

## **Complexity and Its Discontents: A Primer on Basel III in Africa**

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## **ABSTRACT**

The Basel III accord is the cornerstone of global financial reform efforts that seek to guard against the types of financial crisis seen in 2007/8. It requires banks to fund more of their activities with better-quality capital and, in so doing, assures that they are better able to absorb shocks that can lead to crises. However, capital requirements come with a range of costs, which could spark a slowdown in credit or a change in the types of lending banks engage in. This paper introduces the various possible costs imposed by Basel III, with a particular focus on what the accord means for the African continent. It examines the broad macroeconomic implications of the policy, while also exploring various specific effects, including increased bank risk sensitivity, a shift to shorter-term lending, increasingly expensive trade finance and the effect on sovereign debt markets. It concludes that African banks seem well placed to adopt Basel III, and few negative side effects are expected. Nevertheless, the potential costs examined above must be carefully monitored, and the best way to facilitate this is increased inclusion of African states in Basel Committee on Banking Supervision decision-making.

## **ABOUT THE AUTHOR**

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## ABBREVIATIONS AND ACRONYMS

BIS	Bank for International Settlements
CAR	capital adequacy requirement
CDO	collateralised debt obligation
CDS	credit default swap
FDIC	Federal Deposit Insurance Corporation
FSB	Financial Stability Board
G-10	Group of Ten
G-20	Group of Twenty
GDP	gross domestic product
IIF	Institute for International Finance
IMF	International Monetary Fund
IRB	internal ratings-based
LCR	liquidity coverage ratio
MAG	Macroeconomic Assessment Group
NSFR	net stable funding ratio
OECD	Organisation for Economic Co-operation and Development
RWA	risk-weighted asset
SDR	special drawing right
SIFI	systemically important financial institution
SME	small and medium enterprise
TCE	tangible common equity
Basel I	<i>International Convergence of Capital Measurement and Capital Standards</i>
Basel II	<i>International Convergence of Capital Measurement and Capital Standards: A Revised Framework</i>
Basel III	<i>International Regulatory Framework for Banks</i>
Basel Committee	Basel Committee on Banking Supervision

## INTRODUCTION

In a sense, the 2007/8 financial crisis was a crisis of complexity. The advent of numerous complex financial instruments, such as collateralised debt obligations (CDOs), offered the promise of better risk management and higher returns. However, as the complexity grew, so the instruments became less transparent, and calculations of real economic variables such as housing prices became further divorced from the value of the investments they underpinned.

As global regulators work to safeguard against another crisis, their cornerstone financial reform effort, the *International Regulatory Framework for Banks* (Basel III) accord, is at risk of falling into a similar complexity trap. The core accord extends to 616 pages, and attempts to fundamentally change the way banks and regulators approach risk management, particularly through a more stringent system of capital adequacy requirements. Andrew Haldene, Executive Director of Financial Stability at the Bank of England, has described it as ‘the Tower of Basel’, at risk of collapsing under the weight of the changes it looks set to make.<sup>1</sup> The complexity of the document has led to its relative isolation from engagement from outside the specialist financial world it inhabits. Drafted by technocrats and debated by financiers, the accord has received little scrutiny from citizens and operators in the ‘real economy’, who were exposed in 2007 as so vulnerable to swings in the financial sector.

Basel III is therefore a prime example of international regulation in which having specialists at the table can have a disproportionate influence on the inclusivity and sustainability of the final product. This poses a problem for African states, which have little direct high-level input, with only South Africa being a member of the Group of Twenty (G-20) and representing the continent on the Basel Committee on Banking Supervision (Basel Committee). Africa’s voice being heard is particularly important, because African banks fared very differently from their European or US counterparts in the financial crisis. Banks on the continent proved more resilient during the financial crisis, arguably thanks to a complex mix of reduced exposure to toxic assets such as CDOs and credit default shocks (CDSs), the legacy of conservative structural adjustment regulation, and a range of country-specific factors. These factors mean that African states potentially require smaller and less-costly reforms to bring them up to the

standard imagined by Basel. Pressure from European or US policymakers could produce a set of regulations that are too severe and that threaten the higher-risk developmental forms of finance that can be a key driver of growth in emerging economies.

This paper attempts to offer an introduction to some of the key concepts in the Basel accord debate, with a particular focus on what the accord means for Africa. It begins with a historical overview of the previous Basel accords, before moving on to an introduction to the Basel III accord. The broad macroeconomic effects of the policy are explored, followed by a more detailed analysis of the potential effects on various financial instruments of particular importance to Africa. It concludes by arguing that, despite Africa's underrepresentation in the Basel process, the accord is fairly well suited to the continent's financial system.

## **THE HISTORY OF THE BASEL ACCORDS**

### **Capital adequacy regulation before Basel**

Banks can choose to fund their lending and investment activities in two ways. One is by using their own money, such as retained profits or the proceeds from share issues. The second is to use some form of debt, such as money from customer's deposit accounts or a loan from another bank. Capital adequacy requirements (CARs) set a minimum amount of funding for each loan that must come from the first source, namely the bank's own cash, broadly called 'equity'. Equity is loss-absorbing, meaning that if banks' investments yield negative returns, these banks have the capacity to write this off as a loss of their own money. In contrast, debt cannot absorb losses: that debt obligation must be paid regardless of whether the investment returns money or not. If someone defaults on a loan, then that obligation would have to be met with equity.

In a financial crisis, having large amounts of equity can keep banks solvent, allowing them to maintain access to the wholesale credit markets that they rely on to fund their day-to-day activities. Equity can also help prevent a failing bank from causing a wider crisis, by leaving behind capital that can be used to fulfil any outstanding obligations. However, equity funding tends to be more expensive than debt funding, since banks

have to offer investors higher returns and cannot take advantage of many tax deductions offered by debt financing.<sup>2</sup> Because of this additional cost, CARs can lead to higher interest rates for consumers or make it harder to get a loan approved by a bank, both of which impose a cost on the broader economy. Capital ratios therefore require a tradeoff: between having enough equity to prevent crises, but not so much that productive lending becomes too expensive for the rest of the economy.

While CARs are today largely synonymous with the Basel accords, their regulation predates the accords. Before the first Basel accord, capital requirements were set by national regulators, and differed substantially around the world. The post-Second World War financial market was largely confined to local areas, with banks in the US, for example, legally restricted from expanding outside their home state. With the largest banks serving a single nation, domestic policymaking posed no problem.

The increasing globalisation of financial markets confronts the domestic policymaking regime with two challenges. First, as banks began to compete across borders, differentiated regulatory environments started having competitive impacts. The clearest example of the effect of the policy environment was the rise of Japanese banks. In 1981 Japanese banks controlled 20% of total assets of the world's 20 largest banks, and had only 1 bank ranked in the world's top 10. By 1988, 9 of the top 10 largest banks were Japanese and the country controlled 70% of global big-bank assets.<sup>3</sup> While this growth was mostly driven by the booming Japanese economy, an incredibly high national savings rate and the financial asset bubble of the 1980s, banks in the US and Europe increasingly put part of the blame on the stringent regulatory environment they faced at home. Japanese banks faced very weak capital requirements, set at only 2.5% in 1988<sup>4</sup> (versus 5% to 6% in the US<sup>5</sup>), which meant that less of their capital was tied up in prudential reserves and more could be used on expansion.

The second, and arguably more important, consideration was the increasingly interconnected nature of financial markets. The predecessor to the Basel Committee, then the Committee on Regulations and Supervisory Practices, was founded in 1974 as an explicit response to the collapse of Herstatt Bank. Herstatt, a large German bank, declared bankruptcy on 26 June 1974, closing the doors on an organisation that still owed millions of dollars in outstanding foreign exchange payments to banks around the

world.<sup>6</sup> The resultant write-downs made it clear that lax risk management in one part of the world endangered the solvency of banks everywhere. International financial instability grew in the 1980s, typified by incidents such as the bailout of Continental Illinois, at the time the seventh largest in the US. After investing heavily in two bubbles: (1) oil and (2) developing world sovereign debt, the bank found itself forced to write down large losses as a result of these toxic exposures, sparking an electronic run on the bank by foreign investors in Europe and Japan.<sup>7</sup> The US Federal Deposit Insurance Corporation (FDIC) eventually bailed Continental Illinois out, dubbing it ‘too big to fail’, and completing a story that is oddly reminiscent of the recent crisis and which further highlighted the need for more extensive international co-operation on bank prudential regulation.

### **THE BANK FOR INTERNATIONAL SETTLEMENTS AND THE BASEL COMMITTEE**

Globalised competition and risk resulted in significant political pressure to set a global standard on risk management and capital adequacy, to protect domestic interests and avoid pressure on regulators to set very weak prudential standards. The forum for discussions on this standard was the Bank for International Settlements (BIS). Initially founded to facilitate German reparation payments after the First World War, the BIS has since taken on the role as a forum for collaboration and research on improving monetary policy and global financial stability. The BIS also offers financial services to central banks, playing a role that resembles that of a central bank for the world’s central banks. This is very much a secondary role for the organisation, and these services are mostly limited to providing currency accounts, foreign exchange and gold trade services, and some asset management assistance. All these activities are only available to central banks and result in the BIS having SDR 192,966 million (\$296,000 million) in liabilities in 2013.<sup>8</sup>

In 1974 a subcommittee of the BIS was formed to facilitate the development of global standards, and was later named the ‘Basel Committee on Banking Supervision’. The Basel Committee originally included central bankers and supervisors from the Group of Ten (G-10)<sup>9</sup> countries, plus Luxembourg, Spain and Switzerland. Reforms of the Basel Committee in 2009 saw a substantially expanded membership which, today, includes

the G-20 countries<sup>10</sup> plus eight others: Belgium, Hong Kong, Luxembourg, the Netherlands, Singapore, Spain, Sweden and Switzerland.<sup>11</sup> Meetings of member state central bankers and supervisors are held four times a year, with decisions made on a consensus basis. The Basel Committee has a small secretariat of permanent staff members but domestic regulators conduct the vast majority of work on the accords.

Neither the BIS nor the Basel Committee have any formal authority to set global international regulation, and the accords and declarations they propose do not have any binding legal authority on member states. They are primarily forums for co-operation between central bankers. Nevertheless, it is unlikely that any country would set a regulatory standard weaker than those determined in Basel. This compliance is largely achieved by two factors. The first is the moral authority of the Basel Committee, which is viewed as a very capable technocratic body that attempts to find the objective best practice in risk management. The body brings together the top financial regulators from around the world, and it is hard to challenge the quality of their output and policy recommendations. The second factor is market discipline. While companies usually prefer less regulation, investors are likely to be wary of a country with risk management practices below the minimum set by the Basel Committee. This is particularly so in the case of developing countries, which already have a hard time convincing investors to take on the greater risk of entering into a developing market. The global reach of the Basel accords was highlighted in a 2006 study conducted by the BIS, which indicated that 88 of 107 (82%) non-Basel Committee bank regulators,<sup>12</sup> including 16 of 22 in Africa, planned to implement Basel II.<sup>13</sup>

## **BASEL I**

Basel I<sup>14</sup> introduced the first global standard for risk-based capital requirements. The maximum requirements for banks were set at 8% of total risk-weighted assets (RWAs). Under Basel I, risk weighting was based on the type of loan in question. Broad 'risk buckets' determined, for example, that loans to the Organisation for Economic Development (OECD) governments carried a 0% risk weighting, while commercial loans to private companies or non-OECD governments carried a 100% risk weighting (with a range of categories between these two extremes). An RWA is calculated by taking a set percentage of the real value of a given asset. So, for example, a mortgage



loan of \$100 under Basel I would have a risk-weighted value of 80% and, therefore, require 8% of \$80 to be set aside in capital. Risk weighting is vitally important to the accord, as it can have as much of an impact on the value of capital put aside as the 8% rule.

The type of assets used for capital in such a system is also extremely important, as some assets might be too unreliable or too illiquid to turn into cash during times of crisis. Under Basel I, banks could only meet their capital requirements using two tiers of asset quality. The first tier, comprising 4% of total capital, included very high-quality assets such as cash and paid-up company shares. The second tier, comprising the remaining 4% of capital, included less-reliable assets such as property, hybrid capital instruments<sup>15</sup> or subordinated debt.<sup>16</sup>

Basel I was completed in 1988, and was widely and enthusiastically implemented, being picked up by over 100 countries outside the core Basel Committee members. The reach of the accord was perhaps most clearly evident in South Africa which, despite being an internationally isolated pariah state at the time, fully applied the standards, with most of the changes being formally institutionalised via the Banks Act of 1990.<sup>17</sup>

## **BASEL II**

While Basel I stands out as a startlingly efficient international reform effort, which was able to create a unique global standard that achieved international recognition and acceptance, the accord itself came under a range of criticisms, of which two were particularly important.

The first was the problematic way that Basel I assigned risk weights. The broad risk buckets employed by the accord viewed extremely different actors as equally risky. Such sweeping categories meant a well-managed developing country could never be viewed as less risky than an unstable OECD country, and a large multinational would be considered as risky as a small business. It also risked encouraging greater risk taking within risk buckets, meaning that even if more safe asset classes (eg, government bonds) were held, the most risky form of debt could be taken on in other asset classes

(eg, moving to subprime loans within the mortgage loans category). A new, more risk-sensitive standard, with updated regulation for a changing marketplace, was needed.

A second problem was the increasing possibility of regulatory arbitrage. The Basel capital ratio is calculated based on what assets and liabilities appear on a bank's balance sheet. However, banks were increasingly exposed to risks much wider than what appeared on their balance sheet, particularly through exposure to new financial innovations such as CDOs and CDSs. With normal assets subject to rules and capital ratios, banks increasingly turned to these off-balance-sheet securities as a source of high profits free of regulatory scrutiny. Basel I was ill-equipped to deal with this off-balance-sheet risk, and allowed banks to build up leverage well beyond the level anticipated by the spirit of the accord.

The Basel Committee's answer was the 2004 release of the *International Convergence of Capital Measurement and Capital Standards: A Revised Framework*, commonly known as 'Basel II'.<sup>18</sup> Basel II included various small changes, such as expanding to include new financial instruments and offering greater power to domestic regulators; but it was the two major revisions that had the most impact: (1) a revised way of calculating risk and (2) a new breakdown of the type of capital banks could hold.

The risk calculation system of Basel I was clearly problematic, had proved to be inaccurate and discriminated against certain borrowers. The solution under Basel II was to give power to those organisations best placed to calculate risk: the banks themselves. Since large banks have great expertise and capacity in building risk models, and they hold specific information about their clients' credit history, the assumption was that they had the skills and knowledge to best decide how risky a given asset would be. Under this new internal ratings-based (IRB) approach, regulators took a big step back, mainly serving to check and approve the risk models used by the banks, and to offer additional means of calculating risk for small banks, through an alternative approach known as 'the standardised approach'. For assets that banks could not calculate risk on their own, a relatively new type of institution would fill the gap: ratings agencies. The agencies took to determining the riskiness of a range of assets but, most importantly, sovereign loans and complicated financial instruments such as CDOs. The Basel II IRB

approach was therefore a market-based set of regulations, making use of the private sector's knowledge and expertise, with the state in a more disconnected, regulatory role.

The second major change was in the type of assets banks could use as their capital reserves. In recognition of new financial instruments, the expanded classification allowed lower-quality assets to be used to underwrite banks. Banks still had to hold a total of 8% of RWAs, and still had to hold 4% of RWA in very high-quality Tier 1 capital. However, they could now hold 3.5% in lower quality Tier 2 capital, and 0.5% capital in a new Tier 3, which included unsecured and subordinated debt.

In theory, the Basel II reforms were neither a strengthening nor weakening of regulatory standards. Rather, they were an adjustment aimed at making the current set of regulations more sensitive to the market in which they operated: considering all information for risk and acknowledging new financial innovations. Despite this, on balance, banks faced a reduction in the amount of capital they had to hold in protective buffers. The Basel Committee conducted various impact assessments on the new accords, examining both large and smaller banks in G-10 countries, the EU and a range of others. Of these groups, only small banks in the 'other' countries category faced increased reserve requirements. All other categories saw estimated decreases in capital requirements of between 6.8% and 21%.<sup>19</sup>

## **BASEL III**

During the booming economic conditions under which Basel II was formulated, it would have been easy to see these reductions as reflecting an overly cautious Basel I accord, which had placed unnecessarily harsh costs on banks and borrowers. In retrospect, however, given the financial crisis that loomed a few years after Basel II had been released, the weakening capital regulations look misguided.

Although the accord arguably did help lessen the extent of the crisis, by providing some protection to banks that were less exposed to toxic assets in the shadow banking system, it largely failed to stop the devastating effect of the financial crisis. The capital banks were holding in reserve should have done two things: (1) it should have prevented bank's balance sheets from becoming insolvent (and thus allow banks to keep accessing credit to meet obligations), and (2) it should have given failed banks greater capacity to pay off debts and so reduce the impact of their collapse propagating to the rest of the market. Instead, a large amount of the capital held was unusable, since during the crisis investors flocked to safe securities, away from the type of assets banks held and because the interbank market had largely frozen. When the largest banks did fail or threaten to fail, their size and importance meant reserves were not large enough to cushion the blow. These systemically important financial institution (SIFI) banks were deemed too big to fail, with the rationalisation being that it would have taken impractically large reserves to save them.

The crisis made clear the need for an improved regulatory safety net and created political conditions in which the threat of future crises was real enough that politicians were willing to impose more costly regulation on banks. As much as the failure of Basel II, which had only just been enacted in many countries, hurt the Basel Committee's reputation, the organisation was also strengthened by the rise in importance of the G-20. This group of major economies took up its self-designated role as 'the premier forum for economic cooperation' during the crisis, as nations set about trying to stop the financial collapse from spilling over to the real economy.<sup>20</sup> Central bankers played a key role in this co-operation, but already had a pre-existing forum for co-operation in the form of the Basel Committee, which took up its place working with the G-20 to tackle the crisis.

While the G-20 largely aimed to reduce the severity of the prevailing crisis, the Basel Committee aimed to put in place the type of regulation that would prevent such a crisis from recurring. While Basel III is a living document and has undergone a range of serious revisions, the original accord was launched in June 2011 under the *Basel III: A Global Regulatory Framework for More Resilient Banks and Banking Systems*.<sup>21</sup> It introduced four major changes:

1. Higher capital requirements (through the introduction of various buffers).
2. Higher-quality capital types.
3. New liquidity rules.
4. New leverage ratio.

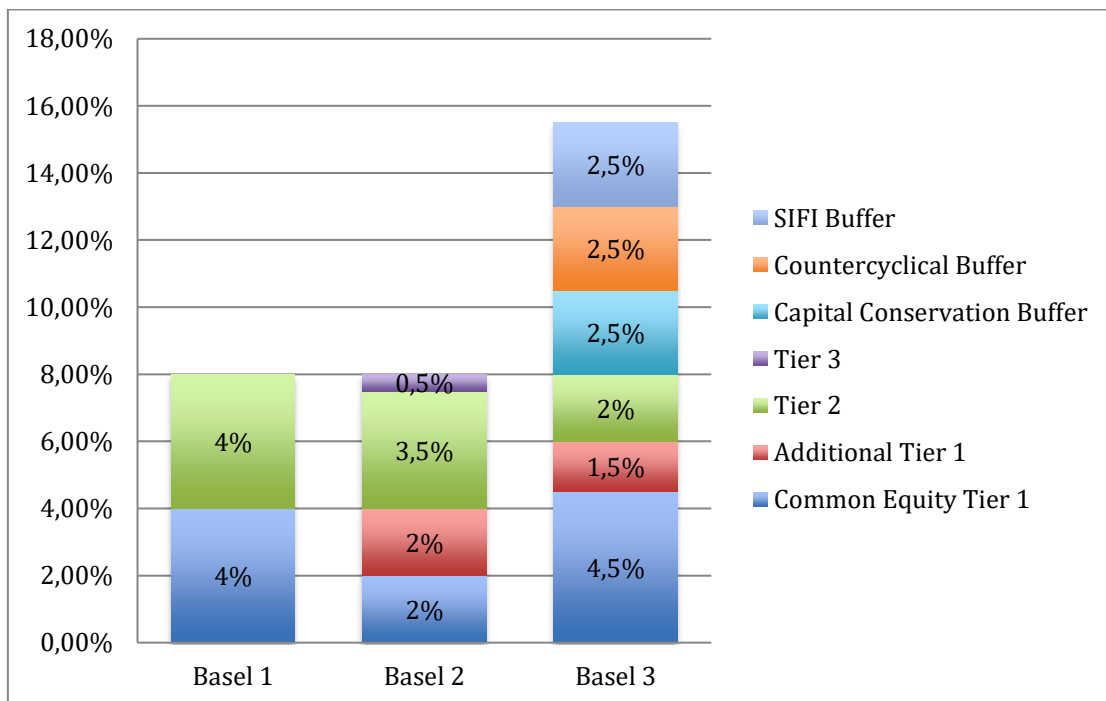
### **Higher capital requirements**

Perhaps surprising, the core amount of capital required under Basel III did not change, it remained at 8% of RWAs. This was largely because the key problem with Basel II had been that the assets banks used as capital were not of stable-enough value, since once the crisis had hit, few wanted to buy them, and that the capital requirements had not captured large off-balance-sheet exposures in the shadow banking sector. As such, there were doubts over whether the total amount of capital required needed to change.

A compromise was found with additions to the core 8% via a range of buffers, which do not apply to all banks at all times. Three buffers were introduced. The first was a capital conversion buffer of 2.5%, which would be applied to all banks at all times. It aims to offer a larger pool of high-quality capital to absorb shocks and also to deal with a paradox of capital regulation: that banks could be breaking the rules if they drew on capital during times of crisis and drop below the regulatory minimum. Being below the capital conversion buffer gets around this problem, by activating a warning period for banks within which they are restricted from paying dividends, share buybacks and bonuses. The second is a countercyclical buffer of 2.5%, which would apply to all banks, but only at certain times. A long-standing critique of the Basel accords is that they are procyclical: during good times risk is considered low and banks hold less capital, which means that when a crisis hits, they are unprepared for the high-risk, high-

loss environment into which they are heading. After the crisis, they then have to turn to rebuilding damaged capital stocks, which could lead to a slowdown in lending which worsens the crisis. The countercyclical buffer allows regulators to increase reserves by up to 2.5% in good times, to make sure banks can withstand shocks once a crisis hits. The third is a SIFI buffer, of 2.5%. This buffer only applies to extremely important banks, the so-called too big to fail banks. The huge size of these banks' assets, and the depth of the role they play across the financial system, means that higher requirements are needed to protect them from failing.

Overall, this means total capital requirements increase to a range between 10.5% and 15.5%, with the upper range applying to structurally important banks during good economic conditions. Figure 1 charts the evolution of Basel capital requirements and capital quality.



**Figure 1: Capital adequacy ratios under Basel accords, ratio of bank capital to risk-weighting assets**

Source: Accenture. *Basel III Handbook*. New York: Accenture, 2011; BCBS. *International convergence of capital measurement and capital standards*. Basel: Basle Committee on Banking Supervision, 1988.

## **Higher-quality capital types**

In an effort to avoid the type of situation in which valuable capital cannot be used because of a frozen crisis-hit market, the signature reform in Basel III is an improvement in the type of capital banks have to hold. Tier 3 capital has been completely removed, while Tier 2 capital has shrunk to a maximum of 2% of risk-weighted capital. Core Tier 1 capital now makes up 4% of RWA, with additional Tier 1 capital standing at 1.5%. All the additional buffers must be held as high-quality Tier 1 capital, making for an overwhelming increase in Tier 1 capital.

The shift in capital allocations also reflects a more focused effort to use the Basel accords to prevent banks from failing in the first place, rather than to prevent spillover from failed banks. Tier 1 capital is going-concern capital, meaning it can be used to meet current obligations; as opposed to Tier 2 capital, which is gone-concern capital, used mainly to meet obligations after banks have collapsed. The shift most likely reflects a recognition of the magnitude of the challenge posed by the failure of the likes of Bear Sterns, which demonstrated that capital reserves cannot practically be used to cover the enormous potential losses found in the collapse of SIFIs.

## **New liquidity rules**

These measures were developed in keeping with the requirement for banks to hold more useable capital. Since that is primarily about being able to turn assets into cash that can meet payment obligations, the Basel standards introduced two new liquidity requirements.

The first is the liquidity coverage ratio (LCR), aimed at providing enough short-term liquid capital to use in times of crisis. The LCR is calculated by running a simulated stress test, equivalent to a 30-day electronic run on the bank. The result of this test will show total net liquidity outflows over the period and require that enough high-quality liquid assets be held to cover all outflows.

The second is the net stable funding ratio (NSFR), which is aimed at assuring a stable source of funding for long-term exposures, those with a maturity of more than one year.

Banks need to demonstrate that they have stable sources of funding in place for a period of a year, with this process repeated for every year of the life of the asset. While this type of planning certainly seems a prudent measure, both the LCR and NSFR have been some of the more controversial aspects of Basel III, particularly in Africa, where questions have been raised about banks' capacity to gather adequate liquid assets and to manage long-term development funding, both of which will be explored later in this paper.

### **New leverage ratio**

The final measure introduced by Basel III is a leverage ratio. This ratio is positioned as a backstop measure in case the risk-weighted measures fail to provide enough funding for all the assets to which banks are exposed. The ratio is set at 3%, which means that total exposure cannot be larger than 33 times the size of Tier 1 capital. These exposures are not limited to balance-sheet liabilities, but include investments in off-balance-sheet items, such as CDSs. In theory, the leverage ratio should never be hit, particularly since it is set at such a low level relative to the other requirements. However, its introduction is in recognition of the growth of a shadow finance sector that is closely intertwined with the formal banking sector, with many complex financial instruments taking risk off the bank's books but still acting as potential sources of instability. The leverage ratio captured these hidden instruments in an effort to assure that Basel III is met with improved risk aversion and not greater regulatory arbitrage to move assets off the bank's books.

## **MACROECONOMIC IMPACT OF BASEL III**

Basel III is certainly an extremely timely and important document. The devastation brought about by the financial crisis illustrated how unprepared the financial sector was for perpetually increasing risk in finance markets. However, the increased stability potentially offered by Basel III brings with it three costs. The first is the direct cost of banks having to raise more capital for every loan they hand out, which drives up the cost of borrowing. The second cost is the potential for rationing, which occurs when banks cannot profitably raise capital for a loan and, therefore, shrink the size of their portfolio. The third and final cost is the potential for excessive risk aversion, which



could drive banks away from productive loans and to less-productive safe assets such as government securities. Gauging the cumulative macroeconomic effect of Basel III therefore requires weighing up the benefits of stability against the increased cost of raising additional capital from potentially diminishing sources.

## Benefits

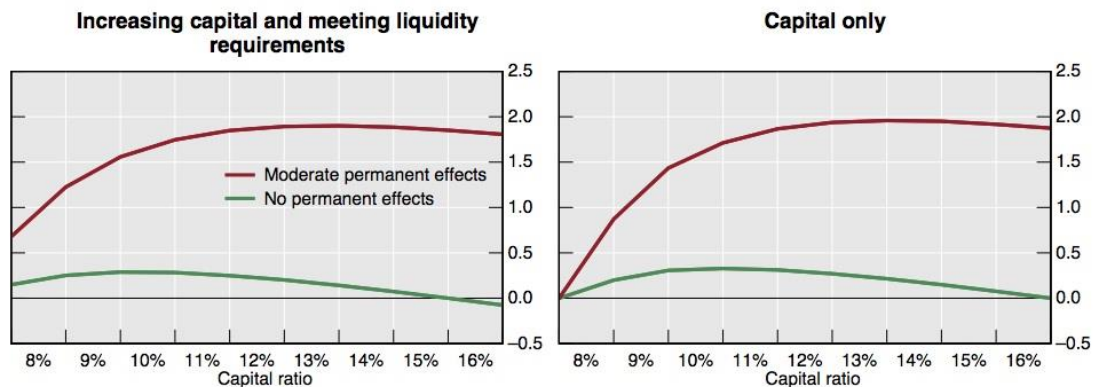
Basel III certainly looks like a big step forward in protecting the global economy from another financial meltdown. It offers larger, better-quality capital reserves than Basel II and directly responds to the major flaws unveiled by the financial crisis. Quantifying the extent to which these changes will benefit the global economy is, however, much more complicated. It relies on an assumption of just how much instability will be avoided and is, therefore, reliant at best on the modelling of hypothetical future crises.

Nevertheless, studies do look promising. A headline study conducted by the Basel Committee, Financial Stability Board (FSB) and Macroeconomic Assessment Group (MAG) estimated the reduced frequency of crisis would lead to a 2.5% increase in gross domestic product (GDP) for 15 countries<sup>22</sup> and the eurozone.<sup>23</sup> Another study conducted by the Basel Committee estimated that the net benefit of implementing higher capital ratios becomes progressively higher as the ratio increases, as demonstrated in Figure 2.<sup>24</sup>

### Summary graph

#### Long-run expected annual net economic benefits of increases in capital and liquidity

Net benefits (vertical axis) are measured by the percentage impact on the level of output



The capital ratio is defined as TCE over RWA. The origin corresponds to the pre-reform steady state, approximated by historical averages for total capital ratios (7%) and the average probability of banking crises. Net benefits are measured by the difference between expected benefits and expected costs. Expected benefits equal the reduction in the probability of crises times the corresponding output losses. The red and green lines refer to different estimates of net benefits, assuming that the effects of crises on output are permanent but moderate (which also corresponds to the median estimate across all comparable studies) or only transitory.

**Source: Basel Committee on Banking Supervision, *An Assessment of the Long-Term Economic Impact of Stronger Capital and Liquidity Requirements*. Basel: BIS, 2010.**

There remains some uncertainty over the benefits for Africa, partly because studies have focused on G-20 countries, but more because of the resilience of African markets during the financial crisis. Their performance was evidence of a wider trend across African markets, where stricter regulations and more conservative banks have meant that they were less vulnerable to specific financial crisis (even if other economic and political risks remained high). Between 1985 and 2009 a sample of 53 African countries demonstrated a probability of crisis occurring in a given year at 2.7%, relative to levels between 4.1% and 5.2% for G-20 countries over the same period.<sup>25</sup> The difference means fewer potential crises stand to be deterred by Basel III, with this reduction in benefits compounded by the relatively smaller importance of the financial sector to most African economies.

Despite this, African countries stand to benefit substantially from improved crisis resilience in the rest of the world. While African financial markets rode out the 2008 crisis well, the continent was badly affected by the ensuing slowdown in major trading partners such as Europe and the US. Since Basel III stands to shore up these more vulnerable financial markets, it insulates the continent from the type of global shocks to which many African states remain particularly vulnerable.

## **Costs**

Calculating the broad costs of Basel III is similarly complicated, with debates ongoing about whether some of the changes have costs in the first place.<sup>26</sup> While many impact studies have been conducted, the picture painted is further complicated by the fact that most have focused on G-20 or OECD countries, with relatively less work done on the potential effect on developing countries. Developing states could face lower costs when implementing Basel III, thanks to generally more conservative financial markets and the legacy of stringent International Monetary Fund (IMF) and World Bank structural reforms, but this remains uncertain.

Annexure 1 summarises a selection of quantitative impact studies. The most conservative estimate of the effect of Basel III comes from the OECD, which predicts between a 0.05% and 0.15% decrease in annual GDP.<sup>27</sup> At the other end of the spectrum, the Institute for International Finance (IIF) predicts a reduction of 3.2% in GDP and 7.5 million job losses, in a study focused on the US, Europe and Japan<sup>28</sup>. This extreme figure should perhaps be viewed with the consideration that the IIF is the lobby group for large international financial interests, and most studies seem to predict a reduction in GDP within the 0.2% and 0.35% range.

This would certainly be a substantial impact, with even small fractions of forgone GDP costing the global economy millions in value and jobs. Yet, it is much smaller than the predicted benefits. These benefits are on some level uncertain, since they rely on potential events not happening, but given the frequency of financial crises over the past 100 years, it seems fair to say that the Basel accords, on the whole, make sound macroeconomic sense.

### **SPECIFIC IMPACTS ON AFRICA**

This broad macroeconomic conclusion, however, belies potential changes in the patterns of finance. Calculations of changes in GDP assume that losses to small businesses or developing countries have an equal social cost as losses to multinational corporations or developed states. Subjective policy priorities, such as pursuing the growth of certain industries or projects related to infrastructure development, still stand to be negatively impacted by Basel III and, particularly in Africa, these changes need to be carefully observed and managed.

#### **Liquidity**

The liquidity requirements pose potentially severe challenges for Africa and South Africa, for two reasons. First, there are fewer assets available within the African financial space that are of sufficient quality to qualify as highly liquid capital. There are relatively fewer governments or corporations on the continent that could issue high-quality AAA bonds, for example, and this could require banks to compete in a scramble for what is available or to attempt to source capital from foreign markets. Either

alternative faces heavy costs, partly because of how expensive secure assets such as AAA bonds or cash are, but more because of the level of demand for such assets in the rush among banks to build up their capital supplies.

A second problem is the high liquidity of most bank liabilities. African banks tend to have shorter-term loans than many larger European banks, for example. And because of this, the stress test calculation of how much money would leave a bank over 30-days could result in a high level of predicted outflows. Initial estimates from a confidential industry study in South Africa estimated that the depth of this maturity problem and the shortfall in assets of adequate liquidity could mean that South African banks would have to raise R900 billion to be Basel III-compliant.<sup>29</sup>

Liquidity concerns were the biggest difficulty facing African banks when Basel III was first released. However, these concerns have retreated slightly, thanks to the January 2013 release of revised liquidity rules.<sup>30</sup> The revision was generally considered a loosening of the requirements, particularly by expanding the range of assets that would qualify as high-quality liquid assets. The change was warmly received by South African banks in particular, who praised the step as a response to their concerns, and sets the country on a solid footing to achieve Basel III compliance earlier than expected.<sup>31</sup>

## **Risk sensitivity**

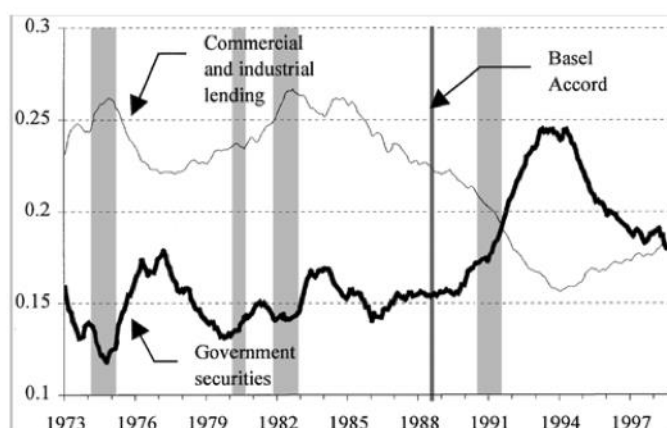
The core premise of Basel III is the reasonable assumption that assets with different levels of risk should be associated with different levels of capital. Assuring the best possible amount of capital for a given amount of risk will assure the system holds just enough money to cover possible shocks. However, the accords also work by encouraging banks to invest in less-risky assets. Because extra capital imposes costs on banks, they want to hold as little as possible. By attaching additional capital to riskier assets, banks are steered to diversify away from the riskiest asset classes.

The downside of this incentive system is that it could lead to the exclusion of risky borrowers from credit markets. These groups are often socially and economically very important and very vulnerable. The poorest groups in society or the least-developed states in the international system tend to be those who could best benefit from an extra supply of cash, but they are excluded by a system that makes lending to them disproportionately expensive. Since the risk of lending to these groups means they are already on the fringes of finance, this extra impact can be severely damaging.

The implication for Africa is that potential borrowers in poorer and less-stable states could be further deprived of access to private sector finance. There is an ongoing debate about whether the private sector has lived up to its developmental promise, with relatively weak lending in states most in need of development. This might seem counterintuitive, given the already established fact that African states tend to be less prone to financial crisis than many countries in the developed world. However, uncertainty over political risk and pervasive risk in the real economy mean that total risk still remains high. Since the biggest source of private sector finance for African states are large, internationally active banks, these banks could face Basel III buffers that offer an additional 5% high-quality capital disincentive to the already steep barriers to lending to African states. This loss might not be particularly significant, given that private funding flows are already relatively weak. However, increased risk sensitivity on a global level could see a continued flight to safety by already wary investors.

The same logic of increased risk aversion that exists on an international level can be applied to the domestic level, with local borrowers of lower-risk categories possibly

vulnerable to swings in the appetite for risk among banks. Again, at this level some risk aversion is welcome and expected, and banks that were to lend excessively to very risky parties stand to hurt themselves, the financial system and the borrower. However, excessively risk-averse banks have the potential to direct credit away from more productive commercial loans and into safer assets. The introduction of Basel I was accompanied by a credit crunch in parts of the US. While the causes of this crunch are disputed,<sup>32</sup> it was partly attributed to banks shifting their portfolio away from risky commercial and industrial loans, towards safe, zero-weighted government securities, as illustrated in Figure 3. There is some evidence that a similar shift is currently underway amongst European banks. A Fitch Ratings recent study on 16 European banks indicated a dramatic shift in counterparty exposures between 2010 and 2012, with banks taking on an additional EUR550 billion in sovereign debt, at the expense of a EUR440 billion decrease in corporate loans<sup>33</sup>.



**Figure 3: US bank portfolio adjustments in response to Basel capital adequacy requirements.**

**Source: Furfine, C. ‘Bank portfolio allocation: The impact of capital requirements, regulatory monitoring, and economic conditions’, *Journal of Financial Services Research*, 20 (1), 2001, pp. 33–56.**

Loans to certain high-risk borrowers can also offer some of the highest social and developmental returns. A key example of these borrowers are small and medium enterprises (SMEs). While a huge number of SMEs are too risky and too informal to gain access to finance, a smaller subsection does have marginal access to small business loans and could be put at risk by the Basel III reforms. SMEs that have access to finance generally draw on two types of loans. The smallest, least-formal SMEs make use of

personal loans, and while increased risk aversion could affect them, this type of retail lending is not expected to change substantially. What would be affected are more institutional forms of lending to SMEs.

These are loans either taken on by specialist small business lenders or, more often, by large banks as one portion of their loan portfolio. Formal SME loans are underdeveloped in Africa, held back by a lack of SME formality and the inherent high-risk nature of these loans. Yet these types of loans, which are generally lent to the small businesses with the greatest capacity to expand into sustainable larger enterprises, can be extremely beneficial in assisting growth and fighting problems such as unemployment. Since they tend to rely on loans from large banks, which have the greatest capacity to diversify away from risk if this was profitable, they could also stand to be negatively affected by the increased risk aversion in Basel III.

Two factors might limit the impact on SMEs. The first is just how disconnected SMEs currently are from the banking system. In South Africa, by far the most sophisticated finance market on the continent, only 8% of SME start-ups are funded by banks loans and small businesses consistently rank access to finance as a barrier to growth.<sup>34</sup> This could at least mean a weaker shock to SMEs but, if anything, only re-emphasises the need to focus on policy that brings SMEs further into the formal banking sector. The second consideration is more promising for SMEs. As will be discussed below, it is possible that Basel III will encourage a preference for shorter-term loans. Such a move could improve access for small businesses, which tend towards smaller, short-term loans.

### **Long-term development finance**

The move to shorter-term loans would, however, have serious implications for larger, long-term development funding. A shift by banks to short-term loans is possible because of the NSFR, the second liquidity measure introduced in Basel III. The NSFR dictates that for assets with maturity longer than a year, banks need to have in place reliable sources of funding for that asset over one year. At any given point in, for example, a 10-year loan, banks would have to know where funding for the loan would come from for the next year. Formally, the NSFR states that

$$\frac{\textit{Available stable funding}}{\textit{Required stable funding}} \geq 100\%$$

The NSFR is still being tested and revised, but the intuition is that it will prevent banks from entering into exposure that they are not sure they will be able to fund over the course of a year. Available stable funding will be calculated by weighting bank assets and liabilities according to how certain it is that they will be available to the bank in one year's time. These stable sources of funding encompass a range of assets and liabilities, but the distinction is clearest in the comparison between demand deposits and savings or investment accounts. Demand accounts can be withdrawn at very short notice and, hence, cannot be relied on for longer periods, while investment accounts with longer maturities are mostly certain to remain with the bank, and be available to fund long-term projects.

The NSFR is meant to fight a maturity mismatch, in which long-term assets were being funded by short-term liabilities. The concern for Africa, however, is that the need for long-term development finance is extremely large. The persistent infrastructure gap on the continent and the need for large-scale private investment to power growth and development means that long-term development finance is of paramount importance. However, banks risk being constrained in long-term funding markets by calculations of their available stable funding, a figure that could be low because of the generally weak savings levels of many countries on the continent.<sup>35</sup> This could lead to banks retreating from long-term lending markets, or it could see a spike in the cost of long-term borrowing, as banks pass on the cost of having to build their stable funding reserves.

Recent reports in South Africa speculate that the shift to short-term lending is already under way, arguing that a shift away from the mortgage market and into unsecured lending is '(t)hanks to the implementation of the Basel 3 capital accord'.<sup>36</sup> It does not seem clear that Basel is the cause of this shift, particularly since the details of the NSFR remain unclear. However, the ratio could prove one of the most significant challenges Basel III presents to the African continent, and its effect on development finance must be carefully monitored.



## **Trade finance**

While the impact on trade finance is not completely unique, it serves as a useful bellwether to demonstrate some of the potential challenges mentioned above. The combination of the direct cost of increased capital requirements and the inclusion of trade finance products from the shadow banking sector into the leverage ratio means that the cost of capital for trade finance stands to rise between 18% and 40%.<sup>37</sup> Because trade finance is generally quite short term and offers relatively narrow margins, it is being lined up as an early casualty of banks trying to manage the costs of moving to Basel III.

The concerns have sparked a concerted effort from lobby groups, notably the International Chamber of Commerce. The chamber conducted a study on 21 global banks that provide trade finance, arguing that the rate of default for trade finance was a very low 0.021% and, as such, should be exempted from some of the more arduous rules, most notably the catchall leverage ratio.<sup>38</sup> The Basel Committee has made some changes to alleviate the pressure on trade finance, reducing the short-term liquidity capital requirements on the asset. Other sources of finance, such as specialist trade finance vehicles or developing country banks, could fill the gap. However, concerns remain, and 80% of chief financial officers surveyed by a Greenwich Associates study were convinced that the cost of trade finance would increase under Basel III. This would lead to a direct cost on trading firms, but could also change the equation of firms deciding whether or not to engage in trading activities, creating a further disincentive towards trade that could lead to weakening demand for exports.<sup>39</sup>

If trade finance demonstrates the potential for serious unexpected consequence resulting from Basel III, it also highlights the Basel Committee's tendency to be responsive to concerns. In 2011 the Basel Committee released a revised framework for the treatment of trade finance under Basel III, which set out to address some of the key early concerns, such as waiving a one-year maturity floor for some trade finance instruments.<sup>40</sup> Concerns remain after the amendment, but the revisions illustrated the fluidity of the Basel III process.

## CONCLUSION

Basel III exists because the global financial crisis made it clear that the structure of international finance before the crisis was unworkable. It is meant to change the way banks approach risk and prudential safeguards against that risk. For it to be meaningful, it needs to change bank's behaviour and, in so doing, it is inevitable that there will be changes in the quantity and type of loans banks offer, with important implications for development. The broad macroeconomic cost of stricter regulation, combined with the specific effects listed above, all need to be carefully monitored and managed, particularly in Africa, where countries simply do not have the luxury of taking on a slower, risk-adverse growth path, and where banks need space to lend in ways that can grow the real economy, even at the expense of some risk to the financial system.

On balance, however, Basel III looks set to benefit Africa. By offering further safeguards to protect from banking crises at home, and to guard against contagion flowing from the rich world, the continent can avoid the instability and loss of growth that accompanies crises. While there are certain to be some costs to some agents in society, these costs can be managed. Efforts such as the slow phase-in time for the policy, which only needs to be implemented in its entirety by 2019, will help banks plan around potential costs. The already solid regulatory foundation in most African states will mean that meeting Basel III requirements might be less of a challenge than for banks operating in Europe or the US.

The key cause for concern is therefore not the accord itself, but rather Africa's role in contributing to it. CARs of the type found in Basel III always involve a tradeoff: short-term growth is sacrificed for long-term stability, beneficial lending to high-risk groups is sacrificed to protect against damaging lending to the bad bets within that high-risk group and so on. To manage this tradeoff in a way that works for all parties affected by this piece of global policymaking, there needs to be the maximum possible inclusion of all parties. While Africa and developing states have been considered by the Basel Committee, it is hard to believe the committee will ever have the capacity to forego the demands of European or US regulators in the interests of protecting Africa, so long as the continent remains underrepresented on the committee.

Three possible actions could lead to better African representation on the Basel Committee. First, the sole African voice on the committee, South Africa, must use its position to speak for the continent. While only one member of the committee, the relatively informal structure of Basel discussions means that as a member it can have greater influence than might be expected, given the economic and political might of Africa. South Africa is an example of a country that outperforms its fundamentals. The country's regulators are well liked and well respected on the Basel Committee, and the use of South African influence can place the continent firmly on the agenda. Second, following the financial crisis, the G-20 rose to prominence as the premier forum for global economic co-operation. As it did that, the Basel Committee has moved away from its more autonomous technocratic corner and into the mainstream of G-20 discussions. In so doing, the committee has become more open to influence from the G-20, and the group's developing country members. The G-20, and particularly the developing world bloc (with Brazil, Russia, India, China and South Africa at its core), should use its position to provide oversight over, and input into, the committee's policymaking. This co-operation can be driven by shared interests, particularly in areas such as promoting long-term development finance and small business growth. Finally, in the long-term, there needs to be an effort to make the Basel Committee more fundamentally inclusive. The committee does not need to be all-inclusive, since some states will see little benefits to taking part in discussions and would perhaps have limited excess capacity to do so. However, as emerging countries such as Nigeria and Kenya increasingly translate their economic development into larger financial markets, there needs to be some mechanism for the committee to respond timeously and bring these new players into their discussions. The Basel accords remain an important tool in maintaining global financial stability. However, to keep up with a fast-changing financial world, the committee needs to adapt more than its rules; it needs to change the way it is run. Bringing more African voices to the table would certainly help this process.

## Annexure 1: Comparison of Basel III quantitative impact studies

Report	Summary impact	Coverage
<b>BCBS/FSB/MAG (2010).</b> <i>Final Report. Assessing the macroeconomic impact of the transition to stronger capital and liquidity requirement.</i>	Reduction in GDP between 0.22% and 0.25% at the point of peak impact.	16 countries + Euro Area
<b>BCBS/FSB/MAG (2011).</b> <i>Assessment of the macroeconomic impact of higher loss absorbency for global systemically important banks.</i>	Reduction in GDP between 0.34% and 0.35% relative to baseline  Reduced frequency of crisis will lead to up to 2.5% increase in GDP per annum	16 countries + Euro Area
<b>BCBS (2010).</b> <i>An assessment of the long-term economic impact of stronger capital and liquidity requirements.</i>	1% increase in capital will lead to 0.09% decline in output  Meeting liquidity requirements will lead to 0.08% decline in output	Basel Committee members
<b>IIF (2011).</b> <i>The Cumulative Impact on the Global Economy of Changes in the Financial Regulatory Framework.</i>	Reduction in GDP by 3.2% over the next five years  Combined 7.5 million job losses	US, Euro Area, Japan, UK and Switzerland
<b>IMF (2011).</b> <i>Macroeconomic Costs of Higher Bank Capital and Liquidity Requirements.</i>	Cumulative reduction in GDP between 1% and 1.3% in Euro Area and slightly less in US  Liquidity requirements will lead to cumulative reduction in GDP by 0.8% in Euro Area and 1% in US	US, EU
<b>OECD (2011).</b> <i>Macroeconomic Impact of Basel III.</i>	Implementation of Basel III will lead in the medium-term to reduction in GDP between 0.05% to 0.15% per annum	United States, Euro Area, Japan

Source: Pagliari, S. What is the price of Basel III? An analysis of the impact (and the impact studies) of Basel III on the real economy', ICFR (International Centre for Financial Regulation) Discussion Paper. London: ICFR, 2011.

## ENDNOTES

<sup>1</sup> Haldane A & V Madouros, 'The dog and the frisbee', paper presented at the 36th Economic Policy Symposium of the Federal Reserve Bank of Kansas City, Jackson Hole, 31 August 2012.

<sup>2</sup> The question of whether equity really is expensive is hotly debated. Traditional economic theory argues that equity should be no more expensive than debt funding (see Modigliani, F. &

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M, Miller. 'The Cost of Capital, Corporate Finance and the Theory of Investment.' *American Economic Review*, 48, 1958, pp 261-97.), and some economists still believe this mostly holds true (eg, Admati AR, DeMarzo PM, Hellwig MF & P Pfleiderer, 'Fallacies, Irrelevant Facts, and Myths in the Discussion of Capital Regulation: Why Bank Equity is *Not* Expensive', Working Paper Graduate School of Business, California: Stanford University, 2011). The evidence in favour of expensive equity is nevertheless extensive. Many reasons are given for this unexpected cost, but the most prominent are the tax advantages of debt (as noted by Modigliani & Miller) and that inaccurate pricing of risk by most markets, which forces banks to offer increasingly high returns to investors (see, eg, Baker, M & J, Wurgler. 'Do Strict Capital Requirements Raise the Cost of Capital? Banking Regulation and the Low Risk Anomaly'. NBER Working Paper No 19018. Cambridge, Mass: National Bureau of Economic Research, 2013.). Even if equity was not truly expensive, it is a widely held belief in the financial sector that it is and, as a result, banks are likely to act as if equity is expensive, even when it is not.

<sup>3</sup> Tarullo D, *Banking on Basel: The Future of International Financial Regulation*. Washington, DC: Peterson Institute for International Economics, 2008, eBook.

<sup>4</sup> Japan capital ratio.

<sup>5</sup> Burhouse S, Feid J, French G & K Ligon, *Basel and the Evolution of Capital Regulation: Moving Forward, Looking Back*. Washington, DC: Federal Deposit Insurance Corporation (FDIC), 2003.

<sup>6</sup> Tarullo D, *op. cit.*

<sup>7</sup> FDIC (Federal Deposit Insurance Corporation), *Managing the Crisis: The FDIC and RTC Experience*. Washington, DC: FDIC, 1998, pp. 545–565.

<sup>8</sup> SDR means 'special drawing right'. BIS (Bank for International Settlements), *83rd BIS Annual Report*. Basel: BIS, <http://www.bis.org/publ/annualreport.htm>

<sup>9</sup> Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, the UK and the US.

<sup>10</sup> Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, the Republic of Korea, Mexico, Russia, Saudi Arabia, South Africa, Turkey, the UK and the US. The EU was not represented independently.

<sup>11</sup> Basel Committee (Basel Committee on Banking Supervision), *A Brief History of the Basel Committee*. Basel: BIS, 2013.

<sup>12</sup> Note that some bank regulators represented multiple countries, for example, the Central African Banking Commission and West African Economic and Monetary Union together represent 14 African states.

<sup>13</sup> Financial Stability Institute, 'Implementation of the New Capital Adequacy Framework in Non-Basel Committee Member Countries', Occasional Paper, 4. Basel: BIS, 2004.

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- <sup>14</sup> Basel Committee, *International Convergence of Capital Measurements and Capital Standards*. Basel: BIS, 1988.
- <sup>15</sup> Hybrid capital instruments are hybrid in that they contain elements of both debt and equity; for example, in the event of liquidation, holders of preferred shares must be paid out after depositors but before holders of common shares, thus placing them between debt and equity.
- <sup>16</sup> Subordinated debt is debt that only has to be repaid after all other obligations have been met, including paying out depositors.
- <sup>17</sup> Banks Act 94 of 1990. SARB (South African Reserve Bank). *Annual Report 2005: Bank Supervision Department*. Pretoria: SARB, 2005.
- <sup>18</sup> Basel Committee, *International Convergence of Capital Measurement and Capital Standards*. Basel: BIS, 2004.
- <sup>19</sup> Basel Committee, *Results of the Fifth Quantitative Impact Study*. Basel: BIS, 2006.
- <sup>20</sup> G20 (Group of Twenty). *What is the G20*. [http://www.g20.org/docs/about/about\\_G20.html](http://www.g20.org/docs/about/about_G20.html)
- <sup>21</sup> Basel Committee, *Basel III: A global Regulatory Framework for More Resilient Banks and Banking Systems*. Basel: BIS, 2010.
- <sup>22</sup> Australia, Brazil, Canada, China, France, Germany, Italy, Japan, Korea, Mexico, the Netherlands, Spain, Switzerland, the UK and the US.
- <sup>23</sup> MAG (Macroeconomic Assessment Group), *Assessment of the Macroeconomic Impact of Higher Loss Absorbency for Global Systemically Important Banks*. Basel: MAG, 2011.
- <sup>24</sup> Basel Committee, *An Assessment of the Long-Term Economic Impact of Stronger Capital and Liquidity Requirements*. Basel: BIS, 2010.
- <sup>25</sup> Caggiano G & P Calice, 'The Macroeconomic Impact of Higher Capital Ratios on African Economies', Working Paper, 139, African Development Bank Group Working Paper Series. Tunis: African Development Bank Group, 2011.
- <sup>26</sup> For the costs of capital structure, see, for example, Admati *et al.*
- <sup>27</sup> Slovik, P and B Cournède, *Macroeconomic Impact of Basel III*. Paris: Organisation for Economic Co-operation and Development (OECD), 2011.
- <sup>28</sup> IIF (Institute for International Finance). *The Cumulative Impact on the Global Economy of Changes in the Financial Regulatory Framework*. Washington, DC: IIF, 2011.
- <sup>29</sup> Kamhunga S, 'Study warns of R900bn liquidity gap at SA banks', *Business Day*, <http://www.businessday.co.za/articles/Content.aspx?id=171795>, accessed 15 May 2012.
- <sup>30</sup> Basel Committee, *Basel III: The Liquidity Coverage Ratio and Liquidity Risk Monitoring Tools*. Basel: BIS, 2013.
- <sup>31</sup> Ndzamela P, 2013. 'Basel 3 liquidity easing may cut costs for SA banks', *Business Day*, 8 January 2013, <http://www.bdlive.co.za/business/financial/2013/01/08/basel-3-liquidity-easing-may-cut-costs-for-sa-banks>, accessed 02 October 2013.

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<sup>32</sup> For an overview of possible explanations, see Berger, A. & Udell, G. 'Did risk-based capital allocate bank credit and cause a 'credit crunch' in the US?' *Journal of Money, Credit and Banking*, Vol. 26, 1994. ..

<sup>33</sup> Fitch Ratings. "Basel III: Shifting the Credit Landscape." Macro Credit Research, November 4, 2013.

<sup>34</sup> SBP. *Headline Report of SBP's SME Growth Index, Priming the Soil: Small Business in South Africa*. Johannesburg: SBP, 2011.

<sup>35</sup> Donnelly L, 'SA needs to start saving seriously', *Mail & Guardian*, 14 June 2012, <http://mg.co.za/article/2012-06-14-sa-needs-to-start-saving-seriously>, accessed 02 October 2013.

<sup>36</sup> Theobald S, 'Banks' focus on unsecured lending crimps growth of home ownership', *Business Day*, 16 September 2013, <http://www.bdlive.co.za/opinion/columnists/2013/09/16/banks-focus-on-unsecured-lending-crimps-growth-of-home-ownership>, accessed 02 October 2013.

<sup>37</sup> Tavan D, 'Basel III reshapes trade finance', *The Banker*, 1 March 2013, <http://www.thebanker.com/World/Asia-Pacific/Australia/Basel-III-resh>, accessed 29 August 2013.

<sup>38</sup> Masters B, 'Push to cut trade finance from Basel III', *Financial Times*, 16 April 2013, <http://www.ft.com/cms/s/0/5b8b9f1c-a678-11e2-885b-00144feabdc0.html#axzz2kJhvGfVI>, accessed 29 August 2013.

<sup>39</sup> Thomas R, 'The G20 Processes and Reform Agenda: What impacts on corporate and/or trade finance?' Occasional Paper, 71. Johannesburg: SAIIA (South African Institute of International Affairs), December 2010.

<sup>40</sup> Basel Committee, *Treatment of Trade Finance Under the Basel Capital Framework*. Basel: BIS, 2011.