaire was to try and prove/disprove the null Hypothesis at 95% confidence interval that the sample responses will lie within 0.9 of the population mean. The hypothesis to be tested for the purposes of this paper will be as follows:

H1: The Basel III Accord is irrelevant in the South African Banking environment.

8.1. Research Instrument

A survey questionnaire was designed. The following scales were used to measure banker’s attitudes and opinions about the latest publication of the Basel Accord and whether they believe that it is relevant in improving resilience within the South African banking environment.

Strongly				Strongly
Disagree	Disagree	Neutral	Agree	Agree
1	2	3	4	5

The questionnaire provided respondents with a statement, to which the respondents replied with one of the five allowable response categories. After all respondents had provided their answers within the allowable time frame, the responses were calculated and a report with an average for each response has been provided. The responses were the calculated with the average response for the whole group, which might be between 0 and 5 based on a 5-point scale. Responses between 0 and 2.5 have been taken as disagreeing with the statement made and responses between 2.5 and 3.5 have been taken as neutral and responses between 3.5 and 5 have been taken as agreeing.

8.2. Instrument Validity and Reliability

The survey questionnaire is chosen for reliability of the data outputs and for the fact that most respondents are familiar with it as a research technique. Furthermore, it will be easy to score responses on a five point rector scale. This has allowed allow for easier tabulation making the research outcome more reliable. The quantitative approach will improve the validity of the research instrument.

8.3. Population

The research targeted bank employees who manage the banks’ capital and liquidity and are involved in the management of the banks’ balance sheet.

8.4. Sample

The research instrument was handed to employees who are currently employed at Nedbank and Standard Bank which are two of the four largest and most reputable of the South African banks. These employees were chosen because of their direct involvement in the strategic management of capital and liquidity in their roles in the balance sheet management division. The combined population within Nedbank and standard bank consist of approximately 150 employees. For the purpose of this research paper, the questionnaire will be sent to 89 employees who work in the balance sheet management divisions of the two banks respectively.

The sample is representative as most of South Africa's big four banks follow similar balance sheet management principles as they operate under a the same regulatory environment.

8.5. Research Process

Responses were collected via a research questionnaire. This questionnaire was administered via Survey Monkey (an online research tool) and was sent directly to the respondents work email addresses. The respondent were given a period of three weeks to respond to the research questions with weekly follow ups. The follow ups were sent to respondents advising them to complete the questionnaire and ignore the follow up if the questionnaire had already been complete. This was because the researcher had no access of the names that had already completed the questionnaire and therefore could not send out personalised follow ups.

The initial research consisted of 74 employees from Nedbank and Standard bank only 5 initial responses were received from this list after the first week. The questionnaire was then forwarded to an additional 15 Standard bank employees who were working at the bank's treasury department at the time. Follow ups were then sent to this initial list until a total of 17 responses were received. These responses were then analysed via the online research tool for statistical significance.

9. Research Findings and Analysis

The Basel III represents one of the most important pieces of international banking regulation and is said to shape the way in which all signatory nations run their banking systems. Crucial to this is that this set of regulation has to set the ground for improved international and local banking resilience. However, this piece of regulation has been met with some controversies which have prompted this research paper to do a study on whether South African bankers believe it is relevant within the South African Banking environment.

This section will present the results and the analysis of the study of the beliefs of South African bankers about the rationale for implementing Basel III within the South African Banking System, the cost of implementing the Basel III Accord as well as the ease at which the South African Banking environment will be able to implement these regulations. Each one of the study will be followed by an analysis of relevant literature in order to pinpoint the rationale for the bankers' beliefs and the outcome of this research paper.

9.1. Rationale for implementing Basel III within the South African Banking System

Table 2: The Strength of the South African Reserve Bank

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Standard Deviation	Responses	Weighted Average
South African regulations implemented locally work well to improve resilience	0	1	0	14	2	5.35	17	4/5
	0%	-5.88%	0%	-82.35%	-11.76%			
The South African Banks were well capitalised to survive the 2007 Financial crisis	0	0	2	13	2	4.88	17	4/5
	0%	0%	-11.76%	-76.47%	-11.76%			
The South African Environment is currently well capitalised to survive a potential crisis even without having to implement the Basel III Accord	0	4	4	9	0	3.32	17	3.29 / 5
	0%	-23.53%	-23.53%	-52.94%	0%			
The South African banking environment has sufficient liquidity to survive to withstand a financial crisis without having to implement the Basel III Accord	1	5	5	6	0	2.42	17	2.94 / 5
	-5.88%	-29.41%	-29.41%	-35.29%	0%			
The Reserve Bank has sufficient power to regulate SA Banks independently	0	1	1	12	3	4.41	17	4/5
	0%	-5.88%	-5.88%	-70.59%	-17.65%			
The Reserve Bank has sufficient knowledge and authority to regulate SA Banks prudently	0	1	2	14	0	5.35	17	3.76 / 5
	0%	-5.88%	-11.76%	-82.35%	0%			
Weighted average								3.65 / 5

On the question of whether the South African regulations implemented locally work well to improve resilience, we found the mean result at 4 indicating that South African bankers believe that South African regulations do improve the resilience of the South African banking sector and also proving that the regulations implemented locally are contextually correct.

Furthermore South African bankers are agreeable that South Africa was well capitalised to survive the 2007 financial crisis. The test results were 4 out of 5. Showing that indeed there was no significant risk posed to South Africa during the 2007 financial crisis and that the banking environment remained resilient; thus alluding to something specific to South Africa worked well to insulate the country against significant risk posed by securitisation.

The score achieved in testing whether there was sufficient capital and liquidity in the South African banking environment to survive another potential crises received scores of 3.28 and 2.94 respectively; thus showing that bankers have not formulated a strong opinion about whether the

current capital structure being maintained within the South African banking environment is sufficient to survive a potential crises. It is important to note that a specific crisis was not tabled and that a strong opinion may have been difficult to formulate without an existence of a particular crisis.

9.1.1. Section analysis

The question on whether the South African Reserve Bank (SARB) is able to regulate prudently was met with affirmation from the bankers showing that the SARB carries sufficient clout to regulate and administrate negative re-enforcements on banks that fail to meet the regulatory requirements. These responses suggest that the SARB is a strong national regulator. Furthermore bankers also responded positively to the question of whether they believe the SARB has sufficient knowledge to regulate South African banks prudently pointing to the fact that the regulator understands the context of South African Banking and is able to exercise the correct regulatory levers to ensure that South African banks conduct their banking in a prudent manner.

Based on this, we can surmise that bankers believe that the Reserve bank is able to judge the market correctly to limit systemic risk. This risk usually emanates from reduced market capitalisation and liquidity positions brought about through sustained periods of reckless or negligent lending, provisioning and risk hedging. The National Credit Act of 2004 and the recent amendments to the act assist in managing reckless lending within the South African Banking environment and have acted to curtail reckless lending, improve loan documentation, reduce leverage and consequently over indebtedness. The liquidity of the country's banks was also sound following the subprime crisis; South African banks did not suffer liquidity shortfalls (Mkhabela, 2008; Stovin-Bradford, 2008).

As a result of regulations implemented locally and in contrast to the countries that originated the financial crisis, were sound and responsive to the South African context. South African Banks were well capitalised and survived the financial crisis relatively unscathed. With the only loses being those emanating from the contagion effect from other jurisdictions. However, these losses were not significant because South African banks have, in the past, had limited exposure to international banks (The South African Reserve Bank: Bank Supervision Department, 2007).

The salient view from the bankers and supporting literature is that South African Banks were able to maintain optimal lending through the crisis. Optimal banking lending occurs when the bank is able to continue lending as per normal course of business¹⁴. This implies that South African banks were

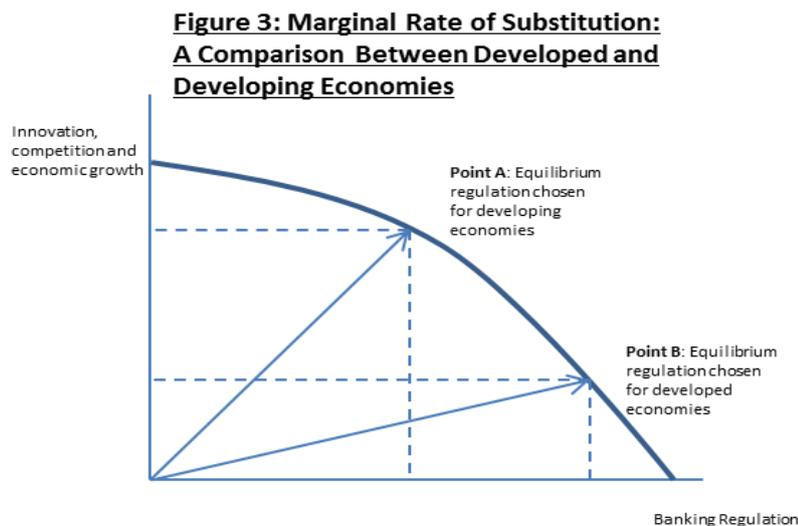
¹⁴ The optimal model displays that a bank facing capital constraints is less likely to be able to fulfil its function of providing credit in the market and that such a bank may pose the risk to the banking system by transmitting

managed well and they did not transmit systemic risk to other banks. Trading optimally during a financial crisis also means that South African banks were secured against the events that led to the crisis.

9.1.1.1 Regulatory Equilibrium in SA

An independent study commissioned by the South African Reserve Bank had found that South African banks had little exposure to securitisation barring one bank which had exposure through a London based subsidiary. This has been attributed to strong banking regulations as well as strict exchange controls (Duncan, 2008). The study found that the risks associated with securitisation of assets were correctly managed in South Africa and that South African banks originated only 4 per cent of their aggregate funding from securitisation, which was considerably lower than those international banks that struggled during the financial crisis. Thus, the regulatory compliance in South African Institutions was generally acceptable (The South African Reserve Bank: Bank Supervision Department, 2008).

The reduced prevalence of securitisation within the South African market seems to support Stiglitz's view that developing countries whose banking is not complex suffer from a problem of over regulation. To use figure 3 as way of analysis, it would seem as if the complexity and risks prevalent within the South African banking system will make a strong case for equilibrium regulation to be managed at point A. However, the existence and enforcement of international regulation requires equilibrium at point B.



the risk potential in new credit to banks that do not have the capability to service the market/niche that that bank serves.

Despite this, the Reserve Bank has always maintained a capital adequacy rule that banks are expected to hold about 9% of equity capital against risk weighted average assets. This has been increased to 12.5% post the crisis and the total tier 1 capital within the South African banking environment at the end of 2014 was 14.87 (Marcus, 2014). The bank has, thus, maintained a significantly higher level of capital against all risk weighted assets than what Basel stipulates¹⁵. At this point the paper is unable to assess whether there are other South African specific risk that the SARB wished to reduce by an over burdensome capital requirement or if the SARB is being overly restrictive.

9.1.1.2 Regulatory Oversight in SA

The Reserve Bank also maintains a maximum leverage ratio which banks are expected to hold. These leverage parameters are constructed in such a manner that they keep within international standards whilst catering South Africa specific risk (again affirming the bankers view that regulations implemented locally work well to improve resilience). Moreover they manage the banks non-performing loan book ratio which stipulates the maximum that banks are expected to hold at non-performing. This ratio will in general be a good signal for the banks health (Marcus, 2014). A bank that fails to operate within the parameters of this ratio would warrant closer regulatory involvement¹⁶. This is facilitated by the close relationship that the bank maintains with various banking CEO's. These relationships assist the Reserve Bank to work pro-actively with the non-compliant banks and then use the data they gather from those banks to identify key banking trends to foresee and implement pro-active measures to improve the soundness of all South African Banks.

In contrast, Basel regulations have proven to be re-active in the manner in which banks are regulated. They have struggled to keep pace in order to avoid the Asian financial crisis in the 90's as well as the securitization crisis of 2007. It appears that, attempts by regulators to restrain bankers are a losing battle. International bankers will innovate around banking regulations and regulators generally lag behind the in the dialectic dance between international bankers and regulators (Goodhart, 2010). Furthermore, the consultations necessary to draw up and implement international regulations are long and winded; hence the growth in the argument that allowing local regulators to regulate their own banks may be a better tool to achieve resilience within the financial sector.

Most notably, within the South African Banking environment is that all banking CEO and CFO appointments have to be vetted by the central bank. The central bank also has the ability to recall a sitting CEO and CFO should they find that such an individual has acted in a risky and/or unethical

¹⁵ Basel requires only 6% equity capital per risk weighted average assets

¹⁶ In this case, the reserve bank is seen to be following the collective cognition paradigm.

manner. This gives the SARB extraordinary power to carry out their duties (Marcus, 2014). This acts to curtail the moral hazard associated with CEO's taking on risky behaviors to increase profits. Collective Moral Hazard is also curtailed by the nonexistence of bank bailouts and deposit insurance¹⁷.

As we have seen, the SARB maintains a range of formal and informal relations with the various banking CEO's. This is in line with the various functions that the reserve bank performs in ensuring that banking operation is sound. In this regard they perform a range of functions from ensuring capital adequacy; liquidity coverage as well as overall banking leverage and are the main custodian of international financial regulations like the Basel III in South Africa (Marcus, 2014).

9.1.1.3 SA Specific Trends that Need Host Country Intervention

But despite all the work that has gone in to ensure the soundness of South African Banks, there is a view that the countercyclical buffer measure has yet to be considered by the SARB, including, ratios or metrics that reflect local economic conditions accurately, or at least more accurately than the credit/GDP metric currently used. According to van Vuuren (2012) lagging and leading indicator times must also be addressed, as must the frequent revision to the relevant metric inputs before the metric acquires widespread acceptance (van Vuuren, 2012). Table 2 shows the impact of various leading indicators that the reserve bank may look at in order to review growth in credit extension with some indicators showing false signals.

Table 3: Leading indicators in various economic distress periods

Indicator	Distress Period (1985-1987)	Distress Period (1997-1999)	Distress Period (2008-2010)	False Signals Present
Credit-to GDP Gap (analysed by SARB)	Weak	Weak	Medium	Yes
Growth in Private Sector Credit (Analysed by SARB)	Weak	None	Medium	Yes
Advances in Domestic Sector	No Data	Medium	Strong	No
Number of New Passenger Vehicles sold	Strong	Medium	Strong	No
Absa House Price Index	Strong	None	Strong	No
Building Plans Passed	No Data	Medium	Strong	No

(Burra, de Jongh, Raubenheimer, van Vuuren, & Wiid, 2015, p. 124)

¹⁷ Recently Sambou Bank was allowed to fail and was not bailed out and African Bank has been placed under administration instead of being bailed out.

Another risk that needs to be addressed in South Africa is the risk of consumer over indebtedness¹⁸. The SARB could extend its focus from bank stability to South African household sector leverage, as proposed by van Vuuren (2012). This is crucial in managing the South African specific risks. The South African household leverage is high and would pose a fundamental risk to the economy if interest rates were suddenly raised to rein in inflation (Burra, de Jongh, Raubenheimer, van Vuuren, & Wiid, 2015). The current cycle of high inflation and consequent actions by the SARB to raise interest rates is likely to increase the risk of over indebtedness and bad debts despite the prudential nature of South African lenders.

Another risk specific to South Africa and other similar economies is one posed by external rating agencies. The current structure of rating agencies based in the developed world that have an incentive as shown in Stiglitz (2009) not to downgrade countries and banks in the developed world will pose another threat to South Africa. It seems to be the case that such rating agencies may not adequately understand the market workings of developing economies and conversely the banks within those economies. As a result, these agencies are quick to downgrade government and banks in these economies at the slight threat of risk. This increases risk in developing economies.

Testimony to this, is the downgrading of ABSA (a leading South African Bank) by the rating agencies after it was announced (not effected) that Barclays banks will be leaving the Africa operation. It would have been a more prudent stance to put the ratings on review. Most important to note is that ratings agencies did not downgrade Barclays after it had announced that it would withdraw from Africa due to reduced capabilities to keep up with capital requirements within the African banking operation. This should in normal circumstances prompt the regulator to place the bank under review in other jurisdictions in order to track similar issues there.

Such arbitrage in banking regulations will place banks that operate in developing economies under significant difficulties when they need to raise capital and market liquidity. It will make credit more expensive in developing economies and, in so doing, reduce the economic growth potential in these economies. As such the rating agency arbitrage re-enforces the unfair advantage already gained by the international banking corporations using the A-IRB capital measurement model.

¹⁸ This has in part been addressed by the NCA and the NCAA. There is a view that levels of debt are decreasing but not to the optimal levels to which they need to decrease to

9.2. The Ease at which Basel III can be implemented

Table 4: The Ease of Implementing Basel III Regulation

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Standard Deviation	Responses	Weighted Average
Implementing the Capital reserves stipulated under the Basel III Accord is easily achievable	2	7	2	5	0	2.48	16	2.63 / 5
	-12.50%	-43.75%	-12.50%	-31.25%	0%			
Implementing liquidity requirements stipulated under the Basel III Accord is easily achievable	7	6	2	1	0	2.79	16	1.81 / 5
	-43.75%	-37.50%	-12.50%	-6.25%	0%			
Weighted average								2.22 / 5

The bankers believe that neither implementing the capital nor are the liquidity requirements under Basel is easy to achieve. However, these answers were neutral when one assesses the banker's views on implementing the capital requirement with the result of 2.63 being a neutral result; thus displaying that although there significant processes involved in implementing the new capital regulations, these processes are not significant.

In contrast, the implementation of the liquidity requirement will involve significant process change and will not be easy to achieve. The result of 1.81 in the question 'Implementing liquidity requirements stipulated in the Basel III Accord is easily achievable' point to the fact that bankers believe that such implementation will be difficult to achieve. As we shall see, this result is hardly surprising given that liquidity regulation is a new market phenomenon and that South Africa has a low savings culture.

9.2.1. Section Analysis

9.2.1.1. Implementing Capital Requirements

In an attempt to ensure that all banking risk exposures are backed with high quality and quantity of capital the Basel Committee of Banking Supervision has tightened the capital requirement. This has been done by impacting on three elements of the capital requirements: (1) the denominator, (2) The numerator and (3) the ratio itself. The new measure has worked to strengthen all three of these measures (Cecchetti, Domanski, & von Peter, 2011).

The numerator (the Capital) has been subject to more stringent regulatory capital adjustments and has heightened the requirements for the holding of common equity capital as part of the tier 1 capital requirement. Furthermore, the numerator (Risk Weighted Assets) has been enlarged to include items that were not previously included in an attempt to limit off the balance sheet leverage.

This has been accompanied by requirements for a more robust reporting of asset in order to avoid off the balance sheet exposures and risk (Cecchetti, Domanski, & von Peter, 2011).

The ratio/requirement itself has been increased from 2% to 4.5% common equity capital holdings for all risk weighted assets. This presents a huge increase in the capital holding, specifically when these increased requirements of capital weighted against a more robust reporting of risk weighted average assets (KPMG, 2010) (Cecchetti, Domanski, & von Peter, 2011). This move is expected to reduce the banks ROE as there will be less capital available for lending.

To resist a fall in ROE, banks can introduce various measures. These include i) increase non-interest revenues, ii) reduce operational expenditures, iii) raise interest rates on lending, iv) focus on more profitable sectors and v) reduce costs or vi) combination of multiple measures simultaneously. The more favourable method will depend on the competitive environment surrounding bank in question. If banks recoup losses by increasing efficiency and cutting operating expenses, the negative impacts from the strengthened capital requirements may be eased¹⁹. On the other hand, banks might be incentivised to take on riskier lending practices which are more profitable or to increase interest margins on all advances (Chun, Kim, & Ko, 2012). This can have debilitating impacts on economic growth as business will have to opt out of low margin commercial opportunities as a result of having to pay high interest charges for funding these opportunities.

Furthermore, capital regulations are likely to lead to the crowding out of the smaller banks which are not able to raise sufficient capital and liquidity. These banks could be either forced to sell its ownership to raise capital (with the most likely buyer being bigger and more capitally sound financial institutions) or simply close business. Either way, there will be fewer smaller banks leading to less competition and invariably less innovation and more price collusion. More so, within the South African banking environment, the main banks are continually being investigated for price collusion and where the consumers the bulk of the poor communities are unbanked due to high banking costs.

However, and as seen above SA banks are already holding 14.8% of capital against risk weighted assets and should find it easy to implement the new capital requirements and would not have to implement measures to prevent the fall in ROE's. But the neutral response received from the question seem to suggested that although banks are able to meet the capital requirements in practice; the systems and technology and added reporting required to satisfy regulators that these requirements are met are significant and not easy to implement. So the difficulty in meeting the

¹⁹ Note that cutting operating expenses via laying off workers and cutting supplies may have a ripple effect on employment which may trigger a wide variety of multiplier effects that are detrimental to the economy.

regulation is not the meeting of the regulation itself but the administrative burdens associated with implementing new regulations.

The responses point to the fact that the business obligation of implementing a new capital requirement within the Basel III Accord is significant. Typically these will involve the employment of compliance officers, changing of banking operating systems and changing the manner in which system and financial reporting is done such that they are able to report on significant aspect of the banking regulation. That in itself is not easy to achieve even when the banks are already holding sufficient capital to meet the regulations.

9.2.1.2. Implementing Liquidity Requirements

The Basel Committee for Banking Supervision (BCBS), through its Sound Practices for Managing Liquidity in Banking Operations, argued that the ability meet ongoing financial commitments, is important to the continued feasibility of any financial institution (Esterhysen, van Vuuren, & Styger, 2012). Sound liquidity administration can decrease the chances of severe funding problems (Esterhysen, van Vuuren, & Styger, 2012). Hence the proposal of the net stable funding ratio and liquidity coverage ratio (Esterhysen, van Vuuren, & Styger, 2012).

However, the introduction of short and long term liquidity ratios is likely to drive firms away from short term funding and onto longer term funding. In order for banks to source such funds they would have to offer depositors higher interest rates, thus leading to lower revenue and profits resulting from lower interest margins. This is also likely to result in higher interest rates as banks seek to shift the cost of funding onto creditors (KPMG, 2011). Stronger banks with a more established wholesale clientele will find it easier to meet this requirement as compared to smaller banks that generally have a low deposit base (KPMG, 2011). These smaller banks will have to find other sources of funding. Typically by issuing bonds on the open market²⁰.

Moreover, it is seemingly irrational to regulate liquidity at an international level. The main reason is that liquidity is by nature more local than capital. Liquid assets need to be held locally to ensure that they are immediately available (Cecchetti, Domanski, & von Peter, 2011). In this light, liquidity supervision should be a host country responsibility (BCBS, 2008). As a result, numerous regulators are pushing for local implementation of liquidity requirements. A local (or even entity-level) implementation would move the regulatory focus on host jurisdictions.

²⁰ These banks have to source market liquidity in order to be able to meet the liquidity requirements of the Basel III Accord.

From a South African perspective, it will be difficult to implement. It has long been understood the South African banks operate under a liquidity shortfall and use wholesale and retail funding to cover long term assets such as retail bonds; this as a result of the low South Africa's low savings culture. Thus South African banks do not have the added advantage offered by the hoarding of funding liquidity. Although it may be noted that South African banks hold large amounts of equity capital which may also be used as liquidity buffers.

Be that as it may, the low savings will have to be changed for South African banks to be able to meet the LCR as well as the NSF. Banking COE's have reiterated that significant operational changes will be required to implement the liquidity requirements and that profitability in the banking sector would plummet should the banks implement the new liquidity rules without a significant reform in the South African Market (Naidoo, 2012).

This iteration by banking COE's is in line with this papers research result showing that implementing Basel III liquidity requirements in South Africa will be difficult. This will reduce banks ROE and force banks to search for alternative methods to restore ROE with the most likely avenue being the increase in the interest rates spread which is expected to reduce economic growth.

9.3. The Cost of implementing the Basel III Accord

Table 5: The Cost of Implementing Basel III Regulation

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree	Standard Deviation	Responses	Weighted Average
Operating the capital requirements in the Basel III Accord will increase operating costs	0	0	3	9	4	3.31	16	4.06 / 5
	0%	0%	-18.75%	-56.25%	-25%			
Holding the level of capital stipulated in The Basel III Accord will result in less funds available for lending	0	3	2	8	2	2.68	15	3.6 / 5
	0%	-20%	-13.33%	-53.33%	-13.33%			
Operating the liquidity requirement contained in the Basel III Accord will increase operating costs	0	1	2	8	5	2.93	16	4.06 / 5
	0%	-6.25%	-12.50%	-50%	-31.25%			
Operating the level of liquidity stipulated in the Basel III Accord is likely to reduce banking sector profitability	0	1	1	9	5	3.37	16	4.13 / 5
	0%	-6.25%	-6.25%	-56.25%	-31.25%			
Weighted average								3.96 / 5

From the above table it is clear that: operating capital and liquidity requirements will increase operating costs and result in less funds being available for lending. The Basel III capital requirement and will reduce banking sector profitability. Whilst banker opinions on liquidity is hardly surprising;

the result of the capital requirements being costly to implement comes as a surprise given the South Africa's already overcapitalised banking system. This alludes to the fact that regulations are costly to implement even if the country may already be geared to achieve this regulation.

9.3.1. Section analysis

9.3.1.1 Capital cost

The result given by bankers makes it is clear to deduct that bankers believe that the kind of equity capital necessary to keep the reserve has a high cost. Stiglitz 2001 acknowledges this cost and its implications on the banking and economic sector as a whole:

'An overregulated financial system stifles innovation and the flow of credit to new entrepreneur, stunting the growth of even well-established firms. One of the many adverse effects of the East Asian financial crisis is that countries have become wary of reforms that affect the financial sector, aware that they may leave the country worse off.' (Stiglitz, 2011 pp2)

In South Africa, the cost of implementing regulations is evident in a number of ways. First South African banks bear the cost of these regulations and then pass them on to the banking customers. Second banking comes at a premium with customers having to pay more and Third, South African banking then becomes exclusionary as it becomes inaccessible to the vast majority of poor South African citizens.

More importantly in the context of the Basel regulation in the international financial system is the understanding that the cost of capital is the same across all its jurisdictions when this is in fact not the case. Cost of capital and equity is closely linked to investment grading of a particular country. These investment grading is determined by rating companies of which Fitch and Moody's are the most popular. Countries that are rated low investment grade by Moody's and Fitch find it difficult to borrow capital and to incentivise depositors to keep funds in the bank for longer. They will typically operate in a low capital and low deposit environments (Jacobs & van Vuuren, 2013).

As market economics will have us know, market price is set by demand and supply. Therefore markets with low liquidity and capital supply will have to pay more to acquire these assets. Therefore banks (and by implication the economies under which they operate) who implement these requirements in such environment will be significantly worse off, less credit will be available for lending the customers of these banks will have to pay more for credit and most significantly, economic growth will suffer.

9.3.1.2. Liquidity Costs

It is expected that, should the funding markets remain unchanged, South African banks will have to fund liquidity at their own cost which is estimated at least R1 billion a year. This will imply lower credit extension, reduced dividend payments and limited shareholder value because of lower balance sheet growth in all South African banks but more specifically within the smaller banks (Steyn, 2011). In time this will start a spiral of poor economic growth.

The high cost associated with liquidity compliance points to the low liquidity environment within South African banking. An analysis conducted by Jacobs, Styger, & van Vuuren (2012) on the DI 300 liquidity risk returns for the South African Banks found that significant liquidity risk exists with the South African bank's balance sheets. The study concluded that short-term liabilities are increasingly used to fund long-term assets, which represents significant growing liquidity risk. Despite this, the general perception held by South African bankers is that liquidity risk is not a significant threat. This is because banks have contingency funding plans in place (this alternative funding differs from bank to bank but is most commonly held in equity reserves) (Jacobs, Styger, & van Vuuren, 2012).

The study concluded thus:

'The results of this study indicate that capital would not be an effective mitigant for liquidity risk for several reasons. Liquidity risk differs from bank to bank and a general capital charge for all banks may not be feasible. Instead, liquidity risk should be analysed on a bank-by-bank basis. Capital could thus be charged for liquidity risk under Pillar 2(b) of Basel II. By requiring banks to complete a standard, exhaustive liquidity risk questionnaire and then awarding banks scores for each question based on the level of satisfaction of such answers, a possible capital charge could be derived. Capital could then be charged in a standardised manner according to banks' average scores obtained. Such a capital charge would not serve the purpose of covering losses resulting from liquidity risk, but would instead impose a penalty on banks that are deemed to manage and measure liquidity risk imprudently' (Jacobs, Styger, & van Vuuren, 2012, p. 305).

The general conclusion is that liquidity risk is prevalent within the South African banking environment. Regulators and banks alike have a lot of work to do in order to reform both the funding markets well as the manner in which liquidity is regulated within the banks. However, such regulation needs to work on a bank to bank basis with stricter review on banks that fail to manage liquidity in a prudent manner (Jacobs, Styger, & van Vuuren, 2012); thus advocating for a more local approach to regulating.

9.3.1.3. Rational for not implementing the implementing a Negotiated Basel III Accord

One of the main criticism of the Basel I, II and III Accords is that they mainly focused on the 'originate to hold model' and not the 'originate to distribute' which became part of the financial crisis. The BCBS did not learn from the failure of Basel I and II. This led to unprecedented growth in securitization and drove the 'originate to distribute model'; leading to insufficient credit checks at the origination stage, poor loan documentation given the last holder of the hot potato of loan little recourse at default stage. Increased capital and liquidity charges without a concerted effort to deal with the problems arising from the 'originate to distribute' model is likely to mask the prevalence of systemic caused by the model.

Furthermore, the Basel II Accord and even the Basel III Accord did/does not address country/market specific flaws within the US environment that led to the sub-prime debacle (poor loan documentation, loans up to 150% leverage, non-recourse bond system). Neither does it address a number of perverse incentives that were prevalent in the US in the years leading up to the crisis. Namely: Incentives to lend to the least credit worthy individual, Incentive to offer multiple bonds, Incentive to employ the originate to distribute model, incentive for rating agencies not to downgrade assets and banks, incentive to foreclose, incentive to chase market bubbles and the incentive to default.

All these problems are left at the behest of the home country regulator. As such regulators must decide on the range of regulations including but not limited to capital and liquidity regulation that can deal with host country specific problems. To do this a correct mix of regulation need to be achieved such that the trade off between regulation and banking sector innovation. Following international rules set by international regulators in this regard may lead to an incorrect mix to be chosen. This will be done to the detriment of economic growth in the country.

9.4. South African Banks

SARB adopted the Basel III framework introduced by the Basel Committee on Banking Supervision (BCBS) from 1 January 2013 and is following a phased implementation approach to the Basel III Accord. This section seeks to analyse the years (2007-2009) when Basel II was the standard for banking compliance as juxtaposed with the years (2013-2015) when banks are regulated using Basel III

9.4.1. Nedbank

Year	2007	2008	2009	2013	2014	2015
Advances	R 380 034	R 442 092	R 460 099	R 579 372	R 613 021	R 681 632
Interest Income	R 14 146	R 16 170	R 16 306	R 11 946	R 13 656	R 14 681
Net Interest Margin	3.72%	3.66%	3.54%	2.06%	2.23%	2.15%

Year	2007	2008	2009	2013	2014	2015
Coins and Central Bank Notes	R 2 439	R 2 443	R 2 597	R 5 841	R 6 943	R 7 263
Money on Call at Short Notice	R 6 318	R 3 583	R 3 334	R 14 697	R 5 865	R 14 669
Non-Mandatory Balances with Central Banks	R 1 587	R 2 583	R 1 936	R 304	R 531	R 908
Mandatory Deposits with Central Banks	R 8 363	R 10 065	R 10 508	R 13 231	R 14 911	R 16 232
Total	18707	18674	18375	34073	28250	39072

Year	2007	2008	2009	2013	2014	2015
Profit Before tax	R 8 984	R 8 872	R 6 719	R 11 973	R 13 656	R 14 681
Equity	R 35 125	R 40 073	R 44 984	R 64 336	R 70 911	R 74 751
ROA	26%	22%	15%	19%	19%	20%

At Nedbank, there has been a steady increase in funds advanced to customers from the years 2013-2015; bucking the view that the implementation of the Basel III Accord will lead to less funds being available to customers. Net interest income has reduced despite the increase in advances. This proves the hypothesis that banks will have to pay more to access capital. The increasing cost of capital has put a strain in interest margins achieved by Nedbank. Nedbank experienced net interest margins of an average on 2.15% in the period 2007- 2009 a marked reduction from an average of 3.64 between 2007-2008.

In analyzing mandatory deposits held in central banks substantial increase on an annual basis. However, this does not seem to have impacted Nedbank's operating environment as the bank has always maintained a prudent approach and held more than the required amount of capital at the central bank. Upon the implementation of the Basel III Accord, Nedbank simply reduced non-mandatory reserves held at the central banks and used those funds to increase mandatory reserves held.

Profit has increased markedly at Nedbank in the period of the Basel III implementation, owing largely to an aggressive marketing strategy. At the same time, the bank has continued to hold onto equity reserves; a move that may have been prompted by the Basel III regulation. As a result, returns on equity have reduced slightly during the period 2013-2015.

In their 2015 financial statements notes, Nedbank has met and exceeded the capital requirements but is following a phased approach, which has been agreed with by the BCBS and the SARB, for the

implementation of the liquidity approach. It currently holds a Net Stable Funding ratio of 28.7% and a Liquidity Coverage Ratio of 88.5%. The Basel Requirement for both these ratios is currently a 100%.

9.4.2. Standard Bank

Year	2007	2008	2009	2013	2014	2015
Advances	R 935 770	R 892 086	R 825 405	R 720 095	R 800 846	R 915 207
Interest Income	R 17 134	R 21 855	R 21 500	R 22 848	R 24 725	R 26 347
Net Interest Margin	1.8%	2.4%	2.6%	3.17%	3.09%	2.879%

Year	2007	2008	2009	2013	2014	2015
Operational Cash	R 4 147	R 4 469	R 4 779	R 12 739	R 12 755	R 11 688
Mandatory Deposits with central banks	R 10 139	R 9 078	R 9 691	R 19 463	R 19 463	R 18 568
Total	R 14 286	R 13 547	R 14 470	R 32 202	R 32 218	R 30 256

Year	2007	2008	2009	2013	2014	2015
Profit	R 10 772	R 10 772	R 10 324	R 10 516	R 11 677	R 12 497
Equity	R 33 066	R 39 074	R 44 159	R 79 204	R 82 412	R 90 714
ROA	33%	28%	23%	13.3%	14.2%	13.8%

Standard bank had substantially pulled back on advances in the periods post the Basel III Implementation. However, they have responded by increasing their interest spread and charging more interest to the consumer which is evident in the increase on the net interest margin. This proves the claim that increases in liquidity requirements will make acquiring loan funds more expensive and the bank will respond by cutting down advances and increasing interest margins, making it more difficult for the average borrower to obtain loan funds

Standard bank has also increased their mandatory reserves held at the central bank markedly in the period after the implementation of the Basel III Accord albeit against lower amounts of advances during this time frame. Profits have remained flat for Standard Bank whilst returns on equity has drop markedly which also proves the argument that as banks hold more equity to back lending, there will be less funds available to lend and banking profitability per shareholder rand will reduce.

Like Nedbank, Standard bank is well positioned to meet all the capital approach required by the Basel III Accord with the 2015 year end leverage ratio sitting at 5.04% (Requirement 3%) capital adequacy ratio of 15.3% (15.8 in 2014) when the requirement is 8%. Of note, however, is the total exclusion of how they are faring towards the achievement of liquidity measurements in their 2015 financial statements.

9.4.3. Barclays Africa

Year	2007	2008	2009	2013	2014	2015
Advances	R 455 958.00	R 532 144.00	R 503 630.00	R 640 418.00	R 678 098.00	R 717 704.00
Interest Income	R 18 890.00	R 21 795.00	R 21 854.00	R 32 351.00	R 35 601.00	R 38 407.00
Net Interest Margin	4.143%	4.096%	4.339%	5.052%	5.250%	5.351%

Year	2007	2008	2009	2013	2014	2015
Operational Cash	n/a	n/a	n/a	R 37 477.00	R 17 200.00	R 33 005.00
Mandatory Deposits with central banks	n/a	n/a	n/a	R 12 653.00	R 12 903.00	R 12 899.00
Total	n/a	n/a	n/a	R 50 130.00	R 30 103.00	R 45 904.00

Year	2007	2008	2009	2013	2014	2015
Profit	R 11 242.00	R 11 317.00	R 7 502.00	R 12 874.00	R 14 144.00	R 12 404.00
Equity	R 42 560.00	R 52 966.00	R 56 490.00	R 85 201.00	R 90 945.00	R 90 647.00
ROA	26%	21%	13%	15%	16%	14%

Barclays Africa (previously known as ABSA presents an interesting set of results. This is because in the period leading up to the implementation of the Basel III Accord, Barclays invested large sums of money into what was at the time known as Absa. Furthermore, this bank carries substantial amounts of cash and is amongst the most liquid of the banks surveyed.

Against the backdrop of large amounts of cash on the balance sheet and additional equity being available, Barclays has been able to obtain funding at relatively low price; thus increasing their interest margins. However, it has to be noted at this stage that of the banks surveyed, Barclays Africa were the only banks that reported the annual advances on an average basis and not an end of year balance. The figures may be misrepresented. However, based solely on the merit of Barclays Africa's financial statements only one can note an increase in the interest margin.

Cash reserves have not been adequately reported and we are unable to ascertain figures for the periods in question. It is worth noting, however, that in a trend similar to the other two banks surveyed. Equity has increased whilst returns on equity have reduced markedly in the Basel III Implementation era.

It is evident that banks were able to get high returns on equity in the era of the Basel II as they were able to invest a larger share of equity into profit making enterprises. However, Nedbank has in the Basel II era been able to increase profits; showing that although there are some difficulties, there remains room for profit growth through ingenuity and the correct application of banking principles. Despite this, the section concludes that Basel III has brought about an era of low returns on equity and higher than normal equity reserves within the South African Banking environment.

10. Research Outcome

In the questions pertaining to 'The Strength of the South African Reserve Bank' we have found that bankers believe that the Reserve Bank has sufficient authority and knowledge to regulate South African Banks prudently and independently. In the questions regarding the 'The ease of implementing Basel III regulation' we have found that bankers believe that significant operational changes are required to implement regulations and bankers believe that regulations will be implemented with difficulty. And finally in the questions regarding the cost of regulations we have found that bankers believe that implementing the Basel III regulation will involve significant costs.

Based on the fact that bankers believe that the Reserve Bank can regulate with authority and ensure prudence, the Basel III regulation will be difficult to implement and that implementing the Basel III regulations will be costly. We reject the H0 and accept that Basel III is irrelevant within the South African Banking System.

By way of analysis we found that implementing the Basel III Accord will lead to South African banks being overregulated and will increase the cost of banking whilst excluding the unbanked segment of the South African economy who would like to start banking but may not be able to do so because of the increased costs associated with banking.

11. Conclusion

Bank regulations have long been a contentious issue: such contention having increased in the wake of the 2007 financial crisis which was characterised by sub-prime, securitisation and increased use of the 'originate to distribute' model. To combat such crises the Basel Committee has implemented various regulations with the most recent being the Basel III Accord which has sparked various concerns; including whether some areas of regulations should be left to national regulators owing to different outcomes experienced by countries regulated by the Basel II Accord during the 2007 financial crisis.

The different outcomes point to the fact that there may be country specific factors leading to the ability of some countries to survive the 2007 financial crisis. Based on these outcomes it is arguable whether the Basel III Accord should be enforced in some countries, given that their own regulator has been able to enforce regulations that improve national resilience of the banking environment. Furthermore, Basel regulations have proven to be re-active in how they regulate. They have struggled to keep pace and avoid the Asian financial crisis in the 90's as well as the securitisation crisis of 2007. It appears that, attempts by regulators to restrain bankers are a losing battle. Bankers will innovate around banking regulations and regulators generally lag behind the dialectic dance

between regulator and banker (Goodhart, 2010). Furthermore, the consultation necessary to draw up and implement international regulations is long and winded. Allowing local regulators to regulate their own banks may be a better tool to achieve resilience within the financial sector.

Apart from this, implementing regulations may be costly, increase the cost of capital lead to less credit available, and reduce a country's economic growth potential and social welfare agendas. Notwithstanding this, there still exist numerous opportunities for regulatory arbitrage within the current international regulatory framework. Such arbitrage has been to the benefit of large multi-national banking corporations and to the detriment of smaller banks; leading to reduced competitiveness of smaller banks as well as reduced capital and liquidity in smaller countries which are both necessary for sustained periods of economic growth.

The paper illustrates that regulation exists as a trade-off with banking innovation, competition and economic growth. In particular the paper shows that some countries (like South Africa) do not have complex financial sectors which warrant the implementation of the far reaching Basel III Accord and advocates for a 'light touch' implementation rather than a 'to the letter' implementation of the accord.

In addition the paper has pointed out that there exist a number of economic problems that manifest themselves in certain countries and, as a result, do not fall within the domain of international banking regulation. Such problems like poor loan documentation and non-recourse bonds in US can have a detrimental impact on the banking system. These problems need to be addressed by the host country regulator. To do this the host country regulator will need to be in full control of the regulatory mix so that the total amount of regulation adequately addresses the risk in the country without undue detriment to economic growth.

Based on these problems the research has embarked on a study to review banker's opinions on the Basel III Accord within the South African Banking environment and has found that bankers believe that:

- The SARB is capable of implementing and monitoring regulations which are contextually correct and to the benefit of the resilience of the South African banking system.
- Implementing the Capital and liquidity requirements of the Basel III Accord will require significant operational change and will not be easy to achieve
- There sufficient costs associated with the implementation of the Basel III capital and liquidity requirements.

Based on the answers to these questions, this paper concludes that bankers believe that the Basel III Accord is irrelevant within the South African banking system. And that the implementation of the Basel III Accord within the already resilient South African financial environment may be tantamount to over regulation and will stifle financial sector innovation and with it South Africa's economic growth potential whilst increasing the cost of operating a bank and will, therefore, exclude market participants who cannot afford to do banking at this higher cost.

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