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To What Extent were the Limitations of the Previous Basel Accords (I & II)  
overlooked by Basel III?

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*Abstract:* This research will attempt to reveal some major fault lines of the Basel III Capital Accords concerning Banking Regulation. It will consider some shortcomings of the previous rounds and scrutinise Basel III's attempts to address the same issues. I have provided some idealised recommendations from various authors based upon previous problems and attempt to analyse where Basel III falls short against these benchmarks.

*Key words:* Basel Capital Accords, Banking Regulation, Basel III

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## **To what extent have the limitations of the previous Basel Accords (I & II) been overlooked in the Current Round (III)?**

### **AIM AND JUSTIFICATION**

I shall address shortcomings and oversight of this round of banking regulation as the main objective of this research. I feel that placing emphasis on what has been overlooked is far more useful to readers than simply listing areas where due praise should be given as the former approach could promote vigilance and more importantly appropriateness in future monitoring or regulation. When the main features of the Accords (1,2) and their foremost implications (or lack thereof) for the Banking Industry are described, I shall attempt to reveal some 'fault lines'(see Rajan, 2010 in bibliography) that still persist due to the shortcomings of the current round (3). Likewise, attention shall be given where warranted on the third Accords' attempts to address the dangers that fostered the recent crisis (they shall only be mentioned in conjunction with another point or in relation to their shortfall). I have chosen a selection of renowned authors in the relevant fields (see previous research) whose publications have specifically provided insightful recommendations and warnings based on the shortcomings of the last round of Accords (II), a brief history of which shall be provided. It is against these and other standards that I shall assess the recent round.

I feel that this timely critique on these Accords should be of special significance to both regulators and regulated alike. For policy makers, such information could reveal discrepancies, overlooked background considerations and give 'food for thought' on future alterations to the Accords. For banking institutes, expertise is needed on the recent round of requirements (for reasons more associated with profit seeking activities as well as technical legalities) and for regulators potential pitfalls may be highlighted and more closely monitored if sufficient ability prevails. For national governments and the public in general, information of this kind could be particularly appropriate as Reinhart & Roghoff (2009, p 170) show by demonstrating that typically, "*the real stock of [government]<sup>1</sup> debt nearly doubles*" in the three years following a banking crisis in both emerging and advanced economies alike. Furthermore, 75% of the losses experienced were concentrated in the leveraged financial system (investment and commercial banks; hedge funds; and finance companies)<sup>2</sup>. These facts themselves should provide a strong incentive for governments (either directly or through central banking) to grasp the accords' requirements and to monitor banking behaviour more generally with regard to *regulatory arbitrage*<sup>3</sup>. While authors differ in their opinions in the significance of the role that banking regulation (through Basel) played in the recent financial

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<sup>1</sup> Inserted

<sup>2</sup> Statistic from Jablecki & Machaj (2009, p302)

<sup>3</sup> See Glossary for definition

crisis, few would assert that it did not play a major part in bringing the crisis about through the behaviour it promoted or at least allowed. Indeed in my own experience, public ignorance of the Basel Accords was extremely surprising considering the amount of influence it has over how banks and economic activity operate in general.

“Solutions are fairly easy if we think the bankers violated traffic signals: we should hand them stiff tickets or put them in jail. But what if we built an elaborate set of traffic signals that pointed them in the wrong direction?” (Rajan, 2010, p 153).

## PREVIOUS RESEARCH

Thankfully, there is a wide range of literature available on Basel 1 (1988) and 2 (2004) which certainly aids us in the quest for an original critique on the processes that are at work as a consequence of these present draft Accords. However, as the recent round of negotiations (convened largely in response to the crisis) is still to be adopted and phased in until 2019, we find that the literature and research is comparatively scarce on current developments which I will attempt to contribute to here. I shall attempt in contrast to previous research to highlight (with the aid of banking economists and theorists’ analysis and criticisms of the previous Accords) the shortcomings of the *current* round 3 by collating the scarce material on it and by providing my own insights upon reviewing the primary documents.

Because of the legal, economic, financial and international nature of this area of research, I attempted to choose a basket of writers reflecting the diversity of background viewpoints involved. Furthermore, though the accords are generally accepted by most economies, I have chosen to take a transatlantic approach between Western Europe and North America. My reason for choosing these regions is primarily a reflection of the fact that both of these jurisdictions have financial markets and banking infrastructure that are significantly more sophisticated and developed in nature than their counterparts in emerging economies.

The third round of Basel is primarily directed at mitigating risk in the regulatory arbitrage that such advanced markets engaged in concerning shadow, commercial and investment banking, so I feel with some qualifications that my geographical choice is relevant for these reasons<sup>4</sup>. More practically and cynically, there is a wider range of literature available on my chosen districts (as a consequence both of their sheer size in worth and their relative weight share of responsibility for the current financial crisis compounded by complexities in their banking systems) than there is for other parts of the globe

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<sup>4</sup> An exception here is US investment banks as they did not take deposits from the public domain. Nonetheless they tended to fall into Basel’s orbit adopting many of its requirements through background agreements which we shall see shortly.

for the same reasons. Naturally, this may be a rather Western-centric approach and there will be many omissions of a vast financial landmass of the globe but some scope limitation is nonetheless imperative for this paper. However as we shall see shortly the structure of the Basel Committee itself is Eurocentric in composition.

Previous research and writing on the subject of the Basel Accords has come from relatively few critics and the same names continue to reappear in whatever search engines are available in the limited scope of Basel. This undoubtedly hinders diversity in the study of a subject. On the other hand, when background checks are ran on these writers, the professional credentials and endorsement of each by external and respected sources certainly improves the case for their inclusion as a relatively strong basis for analysis on Basel and financial regulation more generally. I attempted to accommodate for this narrow range by choosing writers from various backgrounds to reflect some element of each of the areas concerning Basel be they from a legal, economic or financial perspective. As can be observed in the footnotes, the chosen authors come from both sides of the Atlantic, varying in their professions from legal, financial, historical, and economic academia to investment banking, financial regulation, central banking and fund management.

Regardless of the diverse background of such writers, continuous keywords reappear as central issues across all of their works that the Basel Accords *would ideally*(according to the selected literature) address to at least have some potential of reducing the effects of the next calamitous freefall: **excess securitization, asset prices, capital flows, insufficient liquidity, insufficient capital stores/ratios, rating systems failures, central bank ambiguities, pro-cyclical characteristics of regulation, the politics of the committee, regulatory arbitrage due to regulatory costs, inappropriate regulatory focus and questionable incentives** being the main themes which shall all be addressed by this paper to the extent that they remain unaddressed (either deliberately or otherwise) by Basel 3. When we view these forces in conjunction with the original objectives of the Basel Committee, placing Basel III's attempts to address their associated problems under examination, we will find that we can make a sound assessment of the frameworks potential lack of success.

For a banking specific, micro economic level outlook, I chose the research and analysis of Dewatripont et al (2010) as a good starting point<sup>5</sup>. 'Balancing the Banks' (2010) divides its 130 pages

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<sup>5</sup> Mathias Dewatripont is professor at the Universite Libre de Bruxelles (ECARES and Solvay Brussels school of economics and Management), annual visiting Professor of Economics at the Massachusetts Institute of Technology (MIT), and research director of the Center for Economic Policy and Research. Jean-Charles Rochet is professor of mathematics and economics at the University of Toulouse I. Jean Tirole is chairman of the

into three essays by “three giants in the field” who “unusually among top economists are all knowledgeable about banking and the financial system.”<sup>6</sup> The subject matter of these essays named ‘Lessons from the crisis, ‘The Future of Financial Regulation’ and ‘The Treatment of Distressed Banks’ was certainly appropriate to my research topic as they address the difficulties that will continue unless the third set of accords can overcome them.

To obtain a legal dimension and include some US insight, I chose Daniel K Tarullo’s<sup>7</sup> much cited ‘Banking on Basel’ (2008) as an appropriate work to familiarise myself thoroughly with some of the history of Basel, the politics of the committee, pressures facing it, inconsistencies and successes.

Two writers who consistently appeared in materials relating to banking regulation were Howard Davies and David Green.<sup>8</sup> I have chosen to adopt their work to reflect their perspectives as experienced employees in the financial and regulatory field, especially where debates on the regulatory structure and the theory and practices of that structure and the monetary system which directly affect banking regulation and fiscal responses to crises. Though this macroeconomic area largely shadows my specific research topic on Basel, it proves indispensable to the understanding of the subject as the processes of regulatory behaviour are inseparable from the processes of monetary policies as we shall see.

Likewise, the well renowned Barry Eichengreen’s works assisted in this area regarding monetary history. Other books such as George Cooper’s<sup>9</sup> ‘The Origin of Financial Crises’ (2010) provide some much needed simplifications of authors such as Keynes and Friedman on the macroeconomic factors that lead to financial crises and much of the inspiration for it stems from the works of Hyman

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foundation Jean-Jacques Laffont at the Toulouse school of Economics, scientific director of Toulouse’s Industrial Economic Institute and annual visiting Professor of Economics at the MIT also.

<sup>6</sup> Comments by Ricardo Caballero (MIT) and Franklin Allen, Wharton School, University of Pennsylvania respectively.

<sup>7</sup> Professor of Law at Georgetown University Law Center, has taught at Harvard Law School and Princeton University.

<sup>8</sup> Howard Davies is Director of the London School of Economics and Political Science. Previously, he was chairman of the UK’s Financial Service Authority and Deputy Governor of the Bank of England. In the past few days he has announced his delayed retirement due to money taken by the School from General Qaddafi of Libya. I have chosen to continue nonetheless based on his remarkable professional academic credentials as I could not have controlled for these moralistic events in earlier research analysis. David Green has worked for almost 40 years as a central banker and financial regulator, principally at the bank of England and the Financial Services Authority.

<sup>9</sup> I chose this work of Dr George Cooper to reflect the perspective of someone involved from the investor side. He is a fund manager, co founder of Alignment Investments (a London Based asset manager). He has worked in Goldman Sachs, Deutsche Bank and JP Morgan in both fund management and strategy roles and the work mentioned was highly endorsed by *The Economist*, *The Independent*, *Investors Chronicle*, *The Financial Times*, *Wallstreet Journal* and *Newsweek* to name a few.

Minsky.<sup>10</sup> Cooper and Minsky both disbelieve in the efficient market (calling it a “fallacy”) but offer alternative frameworks and approaches in monetary policy and regulation that shall be reproduced later. Both Roubini and Mihm<sup>11</sup>(2010) and Rajan<sup>12</sup>(2010) offer valuable vantage points from which to assess the risk management objectives of banking regulation and the former like Cooper concurs that alternative remedies are required than those traditionally applied. Many other sources shall be cited as the piece unfolds but the foundations of my views have been built on a melting pot of these writings. The work of Charles Goodhart (2008) was indispensable to this thesis, him being the most prominent Basel historian.

The raw primary data in this study shall come from the Basel III accords themselves. The Bank of International Settlements Websites, Reports from the OECD, the Fed Reserve, the Basel Committee Drafts, the Basel Compliance Professional Association newsletters, previous papers and newspapers reviewing, outlining and scrutinising them shall be used where appropriate with the various levels of credibility that goes with each source. One major shortcoming through no fault of the authors (of the secondary data listed earlier) above is that of timing. The two consultative documents entitled ‘Strengthening the Resilience of the Banking Sector’ and ‘International framework for Liquidity Risk Measurement, Standards and Monitoring’ were only finalised in April 2010 for public comment and are not due to be adopted (The Capital Framework) until 31/12/2011 by the major financial centres of the G20 states and the target for their absolute implementation at a national level falls exactly one year later. I thus feel with time on the side of this paper (including up to date sources that the aforementioned authors did not enjoy) that this work’s strength shall be its relevance in timing and its collation of most of the aspects of Basel III instead of just one specific segment.

## LIMITATIONS AND SCOPE OF THIS WORK

The design of my research is thus primarily qualitative in nature as it is literature based sharing traits of both exploratory and descriptive approaches; it is primarily a study of the Basel 3 legal framework that will proscribe some types of banking behaviour (and related risk modelling) and promote others, with many direct, indirect, anticipated and unanticipated consequences resulting from the incentives that will be created. It would be naïve of any author to expect to encompass every fault and related consequence (as many will remain unknown until the next crisis) in such a work, so as stated I have limited myself to the problematic topics already mentioned in relation to Basel, many of which could

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<sup>10</sup> Hyman P. Minsky Ph.D. was an American Economist who studied under J. Schumpeter and W. Leontief. He taught Economics at Washington University, The University of California-Berkeley, Brown University and Harvard University.

<sup>11</sup> Nouriel Roubini is professor of Economics at New York University’s Stern School of Business. Stephen Mihm is an associate professor of History in the University of Georgia where he lectures in Economic History.

<sup>12</sup> Raghuram G. Rajan is the Distinguished Service Professor of Finance at the University of Chicago Booth School of Business and former Chief Economist at the International Monetary Fund.

fall under the title of “regulatory arbitrage” themselves. Likewise, there is a tendency in this research to fight the previous crisis with current regulation-we cannot know in this point of economic history unknown unknowns.

It is important to note with caution that the theoretical background is sourced from many books and articles that are currently being published and are thus potentially affected themselves by current economic thinking and publication bias.<sup>13</sup> This should be seen as a limitation in that it is likely that there is some publisher bias in recent books written by such theorists in the Keynesian school, critical economists in the run up to the collapse, and other alternative approaches to the Friedman, monetarist, New Economy school that was predominant in the run up to the recent crisis. As Rajan (2010, p 155) himself concedes “radical positions that see the system as fundamentally broken are popular. They fit in with the public mood, and they are easy to tout in these times, their greatest merit being their distance from the current system.”

The literature and qualitative approaches that I have decided to take in this context undoubtedly have many limitations. Quantitative analysis by itself can measure with some reservations various phenomena hypothesised in the theoretical background of a study<sup>14</sup>. Furthermore, consider that the trend on official figures based on balance sheet assets (loans to customers) of banks shows a significant decline in their market share of business short term credit from 87% in 1952 to 50% after 2000<sup>15</sup>. However, off-balance sheet banking<sup>16</sup> and a number of other types of finance under shadow banking have grown phenomenally in recent times making regulators jobs increasingly difficult and highlighting the ineffectiveness of bank assets as indicators on commercial bank importance. Indeed, prior to the crisis as Pozsar et al (2010, p65) highlight, the volume of credit intermediated by the shadow banking system was close to \$20 trillion, “or nearly twice as large as the volume of credit intermediated by the traditional banking system.”<sup>17</sup> Given the dramatic scale and implications of this combined pair of problems, I considered a quantitative approach too complex to engage in for this

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<sup>13</sup> Authors such as Krugman, Minsky, Keynes, Stiglitz and indeed Schumpeter for example are receiving particular attention at present as the depth of the current crisis calls for a new theoretical framework or understanding which such authors claim to provide.

<sup>14</sup> I had originally intended to include asset price movements as the major component of this work however I was surprised to discover that “price data for many key assets underlying financial crises, particularly housing prices, are extremely difficult to come by on a long term cross-country basis” (Reinhart & Roghoff, 2009, p 8)

<sup>15</sup> Taken from Graph Exhibit 6.5 in Kohn (2004, p 165)

<sup>16</sup> Banking activities that do not directly involve changes in bank assets or liabilities-increases bank leverage/increases banks exposure to risk “but because loan does not appear in balance sheet, its equity to loan ratio is unaffected” (Kohn, p158-159, 2004).

<sup>17</sup> The same paper clarifies that “shadow banks are financial intermediaries that conduct maturity, credit and liquidity transformation without access to central bank liquidity or public sector credit guarantees” (Abstract). Examples include finance companies, asset backed commercial paper conduits, limited purpose finance companies, structured investment vehicles, credit hedge funds, money market mutual funds, securities lenders.



paper, though undoubtedly this reduces the effectiveness of some deductions I shall make as shall the omission of the shadow banking system from this work. However, as Basel III is only to be implemented on 31/12/2011 beginning the phase-in period and because regulation is still ambiguous at best in areas of shadow banking, causality and consequence cannot be effectively measured from this point in time by this research. My concern in this area is somewhat helped by academic reports attempting to forecast implications.

The Basel Accords have an almost immeasurable effect over many areas of economic activity. There are so many omissions from this thesis that it opens up a wealth of opportunities in further areas of research. As I mentioned, shadow banking played a significant role in the current crisis but this area alone has produced many volumes of literature in the field and I felt mentioning them here in conjunction with Basel and mainstream commercial banking would have added excessively to the already manifold explanatory appendixes to the rear of this work and to the descriptions required before moving on to Basel III. Likewise, it has already been documented by Eichengreen (2008) that since Bretton Woods collapsed banking failures increased dramatically with large capital flows putting pressure on structures not accustomed to such developments previously-I will largely omit monetary history from the Basel process though the collapse of Bretton Woods was what catalysed the need for the Basel Capital Accords.

Many other limitations will become apparent due to my confining this work to the authors that I have selected, the geography of the literature being furthermore trans-Atlantic, and due to the sheer volume and implications (known and unknown) of Basel III. Likewise, I have chosen largely to bypass the structure and politics of the committee (though I have provided some comment and a fact sheet in appendix 6 on their membership and makeup post Basel III) and its relationship with the Bank of International Settlements for which many other papers have been written. I will look briefly at possible reasons explaining why resistance to change is so prominent prior to the conclusion. The main purpose of the work however, is to address the potential pitfalls of Basel III.

The “Macro” and “Micro” desirable features of regulation I shall discuss prior to addressing Basel III are based on past experience/failings and on this selection of writers, ie they are “desirable” *to them only* and may not prove ideal in many cases as there are undoubtedly many reasons why the committee cannot take on board experts’ recommendations, many of which were published in the period available for comment on the draft consultative documents between December 2009 and April 2010. The shorter period of drafting the Basel III Accord- Basel I (1974-1988), Basel II (1996-2004)-between 2007 and 2010 may be viewed either as a success (cooperation may have increased)or with caution (that it may have been a ‘rushed job’ under international pressure not

endured during the previous rounds). This may likewise go a long way in explaining why certain authors' opinions were not apparently noted as Tarullo (2008) worried.

An additional limitation concerns the layout of this paper in that the reader may find the problems relating to Basel II to be given excessive coverage both generally and in relation to Basel I; however the reasons for including and analysing such an amount of faults must be understood in terms of the framework largely in place as a result of Basel II and the foundations it made concrete. These issues will be understood when the reader approaches Basel III equipped with a sounder grasp of the problems.

Finally, and perhaps most significantly it is important to recognise the fact that there will never exist the perfect set of regulations. There is always a trade-off between efficiency and stability as is well known. This work will strive for an "idealised" environment of regulation (itself a product of publication bias, including my own opinions) and compare it with a real set of regulations Basel III which will be analysed accordingly. It is the purpose of research to strive for greater perfection, but as I have now listed some limitations of this work, I can proceed to the methods and main body with greater clarity and reserve.

## **THEORETICAL FRAMEWORK**

What I have continuously found in my research is that The Basel Accords cannot be segregated from Macroeconomic Theory in the form of monetary policy no matter how tempting it is to reduce the focus of attention to a purely financial microeconomic perspective. As Padoa-Schioppa eloquently assert, financial stability is "a land in between" monetary policy and prudential supervision<sup>18</sup>. This certainly adds to the background research that is involved in such a work, but the macroeconomic dimension shall only be mentioned in passing when appropriate to the Basel Framework.

We shall begin with a theoretical framework placing the primary emphasis of this paper on the objectives of of the Basel Accords measuring the former against the latter in terms of short-sightedness. Monetary policy is particularly relevant in areas concerning international capital flows, credit expansion and asset price inflation which are so often associated with the run ups to banking crises. Designed to control banking, the Accords are continuously cited through the literature as a catalyst for innovations in banking (for better or worse). Once we have sufficiently examined the economic forces that have historically driven this banking regulation and the subsequent behaviour of banking activity combined with selected authors' recommendations and cautions for the future,

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<sup>18</sup> Quoted in Davies & Green (2010, p 53)

we can proceed to the current (round 3) Basel Accords with a more enlightened view of contemporary times and the necessary healthy scepticism that must accompany their analysis. I have provided a glossary of terms to ease the reader in understanding more complex terminology where italics are visible with appendixes to avoid introducing longer complex measurements and requirements from detracting from the main body of work.

In order to scrutinise banking regulation and codes accurately, it is first necessary to briefly review how banks as institutions have grown in their importance, size and activities throughout economic history accompanied by the history of the legal framework that guided them. Furthermore, it is necessary to look at the background, perspectives and foundational theories that guided (or misguided) the ethos of banking regulatory reform at various stages of its development. To quote Eichengreen (2008, p 5) “neither the current state nor the future prospects of this evolving order can be understood without an appreciation of its history.”

## **HISTORICAL BACKGROUND OF BASEL ACCORDS AND BANKING REGULATION**

Since its earliest origins in Europe, modern day banking has evolved in terms of its assets, liabilities, and roles as financial intermediaries considerably through space and time being an (if not *the*) essential economic actor. Two forces have driven evolution of commercial bank liabilities-First, as banks have expanded the scope of their lending, need for funds has increased.

Second and more appropriate to this paper, banking regulation itself frequently placed restrictions on the nature or terms of existing liabilities, so banks came up with alternatives to provide them with the funds they needed. Regulatory costs<sup>19</sup> are those that a bank incurs in complying with such regulations. For instance banks must

1. Hold reserves against their deposits
2. Pay deposit insurance premiums
3. Maintain a required equity to loan ratio.

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<sup>19</sup> Likewise, an example of the accounting mechanics of this process of regulatory costs has been provided by this author in appendix 1. The process has been understood from reading Kohn (2004)

**TABLE 1-Institutions that Became Commercial Banks<sup>20</sup>**

TYPE OF INSTITUTION	EXAMPLES	ORIGIN
Payments processors	Medieval Money Changers, English goldsmiths, public banks of deposit	Payments
Merchant Banks	Florentine Banks, English Country Banks, U.S. Private Banks	Remittance, Securities Business
Securities Firms	Scriveners, industrial and universal banks	Securities Business and Intermediation
Chartered Banks	Bank of England, U.S. Commercial Banks	Created as Banks
Near Banks	Savings Banks, Savings and Loans, Credit Unions	Intermediation

Banks borrow short and lend long, profiting from the fact that short-term, liquid liabilities are generally preferable to, and cheaper than, long term illiquid assets –maturity mismatch. The “maturity transformation that banks carry out is in that sense a confidence trick” (Davies & Green, 2010, p9). The regulation that accompanies this rapidly changing critical area of economic activity continues to rise and fall in its importance appropriate to the phase of the economic cycle, regardless of what theory prescribes it seems. The banking industry has changed and continues to change along three dimensions: the entry of new types of institution into banking, the evolution of the intermediation function as banks develop new types of lending and new types of borrowing, and the addition of other related functions to the basic ones of payments and financial intermediation.<sup>21</sup>

Such rates of innovation in financial markets and banking activity demand ever vigilant knowledge in the regulatory sector which seems to lag consistently behind developments in banking. An eloquent definition of financial regulation is provided by Davies & Green (2009, p10) in “the processes of authorizing, regulating and supervising financial institutions themselves, and the traded markets within which they operate”. Alan Greenspan himself despairingly stated that “Regulators can still pretend to provide oversight but their capabilities are much diminished and declining.”<sup>22</sup>

<sup>20</sup> Can be found in Kohn (2004, p 145)

<sup>21</sup> The above opening background information can be found in Kohn (2004) also

<sup>22</sup> Quoted in Davies and Green (2009, p20)

During the interwar years following the Great Depression and the aborted attempt to revive the Gold Standard (see Eichengreen, 2008), the Glass-Steagall Act of 1933 in the US was an early attempt in modern day banking regulation and separated commercial and investment banking, which was followed by the Bank Holding Company act of 1956 restricting the affiliation of banking and non-financial corporations. The related goal was to restrict competition among banks, the predominant belief blaming the Depression on excessive competition through unsustainably high interest rates on deposits fostering greater risk taking in terms of lending and investments. Interest rate restrictions (i.e. banking regulation) now became a catalyst for banks to find “ingenious ways to pay interest on the checking deposits of their larger customers” (Kohn, p151, 2004). These early attempts at taming bank behaviour resulted in radical financial innovations evolving in order to assist the banks to “dance around the regulators”<sup>23</sup> like the *bank repo, interbank deposits, securitization, overnight Eurodollar*, other forms of *off balance sheet banking* and the almost Orwellian sounding *non-bank bank*<sup>24</sup>.

After Bretton Woods collapsed and with it capital controls (which have become increasingly difficult to enforce under the conditions of the ICT Revolution and thus potentially limiting the alternatives available under the ‘Open Economy Trilemma’<sup>25</sup> in the future), coordinated efforts at financial regulation on an international level increased. As Reinhart & Rogoff (2008, p 7) note “since the early 1970s, financial and international capital account liberalization took root worldwide. So, too, have banking crises”<sup>26</sup>. Central Bank Governors in the G10 set up the Basel Committee in International Banking in 1974 and reached the first agreement subsequently called Basel I in 1988. In my opinion, across the literature there is scant attempt to adequately explain the processes, historical context, intentions and functioning of the calculations. I have attempted here to combine the best and most understandable explanations and examples I found from the various authors in a more comprehensive and chronological format. Beforehand however I shall briefly mention some theoretical justification for banking regulation.

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<sup>23</sup> Term borrowed from a chapter in Gillian Tett’s ‘Fools Gold’ (2009)

<sup>24</sup> Definition of Terms in italics can be found in glossary and were summarised from Kohn (2004)

<sup>25</sup> The well-known open economy trilemma demonstrates the impossibility of having more than 2 of the following in operation at one time- Fixed Exchange Rates, Independent Monetary Policy and Free Capital Mobility. See Eichengreen (2008)

<sup>26</sup> Perhaps the authors emphasise this excessively, but undoubtedly capital mobility increased the risk of crises. Until Bretton Woods collapsed, their incidence appeared less, perhaps blurred by the fact that catch up was underway in the ‘Golden Age of Growth’ following the Second World War in Europe. Importantly however, banking crises have been prevalent under all forms of monetary arrangements since the gold standard (See Eichengreen, 2008).

Rochet (2010, p 88) explains that prudential banking regulation can be justified along two lines

1. the protection of small depositors against the risk of their bank collapsing (micro prudential regulation)
2. The protection of the banking system as a whole against the risk of a generalised crisis (macroprudential regulation).

Drumond (2009, p 808) outlines three motives also i) certain banking activities are intrinsically vulnerable, ii) even minor disturbances can threaten overall financial stability through contagion and iii) banks are the dominant providers of some services that are indispensable to society, such as the payment system and lending to small and medium sized enterprises (SMEs). A related problem lies in a 'free rider' issue where many small depositors have little incentive to perform the monitoring functions required of them, this incentive declining further by the existence of depositor insurance which creates its own moral hazard problems in banking.

## BASEL I

The two stated objectives of these accords were to assure the stability of the international banking system and to eliminate distortions to competition.<sup>27</sup> But banking stability in turn must mean some degree of financial stability, which many national central banks define as one of their "core purposes or critical responsibilities" (Davies and Green, 2010, p 59). This ambiguity in the role of the central bank shall be addressed with regard to the Basel Accord. It is also important to note at this stage that Basel should be viewed as a mechanism providing the *minimum* international requirements for banks and national governments are free to add their own additional requests in legislation to their domestic banking regimes.

The simple and clear nature of Basel I<sup>28</sup> was an undoubtedly redeeming characteristic, the main feature of which was that banks hold a minimum of total capital equal to 8% of total assets (each asset weighted according to their risk category-see Appendix 2 and 4 for risk weights and a simple example respectively) which is why the Basel Accords are sometimes referred to the Basel Capital Accords.<sup>29</sup> "Capital regulations are designed to cushion banks against unexpected losses-caused for

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<sup>27</sup> As Rochet (2010, p79 in Dewatripont et al) states, the obvious example was Japan. Implicit government guarantees of unlimited support to banks in the event of failure were a feature of such distortions in competitiveness.

<sup>28</sup> This simplicity is reflected in this paper by the amount of attention given to Basel I in relation to Basel II

<sup>29</sup> Assets themselves were weighted by coefficients designed to reflect the credit risk of these assets. The weighted sum of banking assets-risk weighted assets-was supposed to give a measure of the total credit risk taken by the bank. The risk weights themselves were also simple- 0%, 25%, 50%, 100% according to the nature of the borrower or the issuer of the security.

instance by excessively risky lending” (Jablecki & Machaj, 2009, p 302). The weighted sum of banking assets-risk weighted assets was supposed to give a measure of the total *credit risk* taken by the bank. The same authors show that the focus on capital can be explained by the fact that capital is the portion of the banks’ liabilities that does not have to be ultimately repaid to creditors-e.g. issued shares/equity<sup>30</sup> but wonder in relation to the US pre crisis- “how could total debt grow by 80%...without leading to a deterioration of banks capital adequacy?”(p306, 2009). This regulatory arbitrage certainly arouses our curiosity in this subject and I shall elaborate further later.

FIGURE 1

$$\text{Basel Capital Ratio} = \frac{\text{capital}}{\text{risk weighted assets}} = \frac{\text{capital (Tier 1+Tier 2)}}{\text{assets (weighted by credit risk)+credit risk equivalents}}$$

Tier 1/Core Capital = Issued and Fully Paid Common Stock make up at least half of the 8% requirement.

Tier 2/Supplementary Capital=Undisclosed Reserves, revaluation reserves, hybrid debt instruments (e.g. convertible bonds, cumulative preference shares) and subordinated debt (all funds that are less like common stock and more like regular debt).

*Source: Jablecki and Machaj (2009)-adjusted for Basel I, for Basel II changes to Tier 1 see Appendix 2*

Basel I suffered because of its non-binding nature as no regulator was in a position to commit their national parliament to go along with what was agreed-the Basel Committee only drafts broad standards which it hopes will be implemented at a national level and reports directly to the Governors of the Central Banks of the G10, many of which are not actually responsible for supervision, like the Bank of England (it is the Financial Services Authority who is the supervisor). As Davies and Green (2009, pp38-39) outline since Basel I, there has been “a process of continuing periodic amendment to take account of the evolution of markets, including most notably the greatly increased scale of trading activities, major developments in the field of securitization of bank assets and radical advances in the sophistication of banks’ own risk management, not least to handle the creation and subsequent development of a range of increasingly complex derivative activities.” As

<sup>30</sup> For example if the bank took only 100\$ in deposits (liabilities) without any issued equity/capital and distributed 100\$ in loans (assets), then if a single borrower from the bank defaulted in payment, the bank would automatically become insolvent. A capital buffer requirement was seen and used to prevent this occurring.

Rochet (2010, p79) outlines, its immediate impact was a recapitalisation of banks to such an extent that it sparked accusations of prompting a credit crunch where banks would potentially prefer to buy Government Bonds (for which the Capital Requirement was 0) than loan to firms and households for which risk was weighted at 100% and thus carried the full capital requirement of 8%. The major criticisms of Basel I were that it opened up *regulatory arbitrage*<sup>31</sup> and that the weights chosen by the committee reflected only a portion of the overall risks faced by banks (market risk, operational risk and interest rate risk being neglected). These criticisms paved the way for Basel II, which both refined Basel I and developed original techniques.

## BASEL II

Unlike Basel I, the motivations lying behind Basel II were ambiguous, “launched without an adequately developed set of goals” (Tarullo, 2008, p135) coming at a time of euphoria with the ‘New Economy’ culture suffering from ‘this time is different-syndrome’<sup>32</sup> in 2004 with at least 100 countries intending to implement it at varying dates, the European Union already having included it in its Capital Requirements Directive.<sup>33</sup> Tarullo (2008, p 122) quotes from the Basel Committees on II’s overall aim: “to strengthen the soundness and stability of the international banking system while maintaining sufficient consistency so that capital adequacy regulation will not be a significant source of competitive inequality among internationally active banks.” From this the reader will note vagueness in definition of the purpose of the Accords as it seems to be littered with generalised words that we might expect from a comparatively favourable economic climate-elimination of “competitive inequalities”, “consistency”, and “strengthening the soundness and stability.”

The ‘New Economy’ belief provoked respected economists like Nobel Prize Winner Robert Lucas to famously claim “the central problem of depression-prevention has been solved, for all practical purposes.”<sup>34</sup> During the 1990s and the constant modification that ended in Basel II in 2004, Bernstein (2006, p 268)<sup>35</sup> comments on the deregulation environment, endorsed by respected mainstream American economists who formulated techniques for its implementation “rarely willing to confront the baseless assertions deployed on its behalf. Nowhere was this strange reality made more manifest than in the transformation of the *regulatory environment within which the nation’s banking industry did its work*”<sup>36</sup>. Media coverage showed ‘policy entrepreneurs’<sup>37</sup> explaining why less regulation

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<sup>31</sup> Banks ‘get around’ regulation such as capital requirements through other procedures of accounting or the use of various instruments in off-balance sheet banking.

<sup>32</sup> This ‘condition’ is wittily reviewed in Reinhart & Roghoff (2009)

<sup>33</sup> Info in Davies and Green (2009, p45)

<sup>34</sup> Quoted from Krugman (2008, p 9)

<sup>35</sup> In Rhode and Toniolo (2006)

<sup>36</sup> Italics added

<sup>37</sup> See Backhouse (1998) for more cynicism on this subject.



meant more sustainable growth and those economists who warned of telling signs were generally side-lined as outcasts.

The “shock” of the crisis revealed the obvious dangers which the public, the regulators and the regulated all collaborated in but as author Frank O’Connor wrote “If people do tell you lies all day and every day, it soon becomes a sort of perquisite which you resent being deprived of.”<sup>38</sup> Indeed very recent examples were provided by Jonung (2010) who showed remarkable similarities with the Scandinavian banking crisis in the early 1990s and the resulting race to the bottom in asset prices and the recent experience; and Krugman (2009) cited the Latin American crisis as an early warning in an earlier edition of his *Return of Depression Economics*. Therefore, liberalisation in general had already been noticeable in international trends (clearly contradicting claims that regulation is consistent regardless of the stage of the economic cycle).<sup>39</sup> Basel II remarkably ended up weakly “allowing the major international banks to determine for themselves the manner in which they should be supervised” (Rochet, 2010, p81) using their own chosen internal credit-risk models (*advanced* or *foundational* Internal Rating Based Model) as an alternative to the basic model which had now been mildly refined from that used in Basel I.

**Three pillars** in order of importance were established under Basel II-

1. A Minimum capital ratio (to back credit, market and operational risk, missing from Basel I)
2. a more important role for the supervisor outlining four principles of supervisory review, one of which specified that banks should have a process for assessing their overall capital adequacy in relation to their risk profile and a strategy for maintaining their capital levels. Supervisors should review these strategies, as well as their ability to monitor compliance with an expectation that banks should operate above the minimum regulatory capital ratios and should intervene at an earlier stage to prevent capital from falling below the minimum levels required.
3. a more rigorous role for transparency to involve some ‘market discipline’ in banking behaviour where it was expected that banks would publish more of their internal accounts, open positions and internal risk modelling which would be available to the investor community in the public domain.

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<sup>38</sup> Quoted from the short story “The Idealist” in his selected collection ‘Daydreams’ (1956)

<sup>39</sup>For example, the Gram Leach Bliley Act of 1999 in the US repealed the Glass-Steagall Acts Investment and Commercial Banking sector separation, eased restrictions on Bank Holding Company Act and allowed subsidiaries a broad range of activities not allowed to banks themselves. Income and Corporation Tax rates tended to fall internationally and accounting standards were relaxed in general. Privatisation which began in the 1980s with Thatcher and Reagan was very much a feature of the 1990s and 2000s.

The First Pillar relating to capital requirements was introduced in the first of three consultative papers (CP-1) culminating in Basel II. The two most important changes occurred here. First, Tier 1 capital quality was reduced-under Basel I all Tier 1 Capital had to be common equity as stated but under Basel II this common equity component was reduced to 2% (half of Tier 1) with other “debt like” structures (lower quality assets) now qualifying as Tier 1 also. The second relevant feature I shall mention here was the most controversial component or the “weakest link in the Basel II proposals” (King & Sinclair, 2003) - its insistence on using credit ratings by external but now institutionalised rating agencies for risk weight determinations of exposures to sovereigns, banks and corporations and for differentiating risk weightings of securitization tranches (see table 1). These agencies such as Moody’s and Standards and Poor’s were instrumental in the recent economic crisis in relation to asset price inflation and securitisation and shall be reviewed shortly with reference to Basel regulation under the third Accords.

The second paper (CP-2) developed the Internal Ratings Based Approach (IRB) split between the Foundational (F-IRB) and Advanced (A-IRB) alternatives. This now meant that no less than three alternative calculation procedures (including the standard approach still in use since Basel I with some modifications) were in operation. Across the literature, agreement seems to be unanimous in the most striking innovation of Basel II being the validation, in measuring *credit risk*, of this Internal Rating Based approach (IRB). This rather complicated model (which calculates the actual capital requirement on the basis of parameters *partly* supplied by the regulated bank-pending approval- in the Foundational Approach or *entirely* supplied in the Advanced Approach) can be found in appendix 3 and is displayed there merely to reflect its complexity rather than to provide an in depth analysis of the mathematics involved which is beyond the scope of this paper.<sup>40</sup> Indeed such complexity has been perceived as a sign of sophistication and “some countries whose banks are ill-suited for the adoption of advanced IRB are mandating its adoption” (Davies and Green, 2009, p 44).

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<sup>40</sup> For the material, formulae and mechanics of the risk system, Rochet (2010) provides one of the only detailed reviews with an comprehensive explanation and examination that I could locate in this research. Subsequently, the appendix data should be credited to his work (2010, p 83).

Claim	AAA to AA-	A+ to A-	BBB+ to BBB-	BB+ to B-	Below B-	Unrated
Sovereigns	0	20	50	100	150	100
Bank Option 1	20	50	100	100	150	100
Bank Option 2	20	50	50	100	150	50
Corporations	20	100	100	100	150	100

(Table 1) Risk weights illustrated using Standard and Poor’s rating categories. Bank option 1 is based on risk weighting of sovereign in which bank is located. Bank option 2 is based on a rating agency assessment of the individual bank. (From Tarullo, 2008, p95). This is taken from the First Consultative Paper (CP 1) of Basel II which was slightly modified in the second Paper (CP 2)-See appendix 2 for modifications.

As Rochet (2010, p 84) highlights, such abstract formulae made it impossible for external supervisors to assess whether regulatory supervisors were doing their jobs properly as the formula is a “complex function of many parameters that are practically impossible to estimate independently.

Consequently, it lends the regulator a great deal of discretion in the more or less strict application of prudential criteria”. Restricting such discretion to prevent distortions in competition was an original objective of the Basel Committee which now “therefore becomes unrealizable” (ibid, p84).

Furthermore, if we are to take some key criteria for enabling appropriate evaluation of regulation, (see Mather G, Vibert F 2006) where auditing (compliance and performance) must be feasible (goals must be clearly defined and therefore measurable), then such a procedure of appraisal of both banks’ compliance with regulations and competence of regulators in their assessment of banks becomes next to impossible- “in so far as capital requirements are central to contemporary banking regulation and the IRB approaches are essentially untested, the regulators adopting them are taking at least a leap of faith and, critics fear, possibly a leap off the cliff” (Tarullo, 2008, p 6).

Across the literature I reviewed for Basel II, authors typically have refrained from going into detail on the mechanics of the calculations, perhaps because of the fuzziness associated with the understanding or perhaps to avoid overwhelming the reader. I have provided an extremely (if unrealistically) simple example in Appendix 4 (i) and (ii) which is taken from Jablecki & Machaj (2009) who certainly have attempted more than many others to convey the practical functioning of the calculations and accounting procedures involved. Tarullo (2008) seems to summarise the procedures involved in drafting the accords and Rochet (2010) though providing details of the complex formulae and a brief description, I felt failed to adequately and chronologically brief the reader on the practicalities of the calculations with a ‘real world’ illustration of how it worked. An example from both of the latter authors would have facilitated understanding at an early, but entirely appropriate stage of their reviews.

Rochet (2010, pp98-103) criticises the disequilibrium between the first pillar and the others revealing the contrast between the sophistication and precision of the former and the “arty haziness” of the latter, though as mentioned, across the literature there seems as much “haziness” in Pillar I from a calculation or accounting perspective if anything in this authors opinion. Furthermore, if the original goals of the process were not clearly defined, then how one was expected to appropriately benchmark/measure their implementation becomes unclear. The largest economy in the world, the US, eventually adopted the accords as late as July 2007, ominously only one month before the subprime crisis was to dramatically alter the international economic state of affairs for the foreseeable future.

## PROBLEMS WITH THE BASEL ACCORDS AND THE FINANCIAL CRISIS

As is well documented elsewhere, the seeds were sown for the current crisis with the interplay of various variables at earlier stages of the cycle, one of which was undoubtedly the Basel Accords II and the environment they fostered. In contrast to Bernstein (cited above) Jablecki & Machaj (p301, 2009) claim that “it was a particular set of regulations, rather than deregulation *per se*, that helped sow the seeds of the crisis” which Levine (2010) concurs with. Reinhart & Roghoff (2009, p 156) show that inadequate regulation and lack of supervision at a time of liberalization may play a key role in explaining why deregulation and banking crises are so closely intertwined-the New Economy that fostered such an approach has already been mentioned here. As early as 2003 before the second Accords were finalised, King and Sinclair with devastating accuracy issued an almost prophetic paper (see bibliography) of the incentive structures that Basel II would promote and the type of crisis that would result. Interestingly, it came from the *International Political Science Review* and concerned itself mainly with controls and accountability from a purely political/legal point of view. Without providing quantitative estimates, this fascinating paper provided an exemplary economic prediction from the Political Scientist academic community, which again begs the question-how were many mainstream economists blind to its dangers and the general regulatory trends (or de-trends) that were underway? The main fault lines that the authors focused on in Basel II concerned 8 points (a relevant 6 of which are summarised here)

1. *Rating agencies are pro-cyclical*- research had shown this and that rates were arrived at using a “point in time approach” that varied through the cycle, regardless of the claims of such agencies to the contrary<sup>41</sup>- the rating agencies would give less favourable ratings during the downturn of the cycle, forcing banks to put more capital aside at the worst possible time,

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<sup>41</sup> Quoted in King/Sinclair (see p351, 2003 for references to research)

when the economy heads for recession, exacerbating the risk of a financial crisis (pro-cyclicality)<sup>42</sup>.

2. *Rating Agencies lack Economic Accountability*-claim they are only providing “opinion on creditworthiness,” not a measurement thus avoiding legal responsibility for negligent behaviour.
3. *Rating Agencies lack Political Accountability*-Enjoying an “accountability gap,” operating with an official role between the state and the market (quasi regulatory) they have nonetheless “escaped democratic mechanisms of accountability” (2003, p353).
4. *Incentives for ratings shopping*-Smaller agencies tend to offer higher ratings than global leaders. Banks will shop around for the best rating increasing this “race to the bottom”.
5. *The New System would be Unwieldy and Create Moral Hazard*-Credit risk models were expensive and time consuming to implement, mapping internal credit ratings of thousands of banks onto a uniform consistent set of global “capital buckets” is a monumental task. The Basel Supervisors had to test and evaluate the banks internal risk models and graft the banks’ internal ratings on to a global template! This cost the Basel committee time and reliance on Central Banks to assist them.
6. *Negating the Market in Reputation*- Institutionalising rating agencies in Basel II (given the high barriers to entry) undermines the reputational constraint otherwise imposed by the capital market.

The excessively issued and under-priced risk of securities were undertaken by commercial banks and such institutionalised rating agencies respectively and began out of the culture of “originate and distribute,” whereby banks would originate loans, distributing them in packages rated by the agencies and then passed them off their balance sheets to *Structured Investment Vehicles* (SIVs) sponsored by the banks themselves and financed by *asset backed commercial paper*<sup>43</sup>(ABCP). How these financial relationships and the systemic risks they created were ignored or overlooked can be partly understood in terms of the incomprehensible nature of new financial innovations to the general public and critic.

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<sup>42</sup> It should nonetheless be stated that Repullo and Saurina (2011, pp 18-21) while acknowledging the Point in Time Approach has pro cyclical features, are concerned with the inflexibility and market insensitive nature of the through-the-cycle approach (being less useful for active portfolio management and as inputs to ratings-based price models), especially when it comes to the altered Capital Requirement introduced in Basel III. A through-the cycle approach will not consider the condition of the economy which the authors consider desirable as otherwise it may contradict the Basel Committee Requirement of using “all relevant and material information in assigning ratings”.

<sup>43</sup>Goodhart (2008) calls it “Originate and *pretend* to distribute”

But what Rochet (2010) called “The Breakdown of the Basel Prudential Regime” itself is explained by contributory factors that shall be listed here with brief explanations. His essay which proved very useful in my research should be credited with the below points which I have summarised (pp88-101, 2010). These points taken with King & Sinclair and additional macroeconomic factors mentioned shortly shall assist us tremendously in gaging where the previous accords have failed and what could be addressed in Basel III.

*The inability to control the risk of an individual bank failure* (micro) was a result of inadequate credit risk models (developed by banks themselves as discussed) failing to take account of *liquidity risk* entirely. The regulations paid scant attention to *model risk*. The supervisor, with “great latitude,” could intervene under Pillar II in correcting the imperfections of Pillar I (ratio of minimum capital). Rather than modifying the regulatory ratio in a clear, coordinated and prescribed manner, instead each supervisor had the discretion of this task. Related to this topic was a failure to recognise the endogeneity of banking and financial risks-the ‘Lucas Critique’ concerns the need to take account of changes in the behaviour of agents when their economic or regulatory environment changes, clearly not adequately employed in the monitoring of securitisation as can be seen from the consequences. By encouraging banks to dispose of all the debt they securitised, regulators aimed at reducing the risk of each individual bank failing, lowering the incentives of such banks to assess the quality of the debt (rating agencies were also supposed to be doing this) and increasing the risk of default on securities, penalising the buyers of the same securities. By adopting this micro prudential regulatory approach the regulator is totally unconcerned with the issuing banks resulting reduction in efforts to prevent defaults by borrowers, again penalising the buyers. Furthermore, the criterion for Value at Risk (VaR-the level of capital sufficient to limit the probability of collapse of an individual bank to some ‘acceptable’ level set in advance by regulators) is concerned purely with loss in default, taking no account of future losses thereafter (suited to shareholders of a commercial bank protected by limited liability, but certainly not appropriate for public authorities who have to compensate for losses) whatever their magnitude. Lastly, the committee also underestimated the complexity of structured financial products (innovations), passing assessment and evaluation of these risks on to the aforementioned rating agencies.

*Inability to anticipate Systemic Risk*-Systemic Risk includes all events capable of imperilling the stability of the financial and banking system, such as macroeconomic shocks and contagion-we must consider the impossibility of such an endeavour however, but as I suggested striving towards perfection is the goal. Though most banks were reasonably capitalised, liquidity risk was overlooked and in systemic crisis even a bank whose solvency is not in doubt will find it impossible to access short term financing as the interbank and monetary banks cease functioning. This has been discussed

at length by Bordo (2011b). Models used by regulators sometimes employ assumptions applicable to normal periods but which are inapplicable to systemic crises. Regulators were only concerned with individual bank risk (micro), not at all reviewing risk to the system as a whole (macro).

*Inability to manage Financial Innovation*-Securitisation was the main development referred to here. The crisis is referred to by Rochet as “the Chernobyl of Securitization. The use of a relatively new technology under poorly managed conditions led in both cases to a major catastrophe” (2010, p94). The existing mechanism for social and political management of financial innovation was largely ineffective. However, legislation must not be so reactionary or punitive (politically difficult at present) as to inhibit innovation which the Committee must take into account when drafting. Again, one must ask the question- to what acceptable extent should we be able to manage financial innovation?

*Procyclical Tendencies of Regulation*-amplification of real shocks in the economy. Banks as mentioned (above in relation to King and Sinclair) will be obliged to put aside more capital in a downswing, reinforced by declining ratings of its assets. This will be amplified by a lowering in bank equity as defaults occur and deposits are withdrawn, which in turn will necessitate the sale of assets at ‘fire sale’ prices if other economic agents are operating in the same manner simultaneously. Consequently as Drumond (2009) outlines, Basel II may lead to a greater amplification of the business cycle than Basel I, which would contradict the capital regulation’s goal of fostering financial stability. The same author (2009, p 823) shows that the *magnitude* of the procyclical effects depends essentially on “(i) the composition of banks’ asset portfolios, (ii) the approach adopted by banks to compute their minimum capital requirements-the standardized or the IRB approach, (iii) the nature of the rating system used by banks- through-the-cycle or point-in-time rating systems, (iv) the view adopted concerning how credit risk evolves through time-*the random walk* or the predictability view, (v) the capital buffers over the regulatory minimum held by the banking institutions, (vi) the improvements in credit risk management and (vii) the supervisor and market intervention under pillars 2 and 3.”

*The Disequilibrium between the First and Other Pillars*-I have indirectly conveyed this disequilibrium in this work by drawing far more attention to its features. Two errors can be mentioned here in relation to Pillar II (supervision) and Pillar III (market discipline). The first concerns the decision to give so much discretion to national supervisors (Pillar II) in their determination of capital requirements under Pillar 1 with the objective of correcting imperfections of the capital ratio. But as Rochet (2010) counters, why then did they spend so much time specifying this ratio in such minute detail and if the capital standards were unreliable to begin with, how will supervisory add-ons

achieve sufficiency or consistency and how will national supervisors resist domestic political pressure? The second concerns Pillar III (market discipline) which *a priori* is a welcome idea- however rating agencies' powers were institutionalised, exacerbating the conflict of interest that arises from the fact that these now quasi regulatory agencies are paid by the issuers of structured securities. Rochet (2010) regrets that though market discipline has to function as a compliment to regulatory discipline, it has transpired that the former eventually acted as a substitute for the latter. If the regulatory formulae are so complex that they can be easily manipulated by the bank and/or supervisor, then "all kinds of opportunistic behaviour are imaginable."

Before moving on to some other macroeconomic considerations to consider prior to reviewing Basel III, it may be useful to illustrate the case of Northern Rock as many others in the bibliography have done to illustrate how following the Basel rules could have unanticipated negative effects. Skidelsky (2010) argues with some uncomfortable though nonetheless rational clarity that blaming bankers is worthless as most actually acted "conventionally" under their regulatory environment by the incentives created by regulation. Though "conventionally" may be an excessive adjective in this case, he is not without support from circumstances as they unfolded. Rochet (2010, pp 87-88) documents Northern Rocks scenario concisely highlighting that the CEO justified payment of a handsome dividend prior to its meltdown by his "shrewd" management of the bank as the level of equity under Basel II was more than adequate. The aforementioned Advance Internal Risk Based Approach was approved by the Financial Services Authority for use in this bank that had only £2.2 billion in equity capital for a balance sheet total of £113.4 billion.<sup>44</sup>

Tirole<sup>45</sup> (2010) outlines the realities leading to inadequate internal controls and compensation that contributed to the current crisis which one would expect would fall under Pillar II (supervision). This combines both processes and embedded problematic incentives leading to some path dependent behaviour by management in financial institutions. He reveals how Financial Institutions' Balance Sheets (through *Mark to Market Accounting*<sup>46</sup>-itself documented in its contribution to Credit fuelled asset booms in Cooper 2010 also) can change very rapidly necessitating strict internal risk control<sup>47</sup>.

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<sup>44</sup> Achievable under Basel II, it was leveraged as follows. It held only £19 billion of risk weighted assets under its Basel II IRB approved calculation requirements (compared to £34 billion under Basel I), leaving regulated capital of  $19 \times 8\% = £1.52$  billion. The bank as it turned out had financed investments in opaque and illiquid structures with uninsured short term deposits-extremely risky.

<sup>45</sup> In Dewatripont et al (2010) in Bibliograph

<sup>46</sup> See Glossary

<sup>47</sup> Though Tirole (2010) questions mark to market accounting in Balance sheets, I disagree that this would inevitably change anything significant. Instead it could consume scarce regulatory resources on reforming the accounting system unnecessarily. Fair value accounting is used as "prudence"( a core principal of accounting) in



But internal risk managers did not appear to do their jobs in preventing widespread gambling in the years preceding the crisis where individual traders were allowed to build up “extremely dangerous positions”, as such managers tend to be somewhat “cut off from trading floors, to forestall any suggestion of collusion, therefore risk managers are exposed to informational asymmetries with respect to those who seek to involve the institution in deals; the informational asymmetries are all the greater if they have a reputation for rigor, as supervisees are then particularly unwilling to communicate information” (ibid, 2010, p 45). I find it quite difficult to understand from an accounting perspective how such traders were allowed to build up such positions unnoticed. For instance, when dealing with such quantities of money from an auditing perspective- how can risk managers not demand weekly or even real time reports (much easier to do in the age of ICT) on aggregate and individual exposure? From a purely logical point of view one would assume that this is the core purpose of the job title-risk manager. Why were national supervisors under Pillar II not asking such questions of institutions? If the simplest trading platforms available today to the general public (who can trade easily) can provide risk exposure categories and overall Profit and Loss exposures to the current minute (if not second) then how can risk managers who oversee such larger and critical economic systems escape responsibility for not designing and monitoring something similar? One would assume that they must attempt to ensure an efficient reporting structure (adjustable template) with specific regulation, percentages of acceptable individual monthly loss, percentages of maximum exposure to individual economic categories or portfolio risk etc (eg. 5% property, 5% commodities, 5% ICT shares, 5% of sovereign bonds). Furthermore, the “silo” approach where each division of business considers risk in isolation from other departments could be addressed by Basel III. Roubini (2010, p208) cites an extreme example in AIG where a small branch in London employing 375 managed to bring down countless other divisions employing more than a hundred thousand people by insuring too many toxic *Collateralized Debt Obligations (CDOs)*- An investment-grade security backed by a pool of bonds, loans and other assets. CDOs do not specialize in one type of debt but are often non-mortgage loans or bonds (investopedia).

Indeed, Rajan (2010, p 140) even shows how risk managers were paid far less than trade managers and that risk management was “used primarily for regulatory compliance rather than as an

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reflecting the real market price of the asset (which *typically decline* in value over time through wear and tear and are depreciated as such). Just because certain assets (for investment) inflated in price and recently collapsed, I do not feel that we need to ‘fight the previous crisis’ by inflicting ineffective change in this area of economic activity. What might be less resource consuming and more effective is a compulsory section of audit reports clearly outlining in aggregate *all* on and off balance sheet exposures in a simplified format available to the market explaining the levels of risk attached to each by category much like the standardization approach discussed in relation to Tier 1 requirements discussed shortly by Tarullo (2009). Tirole (2009) himself concedes that the negative effects of market value accounting could be mitigated by the introduction of a countercyclical capital requirement.

instrument of management control.” The same author points to the dramatic increase in *tail risk* taken by institutes in the run up to the crisis as incentives by managers searching for 'alpha' (excess) returns amplified by the expectation that the entire system would be bailed out. This was reinforced further by the fact that aggressive pay practices seem to have gone together with aggressive risk taking and subsequent poor performance (during the crisis that followed).

As mentioned, risk weighting procedures under Basel had encouraged economic activity like regulatory arbitrage in off-balance sheet banking etc. However, at an individual level banker pay packages induced a short term focus, so management did not represent the best interests of shareholders- another poorly guided incentive structure. But as Tirole (2010, p47) points out, directors sitting on compensation committees who provided the “shocking” compensation to the managers are “unlikely to represent the interests of the deposit insurance fund and the taxpayers, and therefore are likely to approve managerial incentive schemes that induce too much risk taking.” This area of incentives concerning risk and payment might ideally then be addressed by Basel III.

Liquidity Risk as mentioned was largely ignored in regulatory requirements under Basel II and Basel III could address the appropriate areas of concern below to be effective in limiting the damage of the next downturn. However, the nature of the liquidity crisis is even now largely misunderstood by the general public.<sup>48</sup> The problem lay not in short term liquidity as some systems were even characterised by being “awash with cash” (aside from extreme examples like Northern Rock) but in the expectation of banks that additional funding requirements would fall on them in coming months, “for example the need to replace withdrawals of asset-backed commercial paper, at a time when they could not raise such term-lending in wholesale markets. This meant that banks wanted to borrow from central banks at such longer maturities; this was a novel situation” (Goodhart, p 51, 2008). With asset prices’ deteriorating rapidly in the recent crisis, it is now debated whether central banks should have been so accommodating in their acceptance of poor quality assets as collateral from commercial banks when injecting liquidity back into the system in form of loans-was this not creating further moral hazard?

Central banks (to encourage liquidity) have introduced a corridor system to balance the cash needs of deficit and cash-surplus banks where the former towards the end of the market day could borrow at the rate at which the upper corridor band (*discount window*) was set (usually 1% >policy rate). If such a scenario continued for a few days due to perceived insolvency risk by other banks of an individual bank whose strategies may have left it excessively exposed, the relevant central bank must

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<sup>48</sup> Goodhart (2008) has documented this scenario at length and the short section on liquidity here should be attributed to his work unless otherwise stated.

intervene with the Ministry of Finance and decide to either liquidate it or to provide it with Emergency Liquidity Assistance (ELA) in the central banks role of lender of the last resort (usually 1% > than policy rate but may be more or less case by case). 4 problems are listed with this system that Basel III could ideally address

1. The stigma effect (reputational concerns about borrowing over the odds) of Central Bank Penalty loans
2. The need for term lending-with the longer term worries of banks (mentioned) came a need to show a cash rich balance sheet to satisfy the money market managers, driving 1 and 3 month LIBOR Rates to a massive premium. Large scale term lending by central banks had to be balanced by opposite short term exercises withdrawing overnight money from the banking system-“operation twist”. If there is a widespread belief that the entire system will be bailed out, the healthy incentive of maintaining a highly liquid balance sheet to purchase asset prices at “bargain basement prices from those who have been too aggressive” (Rajan, 2010, p 151) when liquidity dries up in the markets is completely destroyed. Then “when few banks maintain liquid reserves even while leveraging their balance sheets to the hilt, the slightest adverse shock can tip the system into a full-fledged panic” (ibid, p 151) after an “orgy of risk taking.” This is spoken of by Bordo (2011a, see bibliography) who discussed the possibility that by saving Bear Stern (and sending out bail out messages to the industry), the Fed ensured that by time the Lehman Brothers collapsed, the system was then even more leveraged than it would otherwise have been.
3. The erosion of Bank Liquidity Ratios-Banks have moved away from holding safe public sector assets(carrying a lower yield) into less liquid private sector assets (higher yields) but central banks had only traditionally accepted public sector debt (bearing no credit risk and has a broad deep and resilient *secondary market*).
4. Lack of countercyclical instrument (documented already in this research).

Goodhart (2008, pp 70-74) has suggested a “Preferential Access Scheme” in relation to the above points which I have reproduced in Appendix 5 because of its potential value to the banking industry. It places emphasis on the privacy of the marginal cost of borrowing of each bank/country rather than the act of borrowing and obligates every bank/country to borrow a certain initial amount. This would attempt to alleviate the problems discussed. What needs to be done in his view is to achieve mechanisms

1. that get rid of the stigma problem of a commercial bank borrowing from a central bank,

2. provide the latter with an instrument which can be varied over time both as a public signal and as a means of affecting the access of the banking system to additional liquidity and
3. Give commercial banks an incentive, especially in normal times to hold adequate liquid assets.<sup>49</sup>

Undoubtedly, such a revolutionary approach considering the coordination efforts involved will be excessively optimistic but the idealised scenario must nonetheless be provided. Indeed, concerns regarding coordination (see Levine, 2010) and perceptions of liquidity have been addressed by Bordo (2011a) who showed that historically aggregate figures tend to emphasise liquidity factors contributing to banking crises and disaggregate figures stress the input of solvency, downplaying the significance of panic scenarios.

Before we proceed to recommendations associated with the other problems discussed before now, let us briefly review other factors at work which possibly may and may not be improved with Basel III but undoubtedly influenced events leading up to the crisis.

## OTHER MACROECONOMIC CONSIDERATIONS

Of course there are other prescient observations with the benefit of hindsight reflecting on causes, an “explanation glut” if you like. Bernanke’s now famous “savings glut” (in the East) theory helped explain the excess securitization that played a significant role in the crisis with eastern money searching for higher returns in the US asset market. These external macroeconomic factors are more difficult to address (by way of regulation) and still persist to some extent. For instance the accusation that China is keeping its currency low and buying up dollars or reinvesting in the US if true, will not grant the US the environment they need to smoothly come out of the current crisis with a weak dollar reviving exports.<sup>50</sup> Other macroeconomic factors such as the role of monetary policy and central banking can at least be directly adjusted if commitment, regulation and climate permit.

A related problem lies in the ambiguity in the expected functions and objectives of various central banks in regulatory and monetary policy. This ‘grey area’ in scope has allowed lax trends to develop as central banks shy away from increasing market sophistication which potentially threatens national economic stability. This fuels the crisis further in the aftermath due to the central banks inadequately defined role at national level from the outset.

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<sup>49</sup> The reason for the inclusion of these suggested remedies at this early stage (instead of recommendations later on) is to enable a clearer assessment with fresh memory from the reader of the existing (rather complex) system.

<sup>50</sup> These points were addressed in seminar by Kleinknecht (2011-see bibliography)

The Basel Committee then in a sense (through its international regulations and supervisory role) seems to have had some indirect effect upon central banks becoming distant from realities in their financial systems. Central Banks instead have tended to publish Financial Soundness Reports<sup>51</sup> including a mere third of the Financial Stability Indicators (FSIs developed by IMF<sup>52</sup>) used to arrive at the conclusions, almost 80% of Central Banks do publish core indicators on capital adequacy, which lie at the heart of the Basel Capital Accords, but only 16% publish all three indicators relating to the asset quality of the banking sector. Half of all central banks publish no indicator at all on liquidity (critical to the recent banking crisis), and as much as 90% publish no information at all on the net open position in foreign exchange. The same authors (2010, p 61) point to the difficulty of determining levels of involvement of the central bank. For instance, should they merely collect data from supervisory authorities? Should they assume direct supervisory roles and how far should financial stability concerns influence monetary policy decisions, where the prevailing ideology has dictated an exclusive focus on retail prices?

Some authors such as Cooper (2010) have explicitly (if radically) stated that an “obsession” among central bankers with targeting retail price inflation (insignificant in his view) and a complete apathetic standpoint on asset prices (which led to the subprime crisis) has explained much of the crises in recent history. Most authors in the bibliography have expressed widespread concern that the major price indices on which inflation is monitored contain no inclusion of even property prices. Cooper continues to state that when financial regulation is based upon improper foundations (neglecting the realities of certain systemic factors), in this case the “fallacy of the efficient market hypothesis”<sup>53</sup>, that it is bound to be continuously overwhelmed by the actualities of events as they unfold. Indeed such fallacies led to the lax regulatory trends globally that followed Basel I, an extreme example cited by Tirole (2010) where the Securities Exchange Commission had assigned the task of supervising investment banks (with \$4000 billion in assets) to just seven employees. Systemically important banks were exempted by the SEC in in 2004 from satisfying the net capital rule for broker dealers in the US and were supervised by as “consolidated supervised entities,” which would be now

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<sup>51</sup> As Davies & Green (2010) critique, the numbers of published Financial Stability Reports and the onset of chronic financial stability seem to be actually positively correlated!

<sup>52</sup> The core set includes statistics on deposit takers, while a broader group includes figures on non-bank financial institutions, real estate markets etc. The statistics and data listed in this section can be found in Davies & Green (2010, p 63).

<sup>53</sup> This point was addressed by Kleinknecht in seminar (2011) who dismissed the idea of the market as efficient pointing to indicators like Tobins Q which showed that the market value of shares was as high as two and half times that of the value of its assets. Leverage indicators were simply ignored also. Similar trends are observable even now as Facebook shares cannot possibly reflect the low profit yields of its real business money transactions.

supervised by the SEC who would hire experts in supervision to assess the riskiness of investment banking activities-they didn't.<sup>54</sup>

Better management and monitoring of credit expansion and capital (in) flow “bonanzas” in the run up to banking crises by national governments and central banks could have softened the blow and reduced the macroeconomic costs to society as a whole in recent experience, but regulation remained vague as to how the two should combine under Basel. This is especially the case in countries like Ireland, the UK and Spain which ran “large sustained current account deficits in the run up to the crisis” (Reinhart & Rogoff, 2009, p158).<sup>55</sup> However, Davies and Green (p48, 2010) propose that “insofar as international capital flows have become increasingly equity rather than debt, related, a rise in interest rates could, he suggests, reduce rather than encourage inward capital flows”. They (ibid, p 19) show that leading up to current crisis, the central banking tool of quantitative controls on lending have fallen away in most developed countries-far too little attention to the growth of credit being shown. Indicators have either malfunctioned, ignored as in the ‘Tobins Q’, or have been applied in inappropriate circumstances.

As mentioned earlier, regulators must consider that many innovations (entirely efficient and growth inducing) must be encouraged and not stifled by excessive regulation related to credit expansion-Basel II however simply failed to manage financial innovation as mentioned earlier. In the Schumpeterian view, the financial system and the credit expansion it facilitated was the crucial mechanism that enabled the reallocation of resources necessary to induce dramatic changes in the structure of economic activity. Indeed, O'Sullivan (p243, 2006)<sup>56</sup> shows how Schumpeter viewed existing resources in the economy being fully utilised in a 'circular flow' at any time. However, these somehow needed to be detached from their current uses and made available to entrepreneurs in new ways in order to foster economic growth which was a result of innovation. Securitization seems to accomplish precisely this role through “making the illiquid liquid”. Scrutinising regulatory failure in monitoring and assessing such measures is a more useful approach in the case of this research than blaming securitisation *per se*.<sup>57</sup>

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<sup>54</sup> Information from Levine (2010, p 16)

<sup>55</sup> The self-explanatory book title ‘This Time is Different’ and the related mentality that accompanies booms is examined by Krugman who laments that business leaders (because of their background) fail to understand that a country that attracts a lot of foreign investment/capital inflows “will necessarily run a trade deficit” (2009, p 15). This article titled “A Country is not a Company” was originally published in the Harvard Business Review in January 1996.

<sup>56</sup> In Fagerberg et al (2006) in bibliography

<sup>57</sup> This was confirmed also by Kleinknecht (2011) in seminar who outlined that it was an extremely efficient (though relatively untested) means of distributing credit across the economy.

The 'efficient market' being the basis for the monitoring and regulation of this new innovation at work must however be questioned again here if not the perception of it. 'Unknown unknowns' (as opposed to known unknowns) are addressed by Rajan (2010), Cooper (2010) and O'Sullivan (2006, p 257) the latter highlighting that “when uncertainty is fundamental, as it is when innovation occurs, economic agents are uncertain not just about which possible state will obtain but which ones are even possible.” Such observations in the run up to the recent crisis fell on deaf ears as the 'efficient market hypothesis' claims that all risk is reflected in the pricing of a product/package/share/instrument. However, Rajan (2010, p 146) warns against excessive attacks on the 'efficient market' as nothing in the theory suggests the market should be spot on all the time, possibly not having complete information. He continues that the regulators themselves were surprised by the quantities of asset-backed securities the banks carried both on and off their balance sheets. The mechanics of securitization (with an example) and the inadequate risk measurement associated with it are discussed in appendix 4 (iii) and should be attributed to both Goodhart (2009) and Rajan (2010). However, let us momentarily ignore this and consider the unhealthy<sup>58</sup> incentives fostered by the 'too big to fail' belief in the run up to the crisis: then blaming the efficient market hypothesis becomes redundant as incentives and prices are behaving differently than if the market was functioning efficiently and freely (as opposed to an implicit expectation that it will be rescued due to its perceived importance), explaining much of the under-priced risk. Perhaps it is impossible to judge the reliability of the efficient market hypothesis in a quite clearly, inefficient market.

## OBSERVATIONS AND RECOMMENDATIONS ACROSS THE FIELD

What then has been learned from the experience of *time*-what Samuel Beckett appropriately called “that double-headed monster of salvation and damnation<sup>59</sup>”? What should be done? There is no end to the commentary available on the corrective action that should be taken both from a regulatory and macroeconomic perspective. Bordo (2011b) is optimistic in his belief that this crisis was much better managed than the previous financial crises which dwarfed the current one being the least costly-those of 1890, 1907 and 1931<sup>60</sup>.

I shall begin with some general background considerations or what I term “macro desirables” in the formulation of potentially sound regulation and follow with some specific regulatory recommendations or “micro desirables” taken from across the literature.

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<sup>58</sup> Or perhaps from the point of view of the rescued firms, correctly placed!

<sup>59</sup> Quoted from his *Essays on Proust* (1939)

<sup>60</sup> In Seminar (2011b)-see bibliography

## MACRO DESIRABLES IN FORMULATING REGULATION

It should be stated early on in this section that “macro desirables” in the sense of Basel will mainly relate to **Pillars 2 and 3 (supervision and market discipline respectively)**. The larger functioning economic environment is obviously the major determinant on how these two pillars can operate.

One recurring theme is the need for improved **transparency**. Certain systemically threatening derivatives (*Credit Default Swaps*) are another area criticised by Roubini and Nihm (2010, p 200) where the contract is signed by two private parties to which no one else is privy-“the lack of transparency is complete: no one knows the extent of anyone else’s exposure, much less where it is concentrated” and *counterparty risk* remained unconsidered. The public itself however must take some responsibility for seeking information on its investments as Basel cannot be expected to regulate education. Rajan (2010) has highlighted the obvious that it is the people themselves who decided the inflated prices in stock markets.

**Standardization** is also specifically prescribed (ibid, p 193) with regard to the way asset-backed securities are packaged together so that people could have some way to compare different kinds of securities so that they can be accurately priced. The quality of the ingredients in the packages is what would matter-*CDO*<sup>2</sup>s for example take a thousand or so different loans- package that as an Asset Backed Security and then combine that ABS with 99 others so that a hundred are combined into a CDO. That is then combined with 99 different CDOs. Each which has its own unique mix of ABSs and underlying assets-the purchaser then of this instrument is “supposed to somehow get a handle on the health of 10 million underlying loans. Is that going to happen? Of course not” (ibid, p 194). Such transparency and information provision requirements concerning rating standards and addressing problems relating to derivatives (if not banning some such as the *CDO*<sup>2</sup> mentioned) can be directly addressed by Basel III.

Linked to this are the distortions in the **pricing of risk** and **payment incentives** already mentioned that stem from actual and potential government intervention as well as herd behaviour. Rajan (2010, pp158-180) helpfully suggests

1. *ending government subsidies* and privileges to financial institutions,
2. *reducing the search for tail risk* by altering compensation incentives throughout the corporate hierarchy where the risk taker would suffer targeted penalties (appropriately calibrated)if the risk materialises and holding a significant part of a units bonuses in any year subject to claw backs based on the unit’s performance in subsequent years. Likewise writing such hold backs



down if the firm has to be bailed out in any way serving as junior equity would discourage behaviour expecting a rescue in the event of failure.

3. *Eliminating the “Too Systemic to Fail” syndrome* by preventing institutions from becoming too important (through information collection by regulators on inter institution exposures as well as risk correlations and concentrations within the system) and making financial firms easier to resolve by requiring them to meet periodically with regulators to review a “living will” (a plan that would allow it to be resolved over the weekend in the event of imminent failure, much of the detail being published for markets in easy-to-digest form-likewise promoted by Roubini and Nihm, 2010). Roubini and Nihm (2010, pp 226-234) suggest increasing capital ratios to break firms up, though personally I question the potential effectiveness of this as surely bigger firms would be better able to deal with larger capital requirements. They continue by stating blatantly that some firms are “too big to exist” and suggest “Glass Steagall on Steroids” to address the problem through separating investment banks from commercial banks, forbidding the former from borrowing short term as it invests long increasing the resilience of the system (see 4 below) and only commercial banks should enjoy deposit insurance.
4. *Increasing the resilience of the system*-not making resources available in every case increases uncertainty which is a healthy macro desirable. Furthermore, over reliance on any regulation or institution (such as rating agencies) increases the fragility of the system so we need to “multiply players at each level of the securitization process” and remove deposit insurance (perhaps retaining it for small and medium sized banks) to make depositors think before they make a bank too big. In this “privileged realm” of rating agencies<sup>61</sup> the same companies can bizarrely offer consulting and modelling services receiving payments for providing advice to banks on how to engineer a product to attract the best rating! They are also paid by the same banks whose instruments they rate. Such perversely structured incentives would be ideally addressed in Basel III. One solution is provided by Roubini and Nihm (2010) in that all institutional investors pay into a pool that would be administered by regulators-for every new issuance of debt, this pool would be used to purchase ratings from a group of sanctioned agencies upending their economy which is precisely the objective as they should not be paid directly for their ratings by the same institutions. Rochet (2010) has insisted that both banks and the rating agencies who rate their debt should be compelled to hold a certain portion of the securities to discourage toxic package selling.

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<sup>61</sup> Roubini and Nihm(2010, p 197) show that the Securities Exchange Commission (SEC) makes it extremely difficult for new companies to obtain the coveted Nationally Recognized Statistical Ratings Organization (NRSRO) rating as new comers must have been in business many years and have many major clients!

Roubini and Nihm state (p160, 2010) regarding new financial instruments “modest and free experimentation should be allowed but proliferation limited until regulators are satisfied they understand the innovation well, and the systemic risks it poses have been dealt with” or to “be ready to adjust the supervisory regime in the light of changing risks”(Davies and Green, 2010, p 286)<sup>62</sup>. All of the above then is addressed directly or indirectly through transparency, standardization (or perhaps simplification) and also importantly an allowance for flexibility in regulation. Basel III could ideally set requirements on pay incentive structures, information and reporting requirements might increase (though not excessively) and supervisors themselves must be monitored as even they compete with other regulators and other unregulated ones in some other market segments both at an international and national level.<sup>63</sup> Thus the regulated institutions likewise ‘shop around’ for the “most accommodating” as happened in the US.<sup>64</sup> Such behaviour could be reviewed by Basel III as it shares many similarities with the credit rating agency problematic incentive problems mentioned.

Disregarding the national supervisors (such as the FSA in the UK for example), the **Basel Committee** itself has come under heavy fire because of its composition and the manner in which it operates. How was it that such questionable items as unrealised gains from stock holdings were allowed as Tier I capital upon the insistence of some countries following Basel I? How was it that some countries allowed their banks to include as Tier I capital various hybrid financial instruments that were not included in the original Basel I definitions of qualifying capital? Tarullo (2009, pp264-286) who prescribes an urgent redefining of capital as permissible components of Tier 1 and Tier 2 capital stressing that the monitoring functions of the committee must be strengthened and suggests a quarterly reviews on the capital levels of large, internationally active banks as an appendix to the existing ‘*BIS Quarterly*’ containing both a quantitative section (leverage and risk based capital ratios and *subordinated debt price*<sup>65</sup> movements in ‘micro desirables’) and a qualitative section (including the committees analysis of their condition and steps taken by national regulators to strengthen their position). This suggestion would mean that national supervisors would have to explain significant changes in their banks’ capital ratios or subordinated debt price movements directly to the committee as well as bringing trends to the fore that may require regulatory adjustment and may increase committee activism as scrutiny by non-governmental parties’ increases. Secondly, Tarullo (2010, p 277) suggests an “inspection unit” to monitor how national supervisory agencies perform in

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<sup>62</sup> These are all variants of what Dewatripont (2010) has called “Building an adaptive Regulatory System in a Global World”.

<sup>63</sup> This is referred to by Tirole (2010, p 30)

<sup>64</sup> When Countrywide Financial changed its regulator in 2007 to escape regulation to constraining and was “welcomed with open arms by the Office of Thrift Supervision (OTS), whose budget depended on payments made by institutions it regulated”(Tirole, 2010, p 30)

<sup>65</sup> See Glossary and “Micro desirables” section for further information

bank model supervision taking talent from across all the Basel countries and rotating them-it would independently assess the capital management practices of large, internationally active banks of the Basel committee countries conducting on-site model validation of a limited randomly chosen number of these banks in any given year much like a sampling audit in the financial accounting field. This sampling must be accompanied by compulsory minimal reporting requirements by *all* banks under Basel in my view to enable Tiroles (2010, p 27) solution of “monitoring transformation not only at the institution’s level, but also overall.” Like Rajan (2010) Tirole (2010, p52) insists that over regulation is not the answer which is politically difficult to convey at present but what needs attention is the protection of regulated firms from the failure of unregulated financial corporations, limiting the formers counterparty exposure to the latter. “The role assigned to prudential policy must be reinterpreted: it must no longer be a matter of explaining to banks how they should manage their risks, but instead lay down simple and verifiable criteria triggering the intervention of a supervisor”(Rochet, 2010, p 103). Finally and fundamentally, as the Basel Accords are not binding like International Law, there is no formal dispute settlement mechanism as documented by Tarullo (2009, p280).

Pillar III (market discipline) can only function effectively if two conditions are guaranteed in advance- the government has found a way of committing itself not to intervene and markets function properly (Rochet, 2010, p 100). Supervisors can only do their jobs effectively and market discipline can only function correctly if some of the micro desirables such as the removal of complex equations and immeasurable arbitrary numbers are accomplished.

The political economy of these **national banking supervisors** (Rochet, 2010, pp101-103) could likewise be overhauled in Basel-they could be powerful and independent having the power to take over troubled banks and sack management , expropriating shareholders *before* they really endanger the funds of their small depositors and the financial system being independent enough to resist political pressure from interest groups. This is only accomplishable through Basel legislation which should prohibit injection of public funds into the banking sector in normal times, obligate the supervisory agency to intervene coercively in distressed bank management in a graduated manner relative to the degree of difficulty and the formulation of simple and observable criteria that would define the conditions under which the supervisor should intervene so that they can be assessed externally and verified by a parliamentary control commission.<sup>66</sup>A further useful suggestion is explicitly made by Goodhart (2009, p 40) in that supervisory agents adopt the “Twin Peaks” approach officially dividing the function of supervision in two parts-micro prudential role focussing on conduct

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<sup>66</sup> These insightful recommendations all should be attributed to Rochet in the stated pages

of business issues and macro prudential focussing on systemic issues. Levine (2010, p 17) asserts that the financial regulatory authorities were “aware of the problems associated with their policies, had ample power to fix the problems and chose not to.”

Davies and Green (2009, pp215-223) focus on the out dated international balance of power view expressed or reflected in the composition of the nationalities in the Committee not even including China<sup>67</sup>. They further state that the Committee continuously defends the fact that only Central Bank Governors should control it though it is almost impossible now to find one with relevant experience for the task .The authors wish to amalgamate overlapping bodies and eliminate redundant groupings as a useful function for a strengthened Financial Stability Forum.

Regulatory capture is another problem- regulators seem to move “seamlessly” from larger companies such as Goldman Sachs (many of whose CEOs have held US Government positions) to government or regulatory positions actually acting as allies for their former employers pressing for looser regulation.

But where should **Central Banks** themselves come in to the Basel process? Davies and Green (2010) provide a useful agenda for change to fix the “unavailable” or “rusty through lack of use” tools that were insufficient for the financial crisis. With regard to this research a few relevant topics shall be mentioned briefly-there is a role for an “oversight board” to act as a “buffer between government and governor”(2010,p287) taking responsibility for financial independence, staffing and efficiency- I suggest here that this could also include evaluating regulator performance if clear criteria (as mentioned earlier this is not currently the case)were laid down by the new accords as to supervisory objectives. Alternatively and likewise, Tarullo’s (2009) “inspection unit” (see above) could produce a favourable situation to this case. We wish to avoid a Kafkaesque nightmare of bureaucratic regulations and counter that such a board cannot substitute for direct accountability to the legislature for monetary policy. There is an “urgent need for better metrics of financial stability” (ibid, p289) a useful start of which has now been provided by Roghoff and Reinhart (2009) and Demirguc-Kunt & E. Detragiache (1998).<sup>68</sup> The Financial Stability Reports issued should now include

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<sup>67</sup> The authors state that the Committees members should be those countries which are the domiciles of internationally active banks-this would add China, Australia, Singapore and India in time with some of the smaller European countries leaving instead. However, we have seen in relation to the UN Committee how difficult it can be to dislodge powerful interests once established. However Basel III has changed this-see Appendix 6

<sup>68</sup> Demirguc-Kunt & Detragiache (1998) show that low GDP growth is significantly correlated with Banking Crises, particularly in smaller developing countries which are likely to be more volatile (the Rep of Ireland springs to mind), high rates of inflation and high and volatile interest rates make maturity transformation more problematic. High real interest rates may also be the result of financial liberalisation. All are highly correlated with the onset of banking crises. Roghoff & Reinhart (2009) building on the work of the former have divided

recommendations to regulators also, thus placing accountability back towards the central bank in terms of paying attention to financial institutions and excessive credit growth. Davies and Green (2010) worry however that giving complete supervisory responsibility to central banks will focus excessive power in the hands of one body and distract it from other key areas of monetary policy. Cooper (2010) laments that until Central Bankers move away from the efficient market hypothesis and focus on an improved inflation index it is useless to continue. He provides an eloquent if simplistic example of the ideal behaviour of a central bank governor based on an engine's governor mechanism devised by James C. Maxwell.<sup>69</sup> Tirole (2010, pp 17-18) likewise shows that regulation and fiscal policy seem to have a better chance of terminating a bubble than monetary policy-(Bordo, 2011b would disagree) however in order to activate countercyclical policy in a downturn governments must have followed conservative fiscal policies in the upswing so as to be able to effectively counter the downswing. Unfortunately on the whole, this was not the case in the recent crisis.

## MICRO DESIRABLES IN FORMULATING REGULATION

Now I will attempt to delve into the specifics of the Basel Accords that could ideally have been addressed by Basel III, like the previous section basing my comments on recommendations and specific concerns expressed by authors in the field relating particularly to Pillar I.

**The Pillar I capital requirement's** pro cyclical and abstract calculation methods have already been discussed. An ideal fundamental remedy then would be the introduction of a *countercyclical instrument* and *simplified buffer* in its place. Goodhart (2008) adds that liquidity requirements also should be countercyclical and stresses reintroducing maximum time varying loan-to-value ratios. As already mentioned, standardization of permissible components of Tier 1 and 2 capital is essential and straight forward but Tarullo(2008) also recommended adding an International Leverage Requirement to Pillar I which would set a transparent floor for bank capital levels difficult to manipulate. Its transparency and simplicity would make it much easier to monitor for compliance than the A-IRB method which could ideally be removed as a basis for calculating capital requirements replaced by a more simplistic one.

Tarullo also argues that keeping some forms of A- IRB methods for certain banks may continue to function alongside others, but surely this will create the kinds of obscurity, vagueness and lack of

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their own BCDI (Banking Currency Debt and Inflation) Index which academics and officials could usefully adopt but claim that "real housing prices are nearly at the top of the list of reliable indicators"(2009, p 279).

<sup>69</sup> The ideal governor of the engine would allow disturbances within a certain range of set parameters with a desire of speed at constant rotation being impossible to achieve. The breaks would suddenly halt the engine at high speed and release too quickly re accelerating at volatile levels. Likewise Governor Systems through the central bank were invented to protect systems from the damaging effect of wild swings in operating conditions.

accountability that enabled much of the regulatory arbitrage causing the current crisis? A **simple**, well defined counter cyclical instrument such as requiring banks to keep more capital during good times and releasing more in the bad has been suggested by many across the field. Goodhart (2008) even suggests that instead of capital requirements being based on levels of risk weighted assets, why not base them on the rate of their growth? Though, undoubtedly some calculation issues would arise here also. Though Dewatripont (2010, p 117) likewise stresses simplicity, he nonetheless states that a single capital requirement, even where it is very complex cannot limit risk taking by banks-“it is therefore necessary to design a battery of indicators that can provide **simple** signals for the various dimensions of banking risks (including liquidity and transformation risks, risks of large losses, and exposure to macroeconomic shocks) and be simultaneously used to determine whether supervisory corrective action is needed.” Roubini and Nihm (2010) and Rajan (2010) offer 2 hypotheses on what such a counter cyclical instrument might take the form of.

1. “Dynamic Provisioning” would instead of requesting banks to hold a static amount of capital throughout the cycle insist upon higher capital requirements in good times and less in bad.
2. “Contingent Capital” would see banks issue a certain type of debt known as “contingent convertible bonds.” If the bank’s balance sheet deteriorates beneath a certain predefined trigger point, the debt will convert into shares or equity. This would give banks the capital they desperately need at such a time while likewise giving its former bondholders a higher stake holding in it, shrinking existing shareholders interest. This is in the interest of neither party which certainly has some attractions regarding incentive compatibility with the wider public good. Tarullo (2008) calls his version “subordinated debt.”

Though I am indebted to the writers in the bibliography for much of the background work for this paper I could not find any expert writing on something (pre Basel III) which seemed quite an obvious (though undoubtedly somewhat naïve) alternative to me. Up to present the level of capital which a bank is required to hold has been a function of the *perceived riskiness of a bank’s assets*. Why not impose a higher capital charge (to take into consideration the temptations towards greater risk taking behaviour that would result) and apply an equal though higher rate across the board to every class of asset (eliminating preferential treatment) calculated in a simple manner abolishing the Risk Weighted Asset (RWA) system? This would impose a heavier tax on banks but would avoid the elaborate RWA regulatory arbitrage that has occurred up to the present. This could only function effectively in an ideally modified market place/economic environment like the macro desirables suggested above. Undoubtedly, some adjustments for bank size etc would need to come under consideration but simplicity is the goal undoubtedly as it clears the muddy waters that enable all sorts of undesirable behaviour.

## BASEL III

The much anticipated Basel III was finally published on December 19<sup>th</sup>, 2010 with all major financial centres committing to adopt it by 31/12/2011, all governments enacting legislation adopting it by 31/12/2012 with a phase-in arrangement ending in 2019 (see Appendix 6 for changes and timetable) when the continuous adjusting to meet its requirements finally come to an end. We have already examined the problems with Basel I and II and recommendations associated with them. It would be excessively optimistic to assume that every recommendation above could be factored in to Basel III. What I have attempted to achieve in the previous sections is an adequate briefing of some problems and have given idealised suggestions in response to them which could be addressed in a number of ways. I now proceed to the main features of Basel III providing analysis thereafter. Let us remember the purpose of the original Basel Accords- to assure the stability of the international banking system and to eliminate distortions to competition. As Admati et al(2010) states “Healthy Banking is the goal, not profitable banks<sup>70</sup>.”

## SUMMARY OF CHANGES

1. Regarding Pillar I (calculation of Capital Requirements), it should not be surprising that changes were specified. The requirement of Tier 1 capital making up 4% of the total 8% was now increased to 6% (of the total 8% which remains the same) and more significantly, the common equity component of Tier 1 was moved from 2% to 4.5% (of the now 6% total). This is supplemented by new rules calculating many of the capital charges to address the mispricing of risk before the crisis.
2. A Leverage Ratio has been added to the arsenal of the Basel III Accords under Pillar I but the relevant capital to be applied has yet to be agreed on.
3. A Capital Conservation Buffer of 2.5% to consist of common equity will be required in addition to the minimum in 1. What this translates as in aggregate is a minimum core equity requirement of 7% (4.5+2.5) and the Total Tier 1 to increase to 8.5% (6+2.5) .
4. A Countercyclical Buffer (between 0-2.5%) to come into play when there is excessive credit growth in the economy to be implemented according to national circumstances (No time frame specified).
5. To address Liquidity Risk, the 30 day Liquidity Coverage Ratio for internationally active banks has been introduced attempting to ensure adequate levels of “unencumbered, high-quality liquid assets that can be converted into cash to meet its liquidity needs for a 30 day calendar

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<sup>70</sup> Financial Times, Nov 9, 2010

time horizon under a significantly severe liquidity stress scenario specified by supervisors” (BCBS, p 3, Dec 2010)<sup>71</sup>. It is calculated as follows:

$$\frac{\textit{Stock of High – quality Liquid Assets}}{\textit{Total Net Cash outflows over next 30 calendar days}} \geq 100\%$$

6. Complimenting 5 above is the Net Stable Funding Ratio. The Committees stated objective here is “to promote more medium and long-term funding of the assets and activities of banking organisations” and it “establishes a minimum acceptable amount of stable funding based on the liquidity characteristics of an institutions assets and activities over a one year horizon” (p25, *ibid*). It is calculated as follows:

$$\frac{\textit{Available Amount of Stable Funding}}{\textit{Required Amount of Stable Funding}} > 100\%^{72}$$

It is telling that of the two documents comprising Basel III (see bibliography), the larger documents heading reads “International Framework for Liquidity Risk Measurement.”<sup>73</sup>

7. Further standards are being developed regarding systemically important banks which “could include capital surcharge, contingent capital and bail in debt”<sup>74</sup>.

## ANALYSIS

Apart from the incomplete and vague nature of some of the changes above, the devil is in the detail and it is there that we can find some omissions that still persist with respect to the aforementioned problems. It is important to pay particular attention in the following critiques as to which sources are critical recognising the publication bias-the banking industry is likely to respond negatively (to any change in their existing capacity due to the costs associated) and the popular media is likely to demand more populist measures. The few academic journals that have published articles should be of value to us here but because of their scarcity it is necessary to proceed examining all sources (especially the Third Basel Accord itself) with healthy scepticism.

It should be stated that the package of Basel III has been put together by different working groups, often operating independently of each other and at speed under pressure from lobbying groups and national governments with the help of just one impact study undertaken in April 2010; this can help

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<sup>71</sup> Basel Committee on Banking Supervision, Basel III: International Framework for Liquidity Risk Measurement, Standards and Monitoring, Dec 10, Bank for International Settlements (See Bibliography).

<sup>72</sup> Formulae taken from same document

<sup>73</sup> This document contains 47 pages while the other paper contains 33.

<sup>74</sup> <http://www.basel-ii-risk.com/basel-iii-guide-to-the-changes/>



explain the longer phase-in period necessary<sup>75</sup>. But this rushed effort of drafting may have sacrificed quality in legislation considering Basel II took many years to finalise? The nature and length of the implementation or phase in period (see appendix 6) has baffled many in contrast due to its excessive length contributing to Basel III's ad-hoc characteristics. As we emerge from the crisis and a plethora of issues have yet to be decided on, exposure to lobby group pressure will play a part in the later stages of phase-in. This must be the first fundamental criticism of the Basel III accords.

The issue receiving most attention is the **Capital Requirement** increase which appears to go in the correct direction at first examination. The same Tiers remain, the narrowest now composed entirely of common equity-worryingly, the phase-in period for definitional changes will run as long as 2023 as Blundell-Wignall & Atkinson document (2010b, p 6). They state that the Basel Committee addressed the Capital Requirement in two ways-

- 1) to strengthen the risk coverage of the existing capital framework by refining Basel II rules (to correct for omissions or underestimates of risk especially in relation to off-balance sheet items and counterparty risk) and by demanding more calibration (higher capital requirements)
- 2) Introduction of the Leverage Ratio as a non-risk weighted back stop.

The same authors continue to state that the fundamental problems remain regarding the capital requirement. Its conceptual underpinnings are poor being "portfolio invariant", the charges not depending upon what else is in the portfolio, it is biased against diversification constituting differential regulatory treatment across asset classes causing portfolio concentration and it demands too little equity and permits too much leverage (as late as 2015 before the counter cyclical buffer phase in, the permissible leverage of equity will be higher than pre-crisis levels for many banks). In a related paper (2010 a, pp4-5) the authors state that there is no country-specific risk consideration in Basel III. It relies instead on the discussed out-dated VaR model in global risk and this single factor model cannot capture any clustering of firm defaults due to a common sensitivity to smaller scale components of the global business cycle. However, we must understand that there is a trade off in terms of simplicity here where regulators jobs are made easier by a 'one size fits all' approach.

I have already mentioned a simplistic solution of a higher capital charge applied across the board which the leverage ratio moves towards. But then do we need the two in operation simultaneously? Blundell-Wignall and Atkinson (2010 b) have suggested that a leverage ratio appropriately designed and calibrated would ideally replace the capital risk weighted framework, ending the existing bias towards concentrated exposures to favoured assets and reward diversification. The question is

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<sup>75</sup> Risk Magazine Opinion, 1/12/2010, Nick Sawyer

posed as to whether Pillar 1 rules are really necessary-as stated however, this will only be achievable in an ideal world of transparency and a credible commitment by government not to intervene (when in some cases this might actually be a favourable course of action) in the market. Walker (2011, p98) has stressed that low capital levels within the major global banks did not cause the crisis directly (only becoming an aggravating factor once the crisis had moved from tightening of credit in inter-bank markets to a full solvency crisis). Admati nonetheless has stated that at least 15% of banks total non-risk weighted assets would create substantial social benefits, and there would be little if any social costs. This simplicity is along the lines of my earlier suggestion and is less difficult to anticipate, design and understand than contingency capital etc. The Banking Industry itself has fiercely resisted further capital charges, for example it (through its lobby group the Institute of International Finance/IIF) painted an “apocalyptic picture”<sup>76</sup> claiming that the European and US economies would be 3% smaller after 5 years of Basel III (the French banking association predicted 6%) than they would otherwise have been as a result of reduced lending in the economy. Jamie Dimon, one of the few prudent risk managers in the euphoria of the economic boom (CEO of JP Morgan Chase) has claimed however that even the current capital regulations will “stifle economic growth” not by reduced lending, but by re priced lending<sup>77</sup>. But an OECD Report was much more forgiving and most academic estimates have come down around 0.2 percentage points on loan pricing, little effect on loan availability and a reduction in GDP by -0.05-0.15%<sup>78</sup>. Admati and a host of professors signed a letter to *The Financial Times* countering these arguments which stated that it would be easier for better capitalised banks (with less debt commitments hanging over them) to raise funds for new loans, it would remove biases created by the current risk weighting system thus actually encouraging traditional loans again and indeed some forms of lending are unhealthy as has been made painfully apparent. The Basel III (Certified Basel Professional) Association refute the Banking industry’s claims of equity being expensive in their February 2011 newsletter and provide a useful and simplistic illustration (reproduced below) about how a bank can meet a hypothetical capital requirement of 20%, fixing the value of a bank’s current assets.

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<sup>76</sup> Quoted from The Economist, May 27, 2010 ‘*The Banks Battle Back*’

<sup>77</sup> Ackerman A., Wallstreet Journal, April 5, 2011

<sup>78</sup> The information regarding GDP is from Slovic et all 2011(OECD Report in Bibliography) and the information relating to loan pricing is taken from Elliott (2010) see bibliography

**Figure 1: Alternative Responses to Increased Equity Requirements**

Initial Balance Sheet		Revised Balance Sheet with Increased Capital Requirements			
Loans: 100	Equity: 10 Deposits & Other Liabilities: 90	Loans: 50	Equity: 10 Deposits & Other Liabilities: 40	Loans: 100	Equity: 20 Deposits & Other Liabilities: 80
		A: Asset Liquidation		B: Recapitalization	
				New Assets: 12.5	Equity: 22.5
				Loans: 100	Deposits & Other Liabilities: 90
				C: Asset Expansion	

One possibility is shown in Balance Sheet A, where the bank “delevers” by significantly scaling back the size of its balance sheet, liquidating \$50 in assets and using the proceeds to reduce total liabilities from \$90 to \$40.

In Balance Sheet B, the bank satisfies the higher 20% capital requirement by recapitalizing, issuing \$10 of additional equity and retiring \$10 of liabilities, and leaving its assets unchanged.

Finally, in Balance Sheet C, the bank expands its balance sheet by raising an additional \$12.5 in equity capital and using the proceeds to acquire new assets.

Note that only when the bank actually shrinks its balance sheet, as shown in A, is the bank reducing the amount of lending it can undertake.

In both B and C the bank can support the same amount of lending as was supported by the original balance sheet.

In balance sheet B some liabilities are replaced with equity.

Admati et al and with Lord Turner (FSA Chairman) claim that the current equity requirements are simply insufficient. “If global regulators were benevolent dictators designing regulations for a banking system in a greenfield market economy, they would be wise to choose capital ratios far above even Basel III levels, something more like the 15 per cent to 20 per cent of risk weighted assets.”<sup>79</sup> However, crucially the end of his sentence must negatively affect my suggestion. RWAs and the Ratings Agencies (“the essential cogs in the wheel of financial destruction”) are *still* a part of the system and their influence has not been diluted by Basel III<sup>80</sup> with the advanced Internal Ratings Based Approach still in operation in most of the approved banks-since it did not change the risk weighting, Basel III effectively doubles down on Basel II. Banks need to hold more common equity than ever against these risk weighted assets thereby actually increasing the incentive to find low risk

<sup>79</sup> Quoted in Financial Times by B. Masters, Mar 16, 2011

<sup>80</sup> R Beales-*Ratings Agencies Keep their Influence*, Feb 1, 2011

weight assets with some return, since these can be leveraged much more highly than risky assets. Likewise, lending to AA rated sovereigns still carries a risk weight of 0 encouraging increased lending to sovereigns at the margins of zero risk weight. The Economist has sarcastically pondered as a result: “anyone want to guess where the next crisis will crop up?”<sup>81</sup> The macroeconomic impact in the short term may result in banks luring retail investors out of money market funds into deposits in order to shore up their capital ratios<sup>82</sup> which Jamie Dimon has stated will drive investors east to looser regulatory environments such as Singapore, who “can’t wait for us to do stupid things with derivatives legislation”.<sup>83</sup> Furthermore, if banks are to attract deposits what kind of trading risk behaviour are they going to engage in to justify the higher interest rates that they would offer instead?

**Problematic incentives** may not have been removed in Basel III and as Blundell-Wignall and Atkinson (2010, a) highlight the risk weight approach was developed in a time when credit markets were “incomplete” (it was impossible to go short in credit) which was changed by the CDS, banks transforming buckets of risk themselves through risky *derivatives* undermining the fundamental idea of capital weights<sup>84</sup>. “If regulations treat promises differently in different sectors, then with complete markets in credit, the promises will be transformed into those with the lowest capital charges” (2010a, p 5). But RWA changes have only really hit trading assets – particularly the kind of derivatives, such as collateralised debt obligations that allowed the financial crisis to take a grip. Many assets, including the kind of mortgage lending that underpinned many of those CDOs, remain largely unaffected by Basel III.<sup>85</sup>

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<sup>81</sup> Quoted in The Economist, Sep 13, 2010-The information leading to the quote is summarised from the same article *‘Third Time’s the charm’*

<sup>82</sup> S Johnson- *Basel III to Hit Money Market Sector*, May 8, 2011-The same article quotes Jean-Baptiste de Franssu, president of the European Fund and Asset Management Association “There is an incentive not to promote money market funds but to promote savings accounts. It’s about strengthening the balance sheet and anything that does not end up on the balance sheet they are less likely to sell” & Travis Barker, chairman of the Institutional Money Market Funds Association: “Regulators have the view that retail depositors’ money is more sticky and therefore is a more reliable source of funding than institutional money, including that provided by money market funds.”

<sup>83</sup> A Ackerman-*Jamie Dimon Says Regulation Will ‘Stifle’ Economic Growth*, April 5, 2011

<sup>84</sup> The Financial Times 2/5/2011 cautions that judgment can be a shortcoming, too. A test conducted by the UK’s Financial Services Authority on an anonymised sample of 13 banks showed a huge disparity in the key “probability of default” data. On one typical corporate loan, with an A minus credit rating, the most cautious estimate of the risk was 100 times greater than the most bullish. That translated into risk weightings ranging from 30 per cent of the value of the loan to 189 per cent. Multiply that kind of differential across the loan book and suddenly all the fine efforts of global regulators to set a unified capital standard of 7 per cent look rather hollow. As Andrew Haldane at the Bank of England has said, some reported capital ratios could be “several percentage points” higher than they should be. (P. Jenkins)

<sup>85</sup> P Jenkins Financial Times, 2/5/2011

As mentioned, the ratings agencies Moody's and Standards and Poor's are still in business as usual and remain embedded in the Basel infrastructure<sup>86</sup>. The only 'appropriate' (if the word is excessive) measure to prevent them repeating the past is a requirement that banks also verify the credit ratings issued by them. Surely this reinforces the already cosy financial relationship between these two prominent players? This seemingly was the only measure in Basel III to ensure that banks took any interest in the quality of the debt they were securitising which will probably not alter matters noticeably, but the advice services of the rating agencies remain to the banks.

**The Leverage Ratio** itself has been criticised for its shortcomings. Here I shall attempt to address these matters compiling the main issues and discussing them. As stated, I believe a leverage ratio on all assets (not considering any risk weight) is a step in the right direction though I am concerned that the relevant capital has not yet been decided upon and have likewise reservations about it functioning alongside a capital ratio (this also remains unspecified). If we are to look at the history of the Basel Accords, cases of political pressure on regulatory easing are abundant as there is an emergence out of a downturn which the figures since 2009 indicate<sup>87</sup>. I believe like others cited here that the risk weighting system and the fact that the same ratings agencies are still analysing the weights of the relative instruments are still the major issues with this round of Accords. The Leverage Ratio in contrast cannot be arbitrated downwards by managing the composition of assets on the balance sheet like its capital counterpart, which is its most favourable characteristic.

Blundell-Wignall & Atkinson (2010 b, pp 8-9) have pointed out that the introduction of a leverage ratio is ambiguous because the US have used it in the past relating to Tier 1 (common equity) and no existing European counterpart was employed causing disputes in the change process similar to those in the accounting world reflected in significant balance sheet differences between the IFRS and GAAP.<sup>88</sup>

1. The leverage ratio will be fluid for some time before it migrates to Pillar 1 as late as January 2018.
2. The committee's proposal began with recognising counterparty risk, market risks and gross exposure in December 2009. The industry successfully lobbied it to abandon such notions in favour of integrating off-balance sheet items such as derivatives by using the same Basel II formulae and methods that I have already criticised. This involves "netting" of derivative and

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<sup>86</sup> Kleinknecht in Seminar (2011) also could not comprehend how the media and more importantly the academic community have not voiced more criticism of this. Further research in this area would be welcomed.

<sup>87</sup> Bordo 2011b-see bibliography

<sup>88</sup> This is especially true in derivative and repo accounting though the problem is exacerbated when risk weights come into play.

repo exposures leaving banks active in this field with a much lower asset base for calculating requirements under the leverage ratio.<sup>89</sup>

3. Capital (as mentioned) measures have not been decided upon which strongly suggests that broader alternatives to tangible common equity have been under consideration-diluting the effectiveness of the leverage ratio further.
4. Unless the well-respected Pillar I status is attained, the ratio may become meaningless.

To me it seems disheartening that instead of having one effective instrument under Pillar I, two weaker instruments have emerged (one of which has yet even to attain that status) and estimates show that at 3% leverage ratios (the trial parallel run to begin in 2013) some banks will still be able to leverage to factors like 44 (ibid, p 28). The stress tests that were conducted on European banks in recent times were operating under the RWA System of Basel II as is still the case. Press reports often misrepresented these tests as requiring Tier 1 capital of at least 6% of assets, rather than RWAs!<sup>90</sup> As we have seen, RWAs are arbitrary and adjustable numbers likely to overstate assets in an upturn and understate them in a downswing and are not comparable/ standardized across banks if the methods used are different in each individual case, not to mention the differences in weightings themselves.

Furthermore, if the capital ratio (as has traditionally been the case) will receive excessive attention instead of the leverage ratio as we emerge from the crisis, there may be a tendency to push the latter aside thus leaving a still ineffective capital ratio as the sole guardian of banking stability when we have already seen that this is a potentially catastrophic approach to adopt under a RWA system. The Basel Committee seem to have 'divided and conquered' an already ineffective capital requirement into two less effective cosmetic props. The complexity in their calculation (and indeed the entire Basel II set up) remains, the lack of definition and clarity still pervades III, the extended time line (2019) undoubtedly allows for further lobbying and it appears that in the short term some banks can attain lower capital and higher leverage positions than was previously possible.

The **2.5% Capital Conservation Buffer** of top Tier 1 capital is the next issue I shall turn to. The purpose of this instrument is to ensure that banks maintain a capital buffer that can be used to absorb losses during periods of economic stress and the closer they approach the minimum requirement, heavier constraints are placed upon earnings distributions.

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<sup>89</sup> The same authors have shown on a balance sheet that Deutsche Bank under International Financial Reporting Standards (IFRS) (no netting) had total assets of €2,204 bill in 2008 but with Generally Accepted Accounting Principles/GAAP (with netting) the same bank had only €1,030!

<sup>90</sup> Ibid, p 17-the authors show that only 40% of the overall assets are RWAs of the 91 banks tested-overstating the stringency by a factor of 2.5. While the tests may reflect well on banks' asset quality, little light is shed on the adequacy of their capital to serve as a buffer to absorb losses since this was so rarely tested (p18, 2010).

The most obvious observation to me is the questionable necessity of such an item. There is scant commentary in the press and in academic journals<sup>91</sup> on this subject, which may reflect its perceived insignificance. Why not include the extra 2.5% in the original requirement? If regulators really believed that the new standard capital ratio was sufficient, what kind of message may be gaged by the market by introducing this additional mechanism? If a simplified Capital Ratio under Pillar I was employed with much higher and adequate levels of capital with no RWAs, then there would be no need for such a buffer as the higher levels would already be understood and acceptable to banks' creditors. In extreme crisis, the conservation buffer will merely become the first 2.5% of capital that flies from a bank's balance sheet so it may really make no difference to categorise it separately confusing lay observers unnecessarily.

**The Countercyclical Capital Buffer** constitutes the most significant macro-prudential element of the Basel III package (section IV therein). In assessing this we can draw on the expertise of Repullo & Saurina (2011) quite appreciatively as some of the quantitative tests and calculations they have conducted would have been beyond the scope of this broader research. A countercyclical instrument is more vulnerable to criticism as it is a new initiative in the Basel framework, but it should be stated here that attempts to address this aspect of Basel were absent before III and are an entirely welcome endeavour.

Beginning at a fundamental standpoint, the varying rate of 0 - 2.5% of risk weighted assets depending on national circumstances though necessary to accommodate varying cycles, may leave national supervisors open to the sort of domestic political pressures discussed earlier, especially where there is supervisory competition involved, compounded by the fact that no time frame for implementation has been specified. Also, I worry about the idea of using risk weighted assets when we know from experience that risk weights themselves can change dramatically in a downturn ironically reinforcing pro cyclicality as more capital must be stored against their deteriorating value.

Repullo & Saurina (2011) conducted a number of tests on the new countercyclical buffer which can help us analyse its shortcomings. As they note, the key macroeconomic variable which drives the behaviour of this buffer is the credit-to-GDP ratio with respect to its trend (HP Trend to be precise-computed with a smoothing parameter of  $\lambda = 400,000$  making it linear) which is called the Credit-to-GDP Gap (the difference between the ratio and the trend). It was very apparent that GDP Growth

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<sup>91</sup> Tellingly, Blundell-Wignall and Atkinson (2010 b) stated at the outset of their paper that they would duly address this buffer but then seemed to have forgotten to do so. Its lack of credibility is reflected by the absence of any real elaboration on it (both within the Basel III accord which uses abstract language to explain a relatively simple concept, the academic community and press) here also.

and the Credit-to-GDP Gap were negatively correlated<sup>92</sup> which means that the credit-to-GDP gap would tend to signal to reduce capital requirements when GDP growth is high and to increase capital requirements when GDP growth is low, contradicting the purpose of the instrument. Additionally, the Committee themselves have recognised that it may give misleading signals and is not ideal for use in the release of the buffer-so judgement should be exercised in the build-up phase and especially in the release phase. Not only does this go against what was prescribed earlier with regard to clear guidelines removing *discretionary judgement* from supervisors but it blurs the instrument into both pillar 1 and 2 now including supervisory oversight and complicating the manner of implementation. Furthermore, micro orientated supervisors concerned about bank failures will be reluctant to reduce capital in a downturn (at their discretion). The 2 major problems with the Credit-to-GDP Gap (ibid, 2011, p 14) are firstly that credit usually lags the business cycle and secondly the use of deviations of the ratio from the trend line increases the problem as it will take additional time before the ratio crosses the trend line.

The authors suggest instead using an indicator of real credit growth with GDP (positively correlated) as a measure of systemic risk build up, which would still lag the business cycle but would not suffer the additional lag of the deviations of the gap from its trend line-as this would be a purely rule based approach it would fall entirely under Pillar 1 and would not involve supervisory discretion. Not only would this approach enjoy transparency to investors and analysts alike, (the minimum capital requirements would retain the full risk-sensitivity of Basel III) but it would allow the capital charge curve to shift with the state of the business cycle. During expansions, minimum requirements would be above those based on point in time Probability of Default (PDs), contributing to slow the lending cycle and to encourage higher capital cushions and during recessions, the same requirements would be below point in time PDs, helping to support lending in downturns (ibid, 2011, p 33). They acknowledge that the specifics would have to be worked out as part of further research.

We can thus conclude that though efforts in counter cyclical instruments are welcome, it cannot be wholly observed that the Hippocratic dictum of “first do no harm” will prevail as the system is still based on the flawed risk weighting system, is lagged and is likely to increase pro cyclical (according to the mentioned study) by employing the Credit-to-GDP gap determinant. By allocating judgement to supervisors it does not address the issues already mentioned in relation to Pillar 2 and instead the instrument now involves two pillars whereas an effective straightforward signal would have removed supervisory discretion entirely enabling easier implementation.

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<sup>92</sup> Correlations were run on France, Germany, Italy, Japan, Spain, UK and US over the period 1986-2009



We can now turn to the **liquidity instruments** of Basel III as the last major area of 'micro' criticism of this round. I have already shown how liquidity would ideally be addressed via Goodhart's (2008) Preferential Access Scheme. Likewise, I have documented the misunderstanding of liquidity problems in the recent crisis. I did not believe that a liquidity instrument within Basel III could be effective unless it addressed the macro desirables of transparency set out above and the stigma problem of borrowing taken from Goodhart's (2008) revolutionary suggestion by standardizing the international framework. This has not happened. My opposition to a liquidity instrument is founded on the most fundamental flaw of the idea (stated across the literature) in that a liquidity reserve (if it must be held) is by definition illiquid or as Goodhart (2008, p 86) states "required liquidity is not true, usable liquidity." Blundell-Wignall & Atkinson (2010, p 13) add that "liquidity problems are little more than a messenger that delivers bad news and forces necessary restructuring or an end to operations" and so long as a bank is solvent, with adequate equity levels, management is responsible for cash flow and liquidity. We must recognise that exogenous factors such as contagion will sometimes threaten these banks as mentioned at which time a central bank could intervene to provide liquidity. I have thus proceeded that Basel III should not have introduced a liquidity requirement for banks- instead, what was suggested was a macroeconomic standardized change that it could have addressed under Pillar III (market discipline through promoting transparency compelling all national authorities to follow some form of minimal discount window policy as suggested in the PAS by Goodhart). It has not. Goodhart (2008, p 86) even states that principles of liquidity management should be applied in a much more discretionary manner, Pillar 2 rather than Pillar 1 and that "setting minimum levels without establishing an associated ladder of sanctions invites both forbearance and the occurrence of credit crunches." It has been added to Pillar I increasing the chasm in difference between the importance of this pillar and the other 2 pillars and definitions of liquid assets, let alone sanctions, have yet to be discussed. Indeed the definition of high quality of liquid assets may itself influence market behaviour in an 'unknown unknown' manner.

Instead it has opted for the Liquidity Coverage Ratio (LCR) to cover 30 day stress periods. This liquidity ratio Eubanks (2010, p 10) worried would furthermore "significantly reduce short-term funds needed to issue short-term debt securities, such as money market instruments and corporate and municipal bonds". Van den End (2010) is a bigger optimist and claims that by holding a higher stock of liquid assets, tail risk searching is reduced-as I have argued, because they are being held they are by definition illiquid. We already know that the problem was not 30 day liquidity shortages, but 90 days +. Why this has simply been ignored is a matter for further research as the 1 year Net Stable Funding Ratio (NSFR) attempts to address medium term funding. Without visible concern, Basel III has stated that the LCR "builds on traditional liquidity coverage ratio methodologies *used internally*

*by banks to assess exposure to contingent liquidity events*” and that the NSFR “builds on traditional ‘net liquid asset’ and ‘cash capital’ methodologies used widely by *internationally active banking organisations, bank analysts and rating agencies.*<sup>93</sup>” But if we know that most of these models were inadequate prior to the crisis, why has the Committee itself now institutionalised the banks’ own models in regulation? The regulators seemingly receive their processes of regulation in liquidity from the same regulated institutions that were at the core of the crisis.

As the final standard dealing with “**systemically important**” institutions has yet to be drafted in its entirety it is difficult and perhaps premature at this stage to anticipate its specific shortcomings. Like the counter cyclical instrument, attention to this aspect of economic behaviour should be welcomed. In order for a system of a higher level of standard capital or leverage charge to apply without risk weights, the ideally changed economic environment discussed in ‘macro desirables’ may be required which has the simultaneous effect of reducing the distortions of importance between Pillar I and the remaining 2 pillars. The ‘Too systemic to fail (or exist)’ problems mentioned above have been largely ignored by Basel III which instead focuses on Institutions which are systemically important requiring extra equity (level not yet specified and deadlines not prefigured).

Ironically it may be that rating agencies (which have remained almost unscathed by the regulatory response to the crisis) are the most significant, institutionalised or “systemic” force in the Basel framework though not in financial terms. As I mentioned, the problem might lie closer to the idea that the banking institutes that Basel III will target are too systemic to exist rather than fail. Nixon<sup>94</sup> has stated that as a result of recognising such systemic institutes by requiring extra capital, disclosure and liquidity reserves, the same banks may be perceived as being safer, concentrating the market further which is the opposite of what should happen. Additionally, if they are systemically important, they are likely to have large funds to pay staff with, thereby attracting the best minds to get around the regulatory requirements as was the case under Basel II.

One macro desirable which was politically easier to manage suggested more effective remuneration in realigning incentives for bank managers which could be sold as “tougher” to the lay public. Efforts were made under Pillar 3 (market discipline in this regard) resulting in a consultative document from the Basel Committee issued in December 2010. Attention to this feature of the recent crisis is welcome and should be commended before I proceed to analysis-the Basel Committee’s

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<sup>93</sup> Basel Committee on Banking Supervision, Basel III: International Framework for Liquidity Risk Measurement, Standards and Monitoring, Dec 10, Bank for International Settlements (p 3, p 25 respectively-italics mine)

<sup>94</sup> S Nixon-*Time To Ease Up on Regulatory Overkill*, Mar 2, 2011

document's<sup>95</sup> 6 pages give an extremely detailed list of the new reporting requirements. As I mentioned previously, regulation relating to compensation varies widely at national level and therefore Basel should set at least a specific minimum that all countries must meet in standards prohibiting certain practices across the board.

As the title of the document states, the application applies to Pillar III (market discipline). It falls under this pillar as the requirements will be read by market participants from reports which must be produced at least annually by each organisation under its scope. From a financial point of view, I question whether market participants will particularly care about the compensation culture within their banks if their investments are making excessive 'alpha' returns and it may even move more capital toward the riskier companies who promise higher returns, though increased transparency is long overdue nonetheless. I would question why this was not emphasised more under a Pillar II approach (supervision) since these remuneration strategies played such a large role in the recent crisis and I am concerned that investors will tend to overlook such small printed detail when making their decisions especially when overloaded with other perhaps irrelevant information<sup>96</sup>. The consultative paper also allows for some manipulation under "Disclosure Requirements" in that some banks will be exempt from disclosure "depending on the risk profile" and under "Frequency and Methods of Disclosure" a large degree of discretion is granted to the supervisor again in judging whether a bank has already made similar disclosures in accounting that can qualify as good as this new requirement. One then expects that the supervisors must have (as well as complex risk calculation analytical expertise required) extensive accounting, auditing and tax knowledge which may lead to similar misjudgements at supervisory level that preceded the crisis. This will tend to demand more from the supervisors.

An elaborate list of many types of key obligatory qualitative and quantitative disclosures comprise the end of the document, but perhaps the focus is misplaced and the effectiveness diluted in that the more questions to be answered, the more difficult it is to rank them in order of significance- it may be that "they're a step too far"<sup>97</sup>(Mullin). The same journalist blames the ambiguity and excessive detail on a lack of coherence and agreement across international lobby groups in the commenting process of legislation with some "spouting forth sanctimoniously and/or contradictorily"

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<sup>95</sup> Basel Committee on Banking Supervision-*Consultative Document; Pillar III Disclosure Requirements for Remuneration*, December 2010, Bank for International Settlements

<sup>96</sup> This is an often cited flaw of the Accounting/Auditing industry

<sup>97</sup> K. Mullin-*So Banker, How much Do you Get Paid?* Reuters, Jan 7, 2011

on what nature reform should take. The Institute of International Finance has “reservations about the proposed disclosure.... of the rather detailed quantitative requirements” and “information overload can often be overwhelming and counterproductive”(Abed, 2011). Though the IIF is a large group likely to resist regulation on behalf of the banking industry, some reservations on this perspective may be valid. If disclosure requirements are viewed excessive and irrelevant paperwork, then as the cycle turns upwards they are more likely to be justifiably phased out as burdensome bureaucracy or “regulatory overkill”<sup>98</sup>. If on the other hand a maximum of say 5 insightful tools (or a ‘battery of simple indicators’ as mentioned) were developed and could be interpreted as providing useful information to all actors involved, then lobby pressure in the years to come would meet stiffer resistance from regulators. Lastly and crucially, no penalties have been developed yet and no specifics have been laid down as to acceptable parameters within the qualitative section which again increases supervisory discretion. No supra national body of supervisors monitoring national supervisors as suggested earlier is forthcoming with the existing system remaining much in place.

## POSSIBLE REASONS FOR DIFFICULTIES IN REFORM

“There is nothing more difficult and dangerous, or more doubtful of success, than an attempt to introduce a new order of things in any state. For the innovator has for enemies all those who derived advantages from the old order of things, whilst those who expect to be benefited by the new institutions will be but lukewarm defenders. This indifference arises in part from fear of their adversaries who were favoured by the existing laws, and partly from the incredulity of men who have no faith in anything new that is not the result of well-established experience” (Machiavelli, *The Prince*, pp21-22).<sup>99</sup>

One issue which I found little or no complete body of work based upon (which along with many other paths of the Basel Framework which would prove an interesting topic for further research) is reasons *why* the system or regulations have not changed sufficiently and the political economy of regulation. Instead I came across a few limited suggestions from authors offering brief potential reasons for this stagnancy and I shall attempt to briefly collate and analyse them here as an aside.

King & Sinclair (2003, p 57) cite the ‘Theory of Redistributive Cooperation’ explaining the creation of international institutions by focusing on demand and supply. The demand comes from domestic interest groups that see an opportunity to capture rents from abroad (the US Credit Rating agencies

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<sup>98</sup> S Nixon, Wall Street Journal, Mar 2, 2011 ‘*Time to Ease up on Regulatory Overkill*’

<sup>99</sup> *The Prince*, Wordsworth Editions Limited 1997, Chatham, Kent, UK (original in 1513 for Medici)

and banks in higher rated sovereigns since Basel II) and supply is provided by politicians in the member states who view such institutions as a means of extracting wealth and redistributing it domestically. As I have stated already in this paper, the institutionalised power of the rating agencies-because it is now enshrined in Basel, because of the jobs it has created and because of the complementarities or sister industries that have developed around such ratings agencies work-was not addressed in Basel III. Indeed Moody's Presidents and Vice President have been publicly broadcasting their views on Basel III not dealing with "structural challenges"<sup>100</sup>, when the biggest structural challenge of all is possibly their own enshrined involvement in the process. Jobs and structures are not easily removable across different political structures where the incentives of Basel may benefit embedded countries much more than if matters changed. It is telling of how little change has been made that risk managers and Basel III specialists now being recruited are required to have "extensive Certified Basel II experience"<sup>101</sup> as a requirement and solely Basel III Certified Professional Associates (CPAs) will find it difficult without first having qualified in the former Accords.

From a national point of view, Germany has traditionally resisted higher capital levels which they feel would discourage lending to small and medium sized entities which make up the *Mittelstand* of their economy though I have already shown how Admati et al in a letter refute this. Tarullo (2008, p 281) discusses the "optimality gap" as a reason for the snail paced rate of agreement-this basically means that from a national point of view the regulations imposed by the committee will be perceived as inferior to those that would have been implemented domestically and each country must therefore be compensated appropriately for this gap.

Furthermore, political and lobby pressures domestically increased on the Committee as "legislators in both the US and the EU had woken up to the fact that arrangements they were expected to copy into national legislation were being negotiated by unelected officials. They started to intervene in the negotiations, encouraged by banks that sensed the wind was blowing in a direction they disliked"(Davies & Green, 2009, p 42). I have already presented briefly the SEC (exemption of Investment Banks) who Levine (2010, p 16) states were "wilfully blind to excessive risk taking" purposely eliminating "supervisory guardrails". Goldman Sachs and Citigroup have already shown growing confidence that the phase-in period for the liquidity requirements will be pressured away-

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<sup>100</sup> J Langton-'Basel III won't return Banks to their pre-crisis strength, warns Moodys', Investment Executive, May 5, 2011

<sup>101</sup> Basel III Association Newsletters - [www.basel-iii-association.com](http://www.basel-iii-association.com)

there appears to be a widely held view among many bank/broker players that both of these standards could be altered to their favour before the final rules are in place.<sup>102</sup>

But Pezier (2003) who questions the very viability of the committee for the same reasons of political economy, wonders why it is that the Basel Committee for Banking Supervision is in a privileged position to carry out the task of promoting knowledge about risk management when banks and other institutions (such as universities and professional bodies) strive to carry out research aiming at promoting knowledge in this field-this is similar to criticism of the IMF also.<sup>103</sup> Levine (2010, p 26) sees the answer more at a national level in response to the inevitable shortcomings of the Basel process due to the many parties that must compromise on agreement and suggests the “Sentinel” concept to overcome the “antidemocratic” arrangement where “a group of unelected regulatory officials...have a monopoly on the information and expertise necessary for making financial regulatory decisions” increasing the lack of accountability. Such a national sentinel would provide expert independent analysis on financial sector policies that would inform debate on consequences of introducing policies etc. He suggests recruiting highly skilled individuals through market based pay packages from both the academic and professional communities to enable it to attain public respect and its only power would be to acquire any information that it demands as necessary to properly evaluate regulation, making the information publicly available thereafter. Though this may be a step in the right direction at National level, such an institution has existed in the Republic of Ireland for many years called the Economic Social Research Institute (ESRI) whose recommendations and cautions were clearly ignored in recent years.<sup>104</sup>

The law of unintended consequences is a cornerstone of economics<sup>105</sup> and as Jablecki and Machaj (2009, p 325) highlight, blaming bankers’ greed is an easy explanation of the complex phenomenon that it is difficult to regulate away arbitrage as “capital-adequacy regulations are just one example of how difficult it is to regulate risk taking without redirecting it into other spheres of the financial system” just as certain tax laws will indirectly or directly encourage varying levels of activity across sectors. I propose here that combined with disagreements across the Basel Committee, lobby and interest groups, the fear of the unknown may be a somewhat justifiable reason for reservations about genuine reform. Is it better to tinker with a visibly flawed system than to induce revolution through an entirely new system of unknown unknowns? I have comfortably argued the latter in this academic research but it must be remembered that from the point of view and immense responsibilities of the initiators (the Basel Committee) who have the same human emotions of pride,

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<sup>102</sup> T Alloway-*How the Basel III Sausage Gets Made*, May 16, 2011 Financial Times

<sup>103</sup> Quoted in Moosa (2008, p 46)

<sup>104</sup> However, pay packages and authority were not enjoyed to the same levels as what Levine ideally suggests.

<sup>105</sup> S Nixon-*Time To Ease Up on Regulatory Overkill*, Mar 2, 2011

fear and stubbornness as all humankind, it may be preferable to abseil down the cliff rather than leap off it. This psychological theory may go a long way in explaining the reasons behind keeping the much criticised A-IRB calculation approach as it took 10 years under a barrage of criticism to enforce. No reform of the role of the supranational supervisor suggested by Tarullo (2008). This leaves both open to bullying, criticism and in the end 'regulatory capture'.

## CONCLUSION

"Experience, the name men give to their mistakes." (Oscar Wilde)<sup>106</sup>

In the course of this paper, I have tried to provide the reader with an economic history of the evolution of the Basel Accords and the stimuli they attempted to respond to through time. I have shown the unintended consequences that resulted from such regulatory moves and I have attempted by 'standing on the shoulders of giants' in the field to collate an ideal economic scenario encompassing the most relevant facets and recommendations of their works. I then divided the most attractive proposals into what I termed "micro desirables" (relating to specific requirements and concerned mainly with Pillar 1) and "macro desirables" (relating to broader idealistic scenarios concerned mainly with Pillars 2 & 3). I then presented Basel III against these and attempted to reveal its shortcomings under the original broad categories including excess securitization, asset prices, capital flows, insufficient liquidity, insufficient capital stores/ratios, rating systems failures, central bank ambiguities, pro-cyclical characteristics of regulation, some politics of the committee, regulatory arbitrage due to regulatory costs, inappropriate regulatory focus and problematic incentives. Through a variety of newspaper articles and limited academic journals, combined with my own insight after examining the primary sources of the Basel III Accords themselves I have attempted to shed light on the uninspiring nature of Basel III which should not provide us with much comfort in the coming years. As we have seen, pitifully few of the macro or micro desirables have been endorsed in the Basel III framework and where welcome attention has been initiated in new areas such as liquidity and leverage, compromise and inappropriateness have tended to 'divide and conquer' an already flawed system of banking regulation instead of addressing the major issues. Though I criticised Tarullo's (2008) compromising nature in his writings, perhaps I should give him some practical credit for trying to influence the committee at draft stage with less radical suggestions than I ideally suggest here with the help of others but the reality of the compromised ineffective nature of Basel unfortunately remains.

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<sup>106</sup> From his play '*Vera-A Drama in a Prologue and Four Acts*'. The Collected Works of Oscar Wilde-The Plays, The Poems, The Stories and the Essays,(1997) London: Wordsworth Editions

The complex calculations of the Capital requirement remain in place, the Risk Weighted Asset system will continue to create perverse incentives allocating resources in the economy to perhaps inefficient areas (the liquidity stress tests in recent times have been based on such arbitrary numbers), the problems of liquidity cannot be addressed by holding (by definition) illiquid assets in the ratio (the international stigma problem remains and nothing like the PAS has emerged), the leverage ratio though appearing to go in the correct direction suffers from many capital definitional problems which tend to delay agreement under the Basel Framework, and it is not yet clear how it shall function with the Capital Requirement as it has not yet attained Pillar I status, the inflated importance of which has unfortunately been increased under Basel III. The capital conservation buffer I have argued is a cosmetic tool and should simply have been added to the original total requirement. As I mentioned, if regulators were worried about unknown unknowns, then perhaps simply increasing the Capital charge to 20% minimum and disposing of the RWA system, would be a more understandable, simplistic and effective countermeasure in the short term than adding to Pillar I through the cumbersome liquidity and leverage ratios that will now consume time and resources adjusting them as they were devised in a pressure cooker environment of less than 2 years.

As Central Bankers themselves dominate the committee, there was a real opportunity to address macro-economic issues (which could have included the PAS) and the counter cyclical buffer attempts (but may fail) to address the pro cyclical nature of the Basel Framework through the use of the tool of the Credit-to-GDP Gap which the committee itself has recognised has flaws thus granting supervisors discretion in interpretation and corrective measures-the exact opposite of the macro desirables discussed earlier. It now encompasses two pillars and its complexity will ensure its failure as it will be difficult to measure and the measure has been found to exacerbate the problem.

Instead of the 'too systemic to exist' scenario I documented earlier in the paper being addressed, there is a danger that market concentration may actually grow as investors may perversely tend to view them as government guaranteed survivors, again in total contradiction to the 'macro desirables' discussed earlier. The same institutions compensation culture will change in the short term under Basel III where welcome attention has focused on this area. However, it is not clear how pay packages will be monitored by investors in the market place (it is questionable if they will matter at all as I have argued) who may shy away from examining the kind of detailed reports on remuneration suggested, instead of an effective credible limited amount of simplified indicators-as we have seen as we move out of the cycle the tendency is for less regulation as documented by Schon (1991) which would prove an interesting idea for further research with regard to the Basel Accords in relation to Schumpeterian theory.



Undoubtedly, the next crisis will expose the Basel Accords again for its shortcomings but likewise if the existing framework persists within the resilient yet as I have argued flawed macroeconomic environment in which it operates (supervision and market discipline) then the response to the next crisis will be as mute as the limp regulatory reaction to this one. To what extent has Basel III overlooked the problems associated with the original Basel I and II accords? The answer, as we have seen is almost entirely, with the few relevant efforts falling a long way short of appropriateness.

*“To kill an error is as good a service as, and sometimes even better than, the establishing of a new truth or fact.”* (Charles Darwin)<sup>107</sup>

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<sup>107</sup> Quoted in Cooper (2010)

## **GLOSSARY OF TERMS**

*Asset Backed Commercial Paper (ABCP)*- A short-term investment vehicle with a maturity that is typically between 90 and 180 days. The security itself is typically issued by a bank or other financial institution. The notes are backed by physical assets such as trade receivables, and are generally used for short-term financing needs.

*Bank Repo* ( a bank liability secured by government securities)-at the end of each day customer deposits are converted into overnight loans (in the form of a sale of T-Bills to depositors) to the bank who make loans to government securities dealers and the loan is repaid automatically in the morning with the overnight rate. Deposits in form of repos do not appear on Banks' balance sheets as they are considered a form of borrowing rather than deposit and are not subject to reserve requirements.

*Collateralized Debt Obligations (CDO)*- An investment-grade security backed by a pool of bonds, loans and other assets. CDOs do not specialize in one type of debt but are often non-mortgage loans or bonds.

*Counterparty risk*- The risk to each party of a contract that the counterparty will not live up to its contractual obligations. Counterparty risk as a risk to both parties and should be considered when evaluating a contract.

*Credit Default Swap*-allows a buyer to insure against the risk of a bond default and usually treated as a proxy for probability of default. Unlike the purchaser of insurance contract, the purchaser of a CDS does not need to own a chunk of the asset that was the subject of the bet. As Roubini outlines, anyone who bet that someone would default had every incentive to make this happen. Purchasing a CDS in this case "was akin to buying homeowners insurance on a house that you didn't actually own- and then trying to set fire to it" (p199, 2009).

*Interbank deposits*-the deposit of one bank at another and call loans repayable on demand of the lender.

*Credit Risk*- The risk of loss of principal or loss of a financial reward stemming from a borrower's failure to repay a loan or otherwise meet a contractual obligation. Credit risk arises whenever a borrower is expecting to use future cash flows to pay a current debt. Investors are compensated for assuming credit risk by way of interest payments from the borrower or issuer of a debt obligation.

*Derivative*- A security whose price is dependent upon or derived from one or more underlying assets. The derivative itself is merely a contract between two or more parties. Its value is determined by fluctuations in the underlying asset. The most common underlying assets

include stocks, bonds, commodities, currencies, interest rates and market indexes. Most derivatives are characterized by high leverage.

*Funding Risk*-The risk that funding will dry up and a firm will suffer critical cashflow problems

*Leverage*-This is the Ratio of capital to assets.

*Liquidity Risk*-The risk of assets being insufficient to meet liquidity requirements

*Loan-To-Value Ratio* -A lending risk assessment ratio that financial institutions and others lenders examine before approving a mortgage. Typically, assessments with high LTV ratios are generally seen as higher risk and, therefore, if the mortgage is accepted, the loan will generally cost the borrower more to borrow or he or she will need to purchase mortgage insurance.

Calculated as:

$$\text{Loan to Value Ratio} = \frac{\text{Mortgage Amount}}{\text{Appraised Value of Property}}$$

*Mark to Market Accounting*-Fair Value accounting, reflecting the value of the item on the balance sheet at market value on an up to date basis. The implications for financial institutions should be obvious-as assets may grow in value during an upswing, balance sheets' net worth will increase simultaneously, facilitating further credit (due to this inflation of paper value of assets) thus reinforcing purchases of more assets fuelling the cycle further until the inevitable collapse. On the downturn of the cycle as assets are sold simultaneously, balance sheets across the spectrum will deteriorate rapidly with the glut of assets suddenly offloaded on the market contributing to 'fire sale' prices.

*Model Risk*-The inherent risk that a model of calculation may be itself flawed.

*Non-Bank Bank*-The Bank Holding Company Act defined a bank as an institution that accepts checking deposits and makes commercial loans. Security firms found way into banking- nonbank bank. An institution like a bank except that it either does not accept checking deposits (Merill Lynch accepted insured time deposits) or it does not make commercial loans. (Kohn 2004)

*Off balance sheet banking*-banking activities that do not directly involve changes in bank assets or liabilities-increases bank leverage/increases banks' exposure to risk "but because loan does not appear in balance sheet, its equity to loan ratio is unaffected"(Kohn, 2004,p158-159)

*Overnight Eurodollar*-An overnight interbank loan involving a Eurodollar bank. Lends to a subsidiary moving money from one liability (deposits) to another (Eurodollar borrowings). (Kohn, 2004)

*Random Walk*-In short, random walk says that stocks take a random and unpredictable path. The chance of a stock's future price going up is the same as it going down. A follower of random walk believes it is impossible to outperform the market without assuming additional risk. The random walk theory is the occurrence of an event determined by a series of random movements - in other words, events that cannot be predicted

*Regulatory Arbitrage*- Some financial innovation can be explained by the desire of institutions to bypass the regulatory framework to which they are subject. For example, banks securitised their assets, obtaining ratings for them that the capital regulations equated with safety and then either keeping them on their balance sheets where their perceived lower risk enabled the banks to lend out more money; or moving them into “off balance sheet entities”(OBSEs), including SIVs which were unconstrained by capital requirements.

*Secondary Market*-A market in which previously issued securities are traded

*Securitisation*-A bank can pool assets such as mortgages (risk weight 50% under Basel I) and sell them to another entity which can repackage them as an Asset Backed Security (ABS). The bank receives cash, which it can either use to pay down its debt (diminishing its balance sheet) or to make even more loans (expanding its balance sheet). In either case, however the banks' balance sheet will no longer reflect the true amount of credit in the economy. (Def in Jablecki and Machaj, 2009)

*Subordinated Debt Price*-The price of the Banks issued debt- this special type of debt will be converted to equity when it falls under a certain level. This was discussed as under Contingent Capital Bonds.

*Structured Investment Vehicle (SIV)*-Off balance sheet entity allowing financial institutions to transfer risk of their balance sheets and permit exposures to remain mostly undisclosed to regulators; to improve liquidity of loans through securitization; to generate fee income; and to achieve relief from regulatory capital requirements. (Def in Jablecki and Machaj, 2009)

*Tail Risk*-A form of portfolio risk that arises when the possibility that an investment will move more than three standard deviations from the mean is greater than what is shown by a normal distribution. Such events are severely abnormal and an earthquake is often cited as an example.

**It should be stated here that most of the definitions above have come from my own understanding of these terms through reading (especially Kohn, 2004) and many others have come directly from investopedia.com definitions.**

## APPENDIX 1-REGULATORY COSTS

This is a simple example of fictional Regulatory Costs at Work within the Bank.

If bank XYZ, wants to fund company ABC a loan of €1,000,000 in working capital and it needs to keep an equity to loan ratio of 8%, this means that it must add €80,00 to its equity to the loan coming from new additional equity in order to provide the loan legally. The remaining €920,000 will have to come from additional deposits. Suppose the bank must also retain a reserve ratio of 10% on these deposits; 10% of these funds must therefore be deposited at the relevant central bank. To obtain net the €920,000 it needs to fund the loan, it calculates as follows  $\frac{920000}{.90} = 1022222$ , it needs to take in this larger amount of deposits. Of this amount, 10% or €102,222 will be added to reserves and the remaining €920,000 will fund the loan. The bank though must pay interest on the entire €1,022,222 of deposits of 5%. Its target return on equity is 20% and it must pay an additional premium of 0.23% on deposit insurance. The cost of funding the loan is

Equity Deposits	€80,000 x 0.20	€16,000
Deposit interest payable	€1,022,222 x 0.05	€51,111
Deposit Insurance	€1,022,222 x 0.0023	€ 2,351
Total		€69,462

Thus for the loan to be profitable to the bank, it will require at least a return of 6.95%.

## APPENDIX 2-BASEL METHODS OF CALCULATION AND RISK WEIGHTS

**Standardized Approach** to Capital Requirements from Basel I remained the same (see Figure 1 reproduced here for convenience) with some modifications in Basel II. Among the more important were the inclusion of an additional 50% risk bucket for corporate exposures, a preferential risk weight for exposures in the short term to other banks denominated in local currency, and the possibility that a bank or corporation could have a lower risk weight attached to it than the sovereign it was operating in/country of incorporation.

$$\text{Basel Capital Ratio} = \frac{\text{capital}}{\text{risk weighted assets}} = \frac{\text{capital (Tier 1+Tier 2)}}{\text{assets (weighted by credit risk)+credit risk equivalents}}$$

Tier 1/Core Capital = Issued and Fully Paid Common Stock, Disclosed reserves and retained earnings (unencumbered wealth) and must make up at least half of the 8% requirement. ***Under Basel II, the quality of this Tier 1 capital was allowed to decline and only 2% of the 4% Tier 1 capital required (in the 8%) needed to consist of common equity.***

Tier 2/Supplementary Capital=Undisclosed Reserves, revaluation reserves, hybrid debt instruments (e.g. convertible bonds, cumulative preference shares) and subordinated debt (all funds that are less like common stock and more like regular debt).

Source: Jablecki and Machaj (2009)

**Risk Weight Categories from Basel I** (In italics where modifications or additions occurred in Basel II). (Source Basel Committee 1988) in Tarullo (2008, pp57-60).

**0%**- cash, claims on central government and banks denominated in local currency and funded in that currency, other claims on OECD Countries, central governments and banks, claims collateralised by cash of OECD central government securities or guaranteed by OECD Central Governments.

**0, 10, 20 and 50%** (At national discretion)-claims on public sector entities excluding central governments and loans guaranteed by securities issued by such entities.

**20%**-claims on multilateral development banks and claims guaranteed or collateralized by securities issued by such banks, claims on, or guaranteed by banks incorporated in the OECD (or outside OECD with a residual maturity of up to one year), claims on non-domestic OECD public-sector entities, excluding central government, and claims on guaranteed securities issued by such entities and cash items in the process of collection. *Imposition of conversion factor for off-balance sheet commitments of less than 1 year*

**35%**-*For banks using the retail IRB approach, the risk weight attached to mortgages depends on the lender's historical loss experience, subject to downturn assumptions, which drives the internal risk*

*model. This can give rise to risk weights on mortgages well below 35%. As Tirole (2010) shows the weight allocated to some mortgage lending then was reduced from 50% (Basel I) to 35% meaning that the “capital requirement for banks was reduced by 30% in this sector of activity. This probably reinforced the already strong interest in anything related to housing mortgages.”*

**50%**-loans fully secured by mortgage on residential property that is or will be occupied by the borrower or that is rented. Basel I

**100%**- claims on the private sector, claims on banks outside OECD with residual maturity >1 Year, claims on central governments outside OECD, claims on commercial companies owned by the public sector, premises, plant, equipment and other fixed assets, real estate and other investments, capital instruments issued by other banks and all other assets.

**150%**-*new category added if rating agencies decide that assets are riskier than 100%*

**For information relating to Appendix 2 see Tarullo (2009) also**

## APPENDIX 3-BASEL II

### The Calculation of Capital Requirements

The general methodology used is that of Value at Risk (VaR) which represents the potential loss of an investor in respect of a portfolio of assets that can be exceeded only with some given probability (typically 0.1 to 0.5%) over some given time interval. The regulator estimates for each risk the amount of capital that will enable the bank to cover its losses over a determinate period (one year for credit risk), with a particular probability (99.9% for credit risk) assuming that future conditions turn out to be similar to past conditions. This can be seen as the standard approach.

### Measuring Credit Risk-Internal Ratings Based Approach

This approach draws on the asymptotic single-risk factor (ASRF) model and as an alternative to the Standard Approach (in which the regulator directly imposes weights intended to measure credit risk of a bank's various assets—a refinement of Basel I) offered interested banks the opportunity to use their own internal models (pending acceptance from the regulator). The regulator calculated the weights on the basis of

$$K = LGD \times N \left( \frac{G(PD)}{\sqrt{1-R}} + \sqrt{\frac{R}{1-R}} \times G(0.999) \right) - PD \times LGD$$

In this formula K designates the weights that enable the capital requirement to be calculated.

$$N(x) = \frac{1}{\sqrt{2\pi}} \int_{-\infty}^x \exp -\frac{t^2}{2} dt$$

Is the cumulative function of a standard normal distribution, LGD= Loss in event of default,  $G(u) = N^{-1}(u)$  is the quantile function of the normal distribution. R is the correlation between portfolio of loans and the macroeconomic risk factor, PD=Probability of default.

The internal models used by banks are then employed to flesh out this regulatory formula and to 1) **estimate the probability of default in the case of the “IRB Foundation”** (the regulator estimating the parameters), or 2) **the set of parameters PD, LGD, and R in the event of “IRB Advanced”**.

For the information in Appendix 3, see Rochet (2010) also



**APPENDIX 4-SECURITIZATION**

**(i) Balance Sheet of Bank full disclosure of all mortgages**

ASSETS		LIABILITIES	
Mortgages	\$100	Deposits	\$95
		Equity	\$5

Here we assume that the bank holds all of its mortgages on the balance sheet. With all of its mortgages visible, its total risk weighted assets are \$50 (because as we have seen above mortgages carry a risk weight of 50%). Its total Tier 1 capital (equity) is \$5 as seen above-Then the Basel Capital Ratio is \$5 divided by \$50 which = 10% (in this example) meaning that it is 2% higher than required.

**(ii) Balance Sheet of Bank which securitises \$20 worth of those mortgages**

ASSETS		LIABILITIES	
Mortgages	\$80	Deposits	\$75
		Equity	\$5

Here we see how the bank uses the Accord to change its balance sheet and increase its perceived capital adequacy. It has securitised (see glossary) 20% of its mortgages from the first example, so now this fraction of higher risk asset has been removed from its book. Its risk weighted assets decline to \$40 (50% of \$80), so the ratio produced by the same \$5 of equity capital increases to 12.5% (5\$/40\$). The bank can now choose to lend again in further mortgage loans with the \$20 it receives in securitization, or pay down its debt/deposits as in the above example. Better still it can buy securities with the cash rated AA or AAA-in this case it has exchanged a bundle of mortgages with a risk rating of 50% under Basel, for an asset with a risk weight of 20%, against which much less capital needs to be maintained!

**(iii) THE MECHANICS OF SECURITIZATION AND ITS MISPRICING**

<b>Mortgage</b>	<b>Probability of Default (PoD)%</b>
A	5
B	7
C	6
D	7
E	5

Taken from Goodhart (2010), these mortgages are subprime (hence the relatively high risk of default), the PoD in normal times of a prime mortgage borrower being as low as 0.003 per cent/per year. The PoD in normal times depend on accidents or ill luck forcing default on mortgages. Thus mortgage repayments importantly are *independent* of each other, so the aggregate probability at anyone time of total default is much less because of this independence in good times. The mortgages are pooled together and divided into 'tranches.' The bottom tranche where the default losses fall completely and first is known as equity/'toxic waste' tranche. The mezzanine tranche lies in the middle and the senior tranches at the top does not get hit for any credit default risk until all of the capital of the lower two tranches has been wiped out (explaining why risk on the latter are close to 0 with a triple AAA rating). "This is the magic of combining diversification with tranching the liabilities-that is, creating securities of different seniority. Put a sufficient number of sub prime mortgages together from different parts of the country and from different originators, issue different tranches of securities against them, and it is indeed possible to convert a substantial quantity of the subprime frogs into AAA-related princes, provided the correlation between mortgage defaults is low" (2010, p 134).

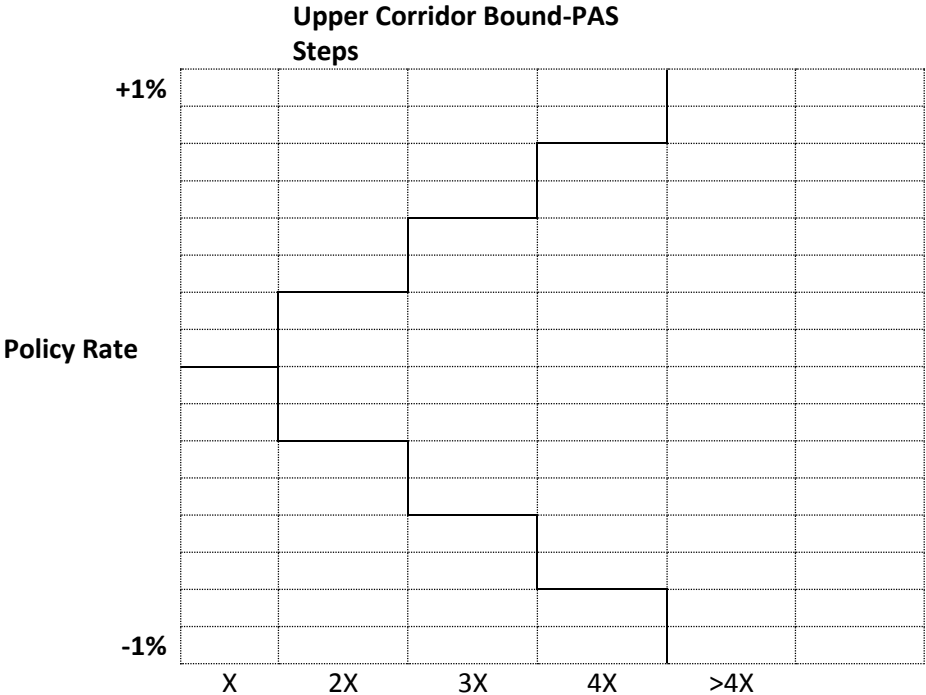
In non-normal times as when interest rates rise, correlation between mortgage defaults cease to be independent of each other and rise as well as defaults. Then the likelihood of significant credit losses on the tranches into which the original mortgages have been sliced will rise in a non linear (possibly exponential) way. But as Rajan (2010, p 134) notes, "no one really knew what that correlation would be in bad times" but the "fact that so many banks were exposed to the same diversified pools increased the likely default correlations"(p135). This complete and utter failure to anticipate

unknown unknowns was based on an assumption that normal times would continue-this time is different, hence the total mispricing of risk in respect to correlation.

**APPENDIX 5-LIQUIDITY-THE PREFERENTIAL ACCESS SCHEME**

Goodhart (2009, pp 70-74) suggests a simple but rather revolutionary approach to the stigma problem mentioned earlier. He concludes that the Bagehot dictum that central banks lend at a penalty rate always created a stigma and that what is needed is to induce all relevant banks (countries) to *always* be borrowing an initial tranche of funds from the central bank, reducing the stigma of borrowing at all.

The basic idea is to make the cost of borrowing from (or depositing with ) the central bank an increasing (decreasing) function of the scale of such borrowing (depositing), perhaps by having a series of , probably equally lengthened tranches, and possibly also a function of the duration of such lending. More fragile banks/countries would borrow from the higher tranches at a higher marginal cost-the author’s belief being that it would be easier to keep the marginal tranche/cost undisclosed rather than the act of borrowing at all. This would involve having tranches for each bank individually, as a percentage of their relevant deposits. The cost of the first tranche would be 0-the cost of borrowing from this tranche and the return on deposits at the central bank would be the same and equal to the policy rate. If a larger sum was desired than this initial tranche, the cost of borrowing into the second (third) could rise by 25 (50) basis points. If the scheme was symmetrical then the return on deposits at the central bank should decline in similar steps. Only after the 4 tranches had been used would it then proceed to the current corridor system discussed in this paper.



*The Preferential Access Scheme for Liquidity*

As Goodhart (2008) stresses, by increasing the size of each tranche (say in a liquidity crisis from 1 to 3%) the Central Bank could both signal and effect a major easing in liquidity. Similarly during a period of excessive liquidity, a central bank could both signal and effect a tightening of liquidity by reducing the tranches, say from 1 to 0.5%, or all the way down to zero. Crucially, all of this means that if Financial Stability Committees were given this focus, they could meet at the same time as the central banks to set the tranche percentage size until the next meeting giving them a public voice (signal) and an instrument, both of which they presently lack.

**APPENDIX 6-BASEL III CHANGES IN RULES AND STRUCTURE OF COMMITTEE**

**(i) BASEL III CHANGES-BASEL III ACCORD**

<b>Calibration of the Capital Framework</b>			
Capital requirements and buffers (all numbers in percent)			
	<b>Common Equity (after deductions)</b>	<b>Tier 1 Capital</b>	<b>Total Capital</b>
Minimum	4.5	6.0	8.0
Conservation buffer	2.5		
Minimum plus conservation buffer	7.0	8.5	10.5
Countercyclical buffer range*	0 – 2.5		

**(ii) FACT SHEET-BASEL COMMITTEE ON BANKING SUPERVISION (WITH BASEL III)**

**Functions**

The Committee provides a forum for regular cooperation on banking supervisory matters. Over recent years, it has developed increasingly into a standard-setting body on all aspects of banking supervision.

**Membership**

Senior officials responsible for banking supervision or financial stability issues in central banks and authorities with formal responsibility for the prudential supervision of banking business where this is not the central bank.

***Basel Committee Member Countries***

- |               |                |
|---------------|----------------|
| Argentina     | Korea          |
| Australia     | Luxembourg     |
| Belgium       | Mexico         |
| Brazil        | Netherlands    |
| Canada        | Russia         |
| China         | Saudi Arabia   |
| France        | Singapore      |
| Germany       | South Africa   |
| Hong Kong SAR | Spain          |
| India         | Sweden         |
| Indonesia     | Switzerland    |
| Italy         | Turkey         |
| Japan         | United Kingdom |
|               | United States  |

**Chairman**

Nout Wellink, President of the Netherlands Bank.

**Secretariat**

Secretary General: Stefan Walter, supported by a staff of 14.

**Frequency of meetings**

The Basel Committee usually meets four times per year.

**Reporting arrangements**

The Basel Committee on Banking Supervision reports to a joint committee of central bank Governors and (non-central bank) heads of supervision from its member countries (as listed above).

**Outreach**

The Committee maintains links with supervisors not directly participating in the committee with a view to strengthening prudential supervisory standards in all the major markets. These efforts take a number of different forms, including:

- the development and dissemination throughout the world of policy papers on a wide range of supervisory matters;
- the pursuit of supervisory cooperation through support for regional supervisory committees and sponsorship of an international conference every two years;
- cooperation with the FSI in providing supervisory training both in Basel and at regional or local level.

**Main subgroups**

- The Standards Implementation Group
- The Policy Development Group
- The Accounting Task Force
- The Basel Consultative Group

(iii) **TIMETABLE FROM BASEL III CERTIFIED PROFESSIONAL ASSOCIATION****Annex 2: Phase-in arrangements (shading indicates transition periods)**

(all dates are as of 1 January)

	2011	2012	2013	2014	2015	2016	2017	2018	As of 1 January 2019
Leverage Ratio		Supervisory monitoring	Parallel run 1 Jan 2013 – 1 Jan 2017 Disclosure starts 1 Jan 2015					Migration to Pillar 1	
Minimum Common Equity Capital Ratio			3.5%	4.0%	4.5%	4.5%	4.5%	4.5%	4.5%
Capital Conservation Buffer						0.625%	1.25%	1.875%	2.50%
Minimum common equity plus capital conservation buffer			3.5%	4.0%	4.5%	5.125%	5.75%	6.375%	7.0%
Phase-in of deductions from CET1 (including amounts exceeding the limit for DTAs, MSRs and financials )				20%	40%	60%	80%	100%	100%
Minimum Tier 1 Capital			4.5%	5.5%	6.0%	6.0%	6.0%	6.0%	6.0%
Minimum Total Capital			8.0%	8.0%	8.0%	8.0%	8.0%	8.0%	8.0%
Minimum Total Capital plus conservation buffer			8.0%	8.0%	8.0%	8.625%	9.125%	9.875%	10.5%
Capital instruments that no longer qualify as non-core Tier 1 capital or Tier 2 capital			Phased out over 10 year horizon beginning 2013						
Liquidity coverage ratio	Observation period begins				Introduce minimum standard				
Net stable funding ratio		Observation period begins						Introduce minimum standard	

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