

THE FUTURE OF INTERNATIONAL BANKING REGULATIONS IN RESPONSE TO THE FINANCIAL CRISIS OF 2007/2009: AFTER BASEL III THEN WHAT NEXT?

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Abstract

The financial crisis 2007-2009 will not be forgotten in a hurry because of its impact on the global financial system almost replicating the Great Depression. Major and causal factors contributed to the financial crisis, and this prompted the establishment of Basel III to contain the crisis. Basel III introduced improved capital and liquidity rules, but still could not contain the crisis. This leaves regulators with questions of how to prevent another financial crisis in the future. Evidences suggest that the financial market is evolving because of its complex and changing nature, and so are the international banking regulations (Basel I, Basel II and Basel III) that support the system in terms of maintaining economic and financial stability. It is clear that Basel III will not stop the next financial crisis even though the Basel accords continue to evolve in response to maintaining economic and financial stability, with the core purpose of preventing another financial crisis. Uncertainties lies ahead, and regulators cannot be sure of what will likely cause the next crisis, but indications suggest that the financial markets and international banking regulations in the form of Basel accords will continue to evolve.

Keywords: International Regulation, Banking, Basel, Crisis

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1. Introduction

The financial crisis dates back to Spain in the sixteenth century and France in the eighteenth. The financial crisis in Spain and France lasted a century.¹ Other nations in Latin America also experienced the financial crisis that resulted in defaults² of sovereign debts in 1820s with the exception of Argentina and Venezuela.³ In retrospect, the financial crisis is not a new episode as they have existed many times throughout history and it is as old as the market itself. This coincides with representation from the sixteenth century to the mid-twentieth century where sovereign

debtors defaulted in their debts, which evidently resulted in sovereign debt crisis.⁴

The financial crisis of 2007-2009 indicates that the financial markets has expanded, and become more difficult because banks became more radical by introducing complex financial instruments or products. The financial crisis of 2007-2009 was not as difficult as the Great Depression of 1929-1933 because of the actions taken by the Federal Reserve in the United States.⁵ Chapter one documents this including the rationality of the financial markets. The actions taken by the Federal Reserve helped to

¹ Harold James 'Deep Red – The International Debt Crisis and Its Historical Precedents' (Summer, 1987). *The American Scholar* 331, 334-336.

² Carlos Marichal 'A Century of Debt Crisis in Latin America: From Independence to the Great Depression, 1820 - 1930' (Princeton: Princeton University Press, 1989); Frank Griffith Dawson 'The First Latin American Debt Crisis' (Yale University Press, 1990)

³ For example, Venezuela had prepaid most of its debt before the Great Depression and did not default. Argentina sold of much of its gold reserves to service its national government bonds although it had to default on many of its provincial and municipal bonds.

⁴ Ross P. Buckley and Douglas W. Arner 'From Crisis to Crisis: The Global Financial System and Regulatory Failure' (2012) SSRN <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1980010> accessed 28 October, 2013.

⁵ To stem the crisis the Federal Reserve lent a total of \$1.1 trillion to various financial institutions. Four major banks – Barclays Group, Citi Group, Bank of America, and Royal Bank of Scotland borrowed \$233 billion. These Federal Reserve Programs were in addition to the U.S. government's Troubled Asset Relief Programs (TARP), which allowed the U. S. Treasury to insure or buy up to \$700 billion of trouble assets. There was also the American Recovery and Reinvestment Act of 2009 of about \$800 billion.

prevent the financial crisis from exceeding or equaling that of the Great Depression. The frequency of the financial crisis from the sixteenth century until the recent crisis of 2007-2009, have suggested that bank regulators have not easily remedied the situation, or visit the underlying systemic problems effectively. In response to the financial crisis of 2007-2009, Basel III came into force and it has not helped in addressing the problem of systemic risks. This suggests that Basel III may not be sufficient or appropriate to solve another financial crisis in the future. Regulators were continuously unaware of the transformation of the banking system, which use financial instruments to remain competitive. Naturally, the transformation of the banking system should have a corresponding rule or supervision for international banking that effectively counters any financial crisis, but because of the complexity of the financial market, it is always difficult if not hard to use one rule that will reduce the causes of the financial crisis.

Taking into consideration that one direction may not be effective in stopping the growth of another financial crisis because of the complexity and evolution of the banking system, chapter two of this paper will examine the Basel Accords, especially Basel I and Basel II because this paper will be incomplete discussing Basel III without referring to them. Basel II was in the process of implementation before the financial crisis of 2007-2009, which resulted in the introduction of Basel III. Chapter three of the paper commences with the financial crisis of 2007-2009 by identifying the root-cause and other causes of the crisis, the legal implications of the crisis, and the development of the crisis and spillovers. Chapter four focuses on Basel III for strengthening the macro-prudential system by introducing new capital and liquidity requirements, which have also evolved because of the complexity and variation of the banking system. Chapter five addresses the post-financial crisis with emphasis on measures to be taken to prevent another financial crisis such as the role of central banks and integrating macro-prudential policies. This section also focuses on development of the Basel Accords in response to the financial crisis before the conclusion closes the paper in chapter six.

2. The Road of Financial Stability

The regulation of the banking system is a continuing task. 'As financial markets expand, new and innovative products continue to develop; therefore, it is always difficult if not impossible to apply a "one size fits all" formula in regulation and supervision of international financial markets and institutions.'⁶ The history of the financial crisis has depicted similar

⁶ Uzma Ashraf, Irfan Munawar Gill, and Douglas W. Arner 'The Road to Financial Stability' (2011) Global Journal of Business Research, 5(5), 71-79, p. 71.

patterns of behavior such as poor implementation of financial regulations across the board between all sovereign states and taking appropriate proactive measures to anticipate the issues instead of reactive measures in advance, and before the crisis. To better understand the history of the financial crisis, it will be sufficient to compare the financial crisis of 2007-2009 with the Great Depression of 1929-1933, including the rationality of the financial markets.

2.1 The Great Depression versus Financial Crisis 2007-2009

The financial crisis 2007-2009 started in August, 2007 and developed into the worst financial crisis in the U.S. since after the Great Depression. The crisis started with anxiety with banks because of the impact on short-term money market instruments⁷ that investors refused to renew. This forced large financial institutions to raise funds by selling assets. Asset prices dropped, and the entire banking system was in danger of meltdown. This resulted in cutbacks in bank lending, loss of confidence, solvency of counterparties, cash hoarding, and concerns about liquidity. This contributed to the freezing of the credit markets, high unemployment rate, and decrease in total investment. The way the financial crisis was looming, it appeared that another Great Depression was approaching, but central banks resorted to extraordinary efforts to stabilize the economy. These efforts have been pivotal, and the recovery has been slow. Appendix A shows the financial crisis 2007-2009 in perspective.⁸

The Great Depression of 1929-1933 witnessed unemployment rate of 25 percent and a reduction in production of about 30 percent.⁹ Even though the financial crisis of 2007-2009 is one of the worst crises in the U.S. history, it was not as difficult as the Great Depression. The financial crisis 2007-2009 was not as difficult as the Great Depression because of the extraordinary actions taken by the Federal Reserve.¹⁰ The actions taken by the Federal Reserve helped in preventing the crisis from exceeding or equaling the Great Depression.

2.2 Rationality of the Financial Markets

Financial regulations have evolved from the time of the Great Depression to the financial crisis 2007-2009, and it will continue to grow, but perceived that financial regulations are largely dependent on the principles of self-correcting and fair trade principles.

⁷ In particular, sale and repurchase agreements and asset-backed commercial paper.

⁸ Lee E. Ohanian 'The Economic Crisis from a Neoclassical Perspective' (2010) Journal of Economic Perspectives, 24, 45-66.

⁹ Gary Gorton and Andrew Metrick 'The Financial Crisis of 2007-2009' (2012) SSRN <<http://ssrn.com/abstract=2003388>> accessed 28 October 2013.

¹⁰ *ibid* (n 5).

Financial regulations over the past few decades supported the hypothesis that markets are highly effective in allocating resources, self-correcting, self-policing, and rational.¹¹ However, the frequencies of the crisis from the Great Depression to the financial crisis 2007-2009 have witnessed the failure of this theory suggesting that markets offer symmetric information and thus act rationally.

The failure of this theory also proved that non-regulated and unregulated free markets can cause catastrophic threats on the smooth functioning of financial markets, and so warranting the need to have regulated frameworks.¹² For example, regulatory frameworks such as Basel I and Basel II were subject to this interpretation. Basel I failed to differentiate the risks under way for risk-weighting categories, and it failed to recognize risks through diversification. Basel II underestimates the risks in opportune times while overestimating them for nefarious times. 'It is often the carried forward mistakes and lapses in proper responses that serve as the breeding grounds for the next crisis.'¹³ In essence, most of the underlying causes of the financial crisis 2007-2009 that arose from the last crisis dated back to the reform of the U.S. financial regulatory system during the Great Depression. This further suggests that global regulatory approaches failed in laying foundations to avoid the next crisis but addressed the issues of the financial crisis 2007-2009 at a minimum. The frequency of the financial crisis indicates that financial regulators have failed in addressing the key systemic problems. This suggests that economic strength will continue to be an illusion because of the likely reoccurrence of another financial crisis.

3. Basel Accords – Historical Evidence

The collapse of the Bretton Woods International Monetary System after the World War II relates to the extraordinary development of the global financial markets. The economic growth and developments made banks more vulnerable, and interconnected with each other. This was obvious with the establishment of subsidiaries and branches on a global scale. This also resulted in the collapse of the fixed interest rate policy and the rapid liberalization of capital flows in the West.¹⁴ The global financial markets adopt new uncertainties emanating from interest rate risks, new capital and hybrid transactions as a result of increases in cross-border capital flows and floating exchange rates. This follows with excessive lending and

borrowing, which resulted in the interest rate hikes in U.S., characteristic that systemic risk is a factor which can cause systemic crisis. This intensified the collapse of large financial institutions such as Bankhaus Herstatt in Germany, and Franklin National Bank in the United States. The "Basel Committee on Banking Supervision hosted by the Bank of International Settlements (BIS), was constituted to fill in these gaps by G-10 Central Bank Governors for setting standards for global financial markets."¹⁵ The Basel Committee provided recommendations, and introduced the capital accords with the purpose of preventing another failure in the global financial markets.

3.1 Basel I

The Basel Committee approved the Basel Capital Accord under Basel I in 1998.¹⁶ Basel I determined average capital requirements for international banks and it provided for a tiered concentration of banks' capital, a risk development process and a minimum capital ratio of 8 percent to total risk weighted assets that banks had to stay in their balance sheets.¹⁷ The aim of the Basel Committee by introducing Basel I include strengthening the capital base of international banks. This will help in maintaining stability of the global banking network with a convergence of capital adequacy for international banks. The Basel I gained widespread appeal and confidence because of its lowest costs and relative ease.

Under the Basel I capital rules banks were to maintain at least 8 percent of the marriage of their risk weighted assets.¹⁸ The components of the capital accord are commission Tier 1 and Tier 2 capital requirements, and it is necessary to be conversant with the technicalities because Tier 2 has proven to be extraordinarily difficult. Appendix B provides the desired tier elements of the capital accord.¹⁹ 4 percent, which, is half of the total minimum capital requirement is the core capacity and is a picture of the Tier 1 component. The capital requirement is straight forward as 'risks were weighted according to a certain level of a relative riskiness of counterparties assets or off-balance sheet items.'²⁰

¹⁵ G-10 Central Bank Governors (1974) 'Communique' September, 1974.

¹⁶ 1998 was an important year in the supervision and regulation of the international financial markets.

¹⁷ Zoltan Sarkany 'The New Basel III Rules and Recent Market Developments' (2011) SSRN <<http://ssrn.com/abstract=2155112>> accessed 28 October 2013.

¹⁸ The 8 percent minimum capital of the aggregate of risk weighted assets was required after the Capital Accord full implementation since 1993.

¹⁹ Basel Committee on Banking Supervision 'International Convergence of Capital Measurement and Capital Standards' (1988) BIS <<http://www.bis.org/publ/bcbs04a.pdf>> accessed 28 October 2013.

²⁰ *ibid* (n 17), at 15. Five categories of assets riskiness were introduced: 0%, 10%, 20%, 50% and 100% depending on whether the counterparty was an OECD member (sovereign

¹¹ Heidi M. Schooner and Michael Taylor 'Global Banking Regulation: Principles and Policies' (2010) SSRN <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1853714> accessed 28 October 2013.

¹² Damian Paletta & Kara Scannell 'Ten Questions for Those Fixing the Financial Mess' (2009) *The Wall Street Journal* <<http://online.wsj.com/article/SB123665023774979341.html>> accessed 28 October 2013.

¹³ *ibid* (n 6), at 72.

¹⁴ *ibid*.

The recommendations of the Basel I accord were unable to stop the Asian financial crisis in 1997-1998, which historically laid the foundations for the unprecedented financial crisis of 2007-2009. In response to the Asian financial crisis, the Basel Committee introduced amendments to the capital accords by incorporating management and market risks. At this time, the Basel Committee including banking regulators realized that banks practiced more of universal banking because of the interdependence and connectedness of the operations of the financial markets on a global scale. This made them decide that the runs of one bank in one part of the world could cause the failure of other financial institutions in the rest of the world.

The loss-absorbency of capital in the case of bank's failure is more of the vital benefits of Basel I, and this feature to increase the banks' capital above the ordinary share capital.²¹ Despite this vital benefit of Basel I in terms of its capital assessment, it was not faultless, and this resulted in increased criticism. The Basel I was under attack even though the rules focus more on counterparty default and credit risk. The operational and market risk were lacking because of non-allocation with any weighting calculation for the minimum capital ratios for any bank.²² In summary, the Basel I under attack because (1) operational risk was lacking; (2) the risk weighting was mostly involving; (3) absence of collateralization was a bit of sense palliation, and (4) national supervisory authorities had broad discretionary powers.²³ These lapses, or gaps in Basel I resulted in the amendment through the Risk Amendment in 1996 (following the collapse of Barings) as it relates to market risk analysis such as prospects for off-balance sheet items and its adaptation to the operation and structure of financial markets. The Basel Committee did not stop its regulatory attempts here but started working on more adaptable-to-change mechanism, and risk sensitive approach that resulted in the introduction of more complicated rules known as Basel II.²⁴

3.2 Basel II

The introduction of Basel II by the Basel Committee in 2004 is as a result of its continued efforts to succeed in the lapses or gaps of Basel I²⁵ in the

regulation, and supervision of the financial markets with the purpose of improving the soundness and safety of the financial system. Basel II operated on three pillars; (1) capital adequacy, (2) market discipline, and (3) supervisory review through regular disclosures.²⁶ The changes of Basel II required implementation by the end of 2006, and the deadline for its implementation of the most advanced component was in 2007 respectively. The U.S. had difficulties in implementing the Basel II accord because it created distinguished capital assessments.²⁷ The reason of this paper is not to explain the details of Basel II but to identify the key elements that contributed to the introduction of Basel III during the financial crisis 2007-2009.

The Basel II rules are sensitive to high risk, and more risk premiums are useful in calculating the minimum capital requirements. The new operational risk component of the accord helps to close the gap because of the failure of internal control system, processes and staff corruptions. This further complements the supervisory analysis module and the market disclosure requirements of the Basel II accord. In general, the Basel II rules 'was kept flexible, innovative and adaptable to changing banking structures, operations and products,'²⁸ because the Basel Committee accorded banks with two basic approaches for calculating their capital requirements for credit risk. The approaches include a Standardized Approach. This method is useful in measuring credit risk with the assistance of external credit assessments, and the Internal Rating-based (IRB) approach, and this are subject to the approval of the bank's supervisors.²⁹ The IRB contains risk components such as exposure at default, effective maturity, probability of default, and loss given default.³⁰ The IRB approach is risk sensitive because banks can only estimate the creditworthiness of the borrower within their credit portfolio or business. Basel II is a function of Tier 1, and Tier 2, a supplementary Tier 3 capital to assert short-term debt, to meet suitably the capital requirements of the market risk as part of the regulatory capital. Basel II also created the study of securitization and this was lacking in Basel I.

proposal was internationally discussed later on. The third consultative paper on Basel II was introduced in April 2003 and stated the final modification for the proposed capital adequacy framework.

²⁶ *ibid* (n 22). Pillar I of Basel II concerns three types of risks (1) market risk, (2) credit risk, and (3) operational risk. Pillar II creates the supervisory review process and Pillar III includes market discipline. The capital requirements remained not less than 8 percent under the Basel II.

²⁷ George Walker 'International Banking' (Study Material, Queen Mary University of London, 2010).

²⁸ *ibid* (n 6), at 74.

²⁹ Stephen Valdez & Philip Molyneux 'An Introduction to Global Financial Markets' (Palgrave Macmillan, 2010), p. 40

³⁰ See Basel Committee on Banking Supervision 'International Convergence of Capital Measurement and Capital Standards. A Revised Framework' (2004) BIS <<http://www.bis.org/publ/bcbs107.pdf>> accessed 28 October 2013.

or a central bank or non-OECD entity) and the category of on/off balance sheets (for example cash, claims on central banks, claims on domestic public-sector entities).

²¹ Andrew McKnight 'The Law of International Finance' (Oxford University Press, Oxford, 2008), p. 63.

²² George Walker 'International Banking Regulation – Law, Policy and Practice' (Kluwer Law, 2001).

²³ Phillip Wood 'Law and Practice of International Finance' (Thomas Reuters (Legal) Limited, London, 2008), p. 409.

²⁴ *ibid* (n 6).

²⁵ In January 2000 the Basel Committee stressed the importance of an internal-rating based approach to the regulatory capital and a detailed guidance on disclosure proposal. In January 2001 the second consultative paper was prepared with new capital adequacy regime and the

Appendix C shows the difference between Basel I and Basel II as it applies to the minimum capital requirements. The arbitrary distinction between Basel I and Basel II is that the risk weight credit under the former depended on the category of counterparty, whereas the latter depended on credit quality.³¹

Evidently Basel II failed to prevent the financial crisis of 2007-2009 and its rules were under attack, especially for its complexity and for not covering the emerging markets in its scope.³² The structure of Basel II is weak because 'it remained ineffective in devising binding international standards in the regulations of financial markets and banks.'³³ On a positive note Basel II worked extraordinarily well advancing general agreement on the application of minimum standards in the regulation, and supervision of the financial markets. Though the standards were in place, it was not sufficiently harmonized across the boards suggesting that it lacked enforcement. These lapses or gaps in implementing Basel II, and insight in the adoption of supervisory guidelines contributed to the outbreak of the financial crisis 2007-2009. The financial crisis of 2007-2009 was a litmus test for Basel II, and the Basel Committee including banking regulators concluded that it was weaker than believed because it could not contain the crisis. Another factor that has hampered the effectiveness of Basel II is pro-cyclicality, which is one of the factors that exacerbated the financial crisis 2007-2009. Furthermore, the gaps and lapses of Basel II made it a short rule during the financial crisis because of the vigorous national credit risk suffered by the banks, which created pro-cyclicality, including the need to fix the quality and quantity of capital requirements.³⁴

Since Basel II could not contain the financial crisis 2007-2009 the Basel Committee including policy makers engaged in the modifying, and configuring both regulatory and supervisory structures of the financial market. This will guarantee across the board adoption, and enforcement, transparency and accountability by upgrading from

Basel II to Basel III. This paper will be incomplete without discussing the financial crisis 2007-2009 that led to the introduction of Basel III.

4. Financial Crisis 2007-2009

The financial crisis 2007-2009 cannot be forgotten in a hurry because of the harshness and relative size of the crisis including factors and events, which created aggregates of effects that contributed to the most devastating global financial crisis till date.³⁵ 'The crisis generally is considered to have begun in 2007, reached a critical point in 2008, and continues in 2009.'³⁶ The successive factors and events which created the aggregates of adverse effects as stated by the Basel Committee³⁷ is as a result of the excessive building up of on, and off balance sheet leverage in the financial markets. On a broad scope, this resulted in the reduction of the quantity and quality of capital. For this purpose of this paper, it is necessary to understand the financial crisis of 2007-2009 in order to avert another crisis in the future, or rather a prolonged memorable event. The relative debate of the financial crisis 2007-2009 will last for some time, with mixed reactions regarding the various causes.³⁸

The causes of the current economic crisis can be linked to both common factors that affected the last crisis and unknown factors that contributed to the recent crisis. The distinction between past crisis and the current crisis include the opaqueness of the financial markets and the severity of lack of financial information. Other distinctions include 'the greater financial complexity, and more interconnection among asset classes and part of the financial system, including increased international financial integration, and heightened importance of global financial players.'³⁹ This made financial institutions resort to increased leverage. This led to using short term funding sources, which created liquidity issues that relate to the evolution of the financial crisis. To have a better understanding of the contributing factors of

³¹ Irina Molostova 'Introduction to the Internal Rating Based Approach under Basel II' (2008) *Journal of International Banking and Financial Law*, 23. According to the author 'Risk weighting of credit exposures under Basel I depended on the category of counterparty, rather than its credit quality. Thus sovereign bonds were 0 percent risk weighted while all corporate loans were 100 percent risk weighted. This created arbitrage opportunities for maximizing return on capital by disposing of more expensive exposures to highly rated corporates and acquiring cheaper exposures to lower-rated sovereign.'

³² John Hawke, US Comptroller of Currency, 27th February, 2003. He stated that 'in my view the complexity generated in Basel II goes beyond what is reasonably needed to implement sensible capital regulation.'

³³ *Ibid* (n 6), at 74.

³⁴ Marianne Ojo 'Basel III and Responding to the Recent Financial Crisis: Progress Made by the Basel Committee in Relation to the Need for Increased Bank Capital and Increased Quality of Loss Absorbing Capital' (2010) SSRN <<http://ssrn.com/abstract=1680886>> accessed 28 October 2013.

³⁵ Marianne Ojo 'Preparing for Basel IV (Whilst Commending Basel III): Why Liquidity Risks Still Present a Challenge to Regulators in Prudential Supervision (Part II)' (2011) SSRN <<http://ssrn.com/abstract=1732304>> accessed 28 October 2013.

³⁶ Task Force on the Causes of the Financial Crisis 'The Financial Crisis of 2007-2009: Causes and Contributing Circumstances' (2009) SSRN <<http://ssrn.com/abstract=1647082>> accessed 28 October, 2013.

³⁷ Basel Committee on Banking Supervision 'Basel III: A Global Regulatory Framework for More Resilient Banks and Banking System' (2010) BIS <<http://www.bis.org/publ/bcbs189.pdf>> accessed 28 October, 2013.

³⁸ Charles W. Calomiris 'Subprime Turmoil: What is Old, What's New, What's Next,' paper presented at the Federal Reserve Bank Kansas City's Symposium 'Maintaining Stability in a Changing Financial System' (2008).

³⁹ Stijn Claessens 'The Financial Crisis and Financial Nationalism' (2009) CEPR <<http://www.cepr.org/meets/itm/2407/Claessens.pdf>> accessed 28 October 2013, p. 3.

the financial crisis 2007-2009, it will be worthy to describe the root-cause and other causes of the crisis, the legal implications of the crisis, and the development of the financial crisis and spillovers.

4.1. The Root-Cause of the Financial Crisis

To find the answer to any problem, it is best to resolve the root-cause, and this will also lead to other contributing factors to the original problem. The root-cause of the financial crisis 2007-2009 can be linked to mispricing in the giant credit default swaps, which was unregulated because the transactions were mostly over the phone.⁴⁰ This fundamental difference led to other causes of the financial crisis. 'Credit default swaps were actually fairly simple instruments in concept, merely mandating that one party paying a periodic fee to another to insure the debts of some entity (such as a specified corporation) against default for a particular amount of time like 5 years.'⁴¹ In essence, credit default swaps are debt security policies imposed on insurance contracts that escape regulation. This contributed to the astronomical growth of the unregulated market from \$900 billion in 2000, to over \$50 trillion in 2008 following the enactment of the state gaming laws by Congress in 2000.⁴²

One of the lapses of the credit default swaps or bond insurance contract is that it did take into account the systematic risk premium and default risk premium. The credit swaps only took into consideration the credit risk because there is no initial investment in debt by the insuring party. There are proper ways of calculating risk premiums⁴³ but many practitioners find it more comfortable, and convenient to use abstract mathematical models to estimate, and evaluate credit risk premiums. The importance of regular mathematical theories in estimating and evaluating credit risk does not take into account

human judgment, which relies on sensitive information despite that it helps in building historical data extremely well. These mathematical theories affect the investment decisions of the banking industry, and analysts consider them as the 'worse and useless'⁴⁴ particularly because the results have been devastating for financial institutions that adopt this approach. For example, AIG, which was a significant insurer for debts through credit default swaps, placed 'blind faith in financial risk models'⁴⁵ and this contributed to a large proportion of losses despite the event the company generated substantial profits in the earlier years preceding its collapse. Investors that invested in debt securities also relied on the credit ratings of rating agencies, such as Standard & Poors (S&P), and Moody's, and the mathematical models they use to determine, and evaluate confidence. Mathematical models do not take into account other items and possible factors. They use statistics to determine past relationship between debt defaults, and other variables. In essence, pure statistical approach does not factor in all possible factors relevant for a decent credit score, and any attempt to factor in more relevant variable may increase the likelihood of other modeling errors.

The mathematical risk model for most financial institutions has 'a tendency to underestimate the possibility of sudden large events,'⁴⁶ that are relevant for the financial markets. The tail of distribution is ideal for forecasting the defaults that have little resulting abilities of reoccurrence. The mathematical model does not take into account inter-related systemic risks⁴⁷ and they tend to make assumptions of market equilibrium, which is unrealistic. Financial institutions resort to statistical models that forecasted the future because of its accuracy in forecasting the past. This made financial institutions ignore the reality of the world, which links to human judgment.

Human judgment can blend so many variables, which is just an approximation of using generated and subconsciously effective algorithms.⁴⁸ This will help in reducing the tendencies of errors created by mathematical theories on the basis of unrealistic assumptions, 'that take into consideration only a subset of all the relevant variables, and that may be affected by recent spurious relationships which may not apply in future environments.'⁴⁹ Some

⁴⁰ Austin Murphy 'An Analysis of the Financial Crisis 2008: Causes and Solutions' (2008) SSRN <<http://ssrn.com/abstract=1295344>> accessed 28 October 2013. According to the author 'The pricing of credit default swaps, whose principal amount has been estimated to be \$55 trillion by the Securities and Exchange Commission (SEC) and may actually exceed \$60 trillion (or over 4 times the publicly traded corporate and mortgage U. S. debt they are supposed to insure). See also Ellen Simon 'Meltdown 101: What are Credit Default Swaps?' USA TODAY <http://usatoday30.usatoday.com/money/economy/2008-10-21-2778456512_x.htm> accessed 28 October 2013.

⁴¹ Austin Murphy 'An Analysis of the Financial Crisis 2008: Causes and Solutions' (2008) SSRN <<http://ssrn.com/abstract=1295344>> accessed 28 October 2013, p. 3.

⁴² PIA Connection 'Congress Exempted Credit Default Swaps from State Gaming Laws in 2000' (2008) PIA <<http://www.pianet.com/news/insurance-news/2008/congress-exempted-credit-default-swaps-from-state-gaming-laws-in-2000>> accessed 28 October 2013.

⁴³ Joe Callaghan and Austin Murphy 'An Empirical Test of a Stochastic Cash Flow Theory of Evaluating Credit' (1998) *Advances in Financial Planning and Forecasting* 8, 31-51.

⁴⁴ *ibid* (n 41), at 4.

⁴⁵ Gretchen Morgenson 'Behind Insurer's Crisis, Blind Eye to a Web of Risk' (September 27, 2008) NY TIMES <http://www.nytimes.com/2008/09/28/business/28melt.html?pagewanted=all&_r=0> accessed 28 October 2013 para. 11.

⁴⁶ Mark Buchanan 'Crazy Money' (July 19, 2008) NEW SCIENTIST <<http://www.newscientist.com/article/mg19926680.100-crazy-money.html>> accessed 28 October 2013.

⁴⁷ *ibid* (n 41).

⁴⁸ Gerd Gigerenzer 'Gut Feelings: The Intelligence of Unconscious' (Viking, New York, 2007).

⁴⁹ For example, soft information about borrower's capacity to repay that is difficult to communicate in mathematical model to the final investors of securitized loans is subject to

commentators have also stressed the fact that human judgment is subject to manipulation and biases, but obviously with or without human judgment, financial models of credit risk will still be subject to manipulation either fraudulently or legally. In retrospect, human judgment is more effective in detecting, and avoiding biases in a standard controlled financial institution than mathematical theories that are subject to manipulation.

4.2 Other Causes and Contributing Factors of the Financial Crisis

The causes of the financial crisis 2007-2009 vary. To a large extent, there is no one reason to be blamed. Rather, the crisis was a buildup of contributing factors and interrelated causes that evolved in complex ways and linked to the financial history before the crisis.⁵⁰ The causes of the financial crisis include root causes as well as aggravating circumstances or factors that led to the crisis.

The mispricing of credit default swaps largely influenced the current mortgage crisis. The subprime mortgage crisis that triggered the financial crisis was not enormous thereby resulting in house prices rising.⁵¹ As house prices stopped escalating, the mortgages obtained by investors experienced losses, because of securitization.⁵² The lack of emotional judgment and the substantiation of the model inputs also contributed to the mortgage crisis. Mortgage brokers were more motivated by commissions they earn from the loan origination that they offer investors, or owners who used collateralized debt obligations or CDOs.⁵³ Investors accepted the mortgage backed securities because of its protection

manipulation by lenders seeking origination income. The modeling predictions at the credit rating agencies themselves (such as S&P and Moody's) have, at least recently, been biased toward granting higher ratings than merited in order to compete for revenues from the debtors who pay to be rated, and the result has been a colossal failure. See Uday Rajan, Amit Seru & Vikrant Vig 'The Failure of Models that Predict Failure: Distance, Incentives and Defaults' (2010) SSRN <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1296982> accessed 28 October 2013. Treasury Secretary Timothy Geithner stated, 'No crisis like this has a simple or single cause,' Wall Street Journal, March 23, 2009. Geithner added, to sum up the situation, 'but as nation we borrowed too much and let our financial system take on irresponsible levels of risk.'

⁵⁰ Treasury Secretary Timothy Geithner stated, 'No crisis like this has a simple or single cause,' Wall Street Journal, March 23, 2009. Geithner added, to sum up the situation, 'but as nation we borrowed too much and let our financial system take on irresponsible levels of risk.'

⁵¹ *ibid* (n 9). This crisis was connected to the subprime mortgages, a relatively new kind of mortgage that was designed to make home ownership available to lower-income people, but which depended on house prices rising for its efficacy. See Gary Gorton 'Slapped by the Invisible Hand: The Panic of 2007' (Oxford University Press, 2010).

⁵² Securitization means the pools of mortgages had been sold into the capital markets through bond linked to the pools.

⁵³ *ibid* (n 46).

against losses from the default by insurers like AIG through credit default swaps despite its uncertainties.⁵⁴ Since investors did not undertake any type of risk, most mortgages were subject without proof of income or with no deposit.⁵⁵

Other factors contributed to the financial crisis, including regulatory gaps, and lapses in supervisory oversight, a global credit gap, and low interest rates⁵⁶ and the interconnectivity and complexity of financial institutions. Others include excessive leveraging by consumers⁵⁷ and financial institutions,⁵⁸ market-to-market accounting rules that misconstrued the balance sheet of banks in a pro-cyclical way, and substandard risk management, and corporate governance within financial institutions. Other underlying causes were running related, and they include government forces, and social and economic policies that contributed to the unforeseen factors that created the financial crisis.⁵⁹

The factors that led to the financial crisis embody a series of events of direct causes, and occurrences. The main causes and occurrences of the financial crisis include too many loans with blemished credit standards,⁶⁰ subprime and innovative mortgages,⁶¹ unregulated mortgage originators,⁶² securitization of mortgages,⁶³

⁵⁴ *ibid* (n 45).

⁵⁵ *ibid* (n 46).

⁵⁶ Investors, home buyers and home owners were encouraged with low interest rates to refinance and borrow against their properties and this resulted in excess credit flows into the U.S. economy and developing countries including oil exporting nations with excess savings. The Monetary Policy introduced by the Federal Reserve could not counterbalance the effect of excess credit.

⁵⁷ Consumer protection laws made consumers comfortable with consumer loans while government programs made consumer credit cheap, affordable, and accessible, encouraging increased levels of consumer debt and spending.

⁵⁸ Investment banks were among the largest purchasers of mortgage-backed securities and the most leveraged. The largest firms Lehman Brothers and Bear Stearns leveraged their capital 30 to 1 or more.

⁵⁹ *ibid* (n 36).

⁶⁰ The most central cause of the financial crisis was the approval of too many mortgages that with imperfect unrealistic assumptions and credit underwriting about the taking into account the rising home prices and repayment.

⁶¹ Many mortgages were approved with subprime credit or without appropriate credit analysis or proper documentation to support the loan. During the 2000-2007, subprime mortgages grew by 800 percent and, by the end of this period, 80 percent of these mortgages were being securitized. See Garry B. Gorton 'The Subprime Panic' (2008) National Bureau of Economic Research Working Paper No. 14398.

⁶² Many of the mortgage firms that originated these loans operated free of Federal Reserve oversight and engaged in practices not generally permitted for federally regulated lenders.

⁶³ The securitization process transferred most of the risk of mortgage lending from loan originators to investors who bought securities backed by the loans.

government policies encouraging borrowing,⁶⁴ mortgage fraud and abuse,⁶⁵ and the need for mortgage-backed securities.⁶⁶ Other likely causes and occurrences include imperfect credit ratings,⁶⁷ complex financial products,⁶⁸ moral hazard, and uncertainty and anxiety,⁶⁹ amongst others. The financial crisis had time factors as well as the unforeseen factors that did not contribute to the crisis.

4.3. Causal Factors that did not contribute to the Crisis

Evidently the bank regulatory framework did not contribute to the financial crisis. 'As noted, above, there were weaknesses in the prudential oversight of the banking organization that, along with other factors, undoubtedly contributed to the severity of the crisis.'⁷⁰ The absence of systemic administration enclosing all sectors of the financial markets obstructed the regulator's ability to prepare beforehand and respond to the financial crisis effectively. In essence, it will be safe to report that the weakness of the bank regulatory framework did not cause the financial crisis.

Taking a closer look, the bank regulators did not anticipate all the unforeseen factors that contributed to the crisis, but instead they took measures to respond to the causes that they could call. For example, regulators in the U.S. introduced the promulgation of real estate lending standards, which was not authoritative and efficient as the regulators anticipated or timely enough.⁷¹ In essence, the underlying factors that contributed to the financial crisis include banking policies the supervisors had no control over. In the same vain, banking supervisors did not have control over global economic forces at work or competitive factors in the financial markets.

⁶⁴ Government policies were designed to encourage borrowers to take out mortgages to subsidize the availability of mortgage credit and to expand home ownership.

⁶⁵ Mortgage fraud occurred by borrowers who falsified credit qualifications and mortgage brokers who engaged in fraudulent and predatory lending practices in violation of consumer protection laws.

⁶⁶ Mortgage-backed securities were in demand by investors because they carried a yield higher than what was obtainable on Treasury Bills in the low interest rate environment and they were considered safe.

⁶⁷ The credit rating agencies relied largely on mathematical risk models and assumptions that later proved inaccurate, and did not take liquidity risk into account.

⁶⁸ The government's rescue and subsequent takeover of Freddie Mac and Fannie Mae created uncertainty and further moral hazard.

⁶⁹ Uncertainty and panic in the financial markets was extensive and buried counterparties of large financial institutions with substantial exposures to mortgage-related assets.

⁷⁰ *ibid* (n 36), at 34.

⁷¹ The Federal Deposit Insurance Corporation Improvement Act of 1991(12 U.S.C § 1831p; see also, 12 U.S.C. § 1828(o)) required the banking regulators to adopt rules for bank real estate lending but regulators adopted standards instead. The standards did not apply to mortgages originated for sale. See for example, 12 CFR, Part 34, App. A (OCC).

The duty of the Federal Reserve is to control monetary policy, and it is not the responsibility of the bank to govern the financial markets.

Another factor that did not cause the financial crisis is regulatory arbitrage. 'Arbitrage from one banking regulator to the other did not cause the crisis.'⁷² For example, regulatory arbitrage would have been possible when Countrywide converted from a national bank to a savings association. Countrywide's principal business model functions as an aggressive funding of mortgages with credit lines and short-term commercial paper, which later became systematically harmful before it converted to a savings association rules in March 2007.⁷³ The collapse of Countrywide started in August, 2007. The task force responsible for Countrywide's investigation found that the banking institution was still a national bank in the beginning of 2004. During this time, the idea engaged in diversifying its financial products into more risky models, and became deeply buried in the subprime lending.⁷⁴ It was clear that arbitrage did not cause the collapse of Countrywide. Recent years have witnessed the change from state bank to national banks by many banks.⁷⁵

Money market mutual funds also did not cause the financial crisis. Money market funds remained strong during the financial crisis, and provided a means of introducing liquidity to the commercial paper market. The financial crisis subverts provisionally the money market funds, and this necessitated the need for liquidity from the government to raise funds. In addition, insurance activities did not cause the financial crisis even though insurance companies such as AIG participated in credit default swaps without charge and adequate capital. The credit default swaps and not the insurance increased the severity of the financial crisis.

⁷² *ibid* (n 36), at 35.

⁷³ See OCC Conditional Approval No. 900 (April 23, 2009), p. 4 (describing Countrywide's charter history); Office of Thrift Supervision, Order 2007-08 dated March 5, 2007, approving Countrywide's conversion from a national bank to savings associations.

⁷⁴ *ibid*. Countrywide's adjustable rate mortgages, which had accounted for 21 percent of the company's loan production in 2003, accounted for 52 percent of loans made in 2004. Origination of the subprime loans increased from 4.6 percent in 2003 to 11 percent in 2004. The subprime loans were much more profitable to the company, with profit margins on subprime loans of 3.64 percent versus 0.9 percent for prime loans in 2004. The introduction of these new products, along with relaxed lending standards, enabled Countrywide to become the nation's largest mortgage lender by the end of 2004, originating 12.7 percent of all mortgage loans; by 2006 its market share had increased to 16 percent.

⁷⁵ For example, in 2006 Citigroup converted \$174 billion in assets from two its thrift subsidiaries into its national bank.

4.4 How the Financial Crisis Could Have Been Averted

It will be difficult to discover whether the response by the government could have averted the financial crisis. The outcome of the financial crisis would have been different if government responded to the crisis on time with greater regulatory and legal protections, such as stricter credit underwriting standards, regulation of mortgage markets, greater transparency and investor power, and extensive systemic administration.⁷⁶

More effective enforcement and monitoring of the mortgage credit underwriting standards may have prevented the financial crisis right at its source. This would have prevented mortgage originators and banks from making so many loans based on insufficient documentation or overly optimistic repayment assumptions. In essence, this would also protect against borrowers that could not realistically meet their repayment obligations. This would have reduced the housing bubble during the financial crisis.

The financial crisis may not have occurred if the regulation of the mortgage markets were under the ambit of a coordinated national strategy that supervise, and watch all mortgage markets.⁷⁷ The coordinated national system would have enforced stricter credit underwriting standards on mortgage originators and buyers. This strategy will also help in regulating mortgage banking sales practices uniformly, and this would also help in disclosing and identifying the risks related to securitization of mortgage loans. 'A national mortgage regulatory scheme also could have mitigated subprime lending, and other forms of irregular lending not suitable for certain borrowers.'⁷⁸

The immense transparency in the location, and the nature of risks associated with mortgage-backed securities including related financial products may have led to more constrained investor demand for subprime mortgage, and better risk assessment. This will also help enhance investor rule, and this would have prevented the realization of the financial markets and the collapse of financial institutions. Sound management of federal credit agencies would have led to improved credit score that required a more severely accurate information and analysis of the basis of ratings designated to mortgage-backed securities, and other complex securities. This will also help boost investor rule. This discipline would have also extended to banks by preventing them from purchasing risky securities for themselves and their customers, and encouraging them to engage in a thorough credit analysis.

A comprehensive systemic management system enclosing the financial system would have helped in

providing more appropriate responsive measures and adequate warnings of the financial crisis. 'No single government entity had the ability to obtain appropriate information from the full range of financial services firms and to analyze it on a consolidated, systemic basis.'⁷⁹ A comprehensive systemic supervision system will help the regulator in taking appropriate responsive measures and better predict the crisis. This would have provided an early warning signal leading to the buildup of the severe systemic risks that led to the financial crisis.

4.5. Measures Taken During the Financial Crisis

Government interventions in response to the financial crisis include emergency measures such as government bail-outs, central bank financing, and macroeconomic measures.⁸⁰ Government bail-outs, mainly of banks includes taking over of troubled banks by stronger banks,⁸¹ capitalization of banks,⁸² outright nationalization,⁸³ funding guarantees,⁸⁴ asset insurance,⁸⁵ establishment of asset purchase companies,⁸⁶ and deposit guarantees.⁸⁷ The bail-out measures introduced by government came with a cost to taxpayers, the competing policies of preventing moral hazard, and legal problems relating to shareholder rights.

The central bank provided funding to the bank and other financial institutions, usually supported by collateral. Banks offered facilities for longer term, and this created a broader difference between security, and the type of banks eligible for such facility.

The micro-economic measures taken include the reduction of short-term interest rates by the central

⁷⁹ *ibid.* For example, the Federal Reserve, which considers systemic oversight part of its responsibility, failed to anticipate the scale of the housing bubble or the looming consequences for the global financial system.

⁸⁰ Phillip R. Wood 'Legal Impact of the Financial Crisis: A Brief List' (2009) *Capital Markets Law Journal* 4(4), 436-450.

⁸¹ Government grants official authorization, official encouragement and arm-twisting. They also provide government finance, competition law obstacles, and waiver of state aid to facilitate the takeover of troubled banks.

⁸² Government subscription is used to capitalize banks by converting subordinated debt or equity, or preference shares.

⁸³ Government acquires the share of the bank, either under existing legislation or under new emergency legislation.

⁸⁴ Government guarantees issues of debt securities by banks. Often the bond issues would be up to three years and would be zero-rated under Basel II for banks who invested in them.

⁸⁵ Government agrees to insure classes of loan assets to be of doubtful recoverability. In this case, the government typically charged a fee and imposed management controls. The bank typically had to bear some portion of the losses.

⁸⁶ The banks transfer distressed loans to the asset purchase companies established by government. The transfers may be paid for by the issue of government securities to the selling bank which improves the bank's liquidity.

⁸⁷ In this case, government guarantees that banks would pay depositors.

⁷⁶ *ibid* (n 36).

⁷⁷ *ibid.*

⁷⁸ *ibid* (n 36), at 38.

bank,⁸⁸ quantitative easing by increasing the supply or amount of money,⁸⁹ foreign exchange intervention,⁹⁰ fiscal stimuli,⁹¹ and central bank currency swaps.⁹²

4.6. Evolution of the Financial Crisis and Spillovers

Underlying casual factors, and conditions that intensified the crisis underpin the financial crisis from history. The factors that intensified the crisis are the mortgage markets and overextending homes in the US. The source of the crisis is the US subprime mortgages, which extended into the US housing market and spilled over into the US financial markets, such as the asset-backed securities. The phase of the spillover on the global scale commenced with an astonishing amount of speed. The first phase of the spillover witnessed the banks with direct exposure to the US financial markets including other selected commercial markets subvert, in terms of liquidity runs. The second phase of the spillover witnessed the international transfer of spillovers through the stock market declines, freezing of credit markets⁹³ and liquidity shortages, and this affected other financial markets such as the Swiss Franc, UK Sterling, and Euro.⁹⁴ The third phase of the spillover started in October 2008. This witnessed solvency problems affecting leading global financial institutions that were systematically moving. This resulted into the risk of a financial meltdown that led to massive selloffs. The fourth phase of the spillover resulted in economic slowdowns around the globe, intensified in part by financial downsizing.

The evolution of the financial crisis relates to the growth of banks in the financial markets and the development of the mortgage markets. The history of the financial crisis shows the evolution of banks in response to technological innovations and

competitive influences. These influences contributed to the complexity and interconnectedness of banks, which made them run on complex financial products and also serving traditional banking customers at the same time. The growth of banks was a natural result of the response of commercial banks to the competitive challenges from insurance companies and securities firms to feed into an established customer base of the banking industry, thereby competing for market share. For example, in the 1970's securities firms were offering attractive alternatives to business loans and deposits.⁹⁵ The insurance services extended their service offering into financial products⁹⁶ and these evolutions made banks offer similar competitive financial products, with the permission of banking regulators.⁹⁷ This made banks maintain their regular customers, and their fair share in the banking industry. The financial crisis 2007-2009 proved that regulators and banks were too optimistic about their ability to pull off the shift from traditional banking activities to complex financial institutions, operating in non-regulated markets. The crisis came about at the evolution of the banking system in partnership with the evolution of the mortgage markets contracted by affordable and secure home financing through innovative and complex financial product. The evolution incites the goal of government home ownership policies with the purpose of expanding the home financing company and making it possible for more Americans to own homes.

The causal factors of the financial crisis are interrelated with housing finance, which puts into perspective the rise of the mortgage markets to understand the main causes of the financial crisis. The evolution of the mortgage market witnessed changes such as the replacement of the traditional "originate-to-hold" model with the "originate-to-distribute" design and the securitization of mortgages.⁹⁸ The originate-to-distribute model depended on and led to the securitization of loans. Securitization accorded

⁸⁸ Interest rates in some countries reduced to zero or near zero and sometime have in effect been negative.

⁸⁹ This is equivalent to printing of money. Technically, the central bank can increase the supply of money by telling the banks that the central bank owes them a few billion, just like that, but normally the main method followed is for the central bank to buy securities and pay for them by crediting the seller with the purchase price created out of nothing.

⁹⁰ The central bank buys its own currency with its reserves of foreign currency in order to maintain the value of the national currency.

⁹¹ These programs involves guarantees of funding businesses, tax reductions, subsidies, loans to businesses, increases in government expenditure, and improvement of unemployment protection.

⁹² Central banks swaps their currency for other national currencies so that other central banks would have more reserves in desired foreign currencies in order to prop up their banks.

⁹³ During this time, the financial markets were so panicked that the credit system froze, disrupting the flow of funds into the economy. Banks refused to lend to each other in the overnight federal funds markets and began cancelling or limiting previous approved credit lines to customers.

⁹⁴ *ibid* (n 39).

⁹⁵ Securities brokers offered money market funds and securities brokerage accounts with checking account features paying market rates in return whereas banks were prohibited from paying any interest on checking accounts or selling securities. The securities industry developed a secondary private placement market for commercial paper which allowed companies to raise operating funds directly into the capital markets more easily and cheaply than through bank loans.

⁹⁶ Insurance companies offered fixed and variable annuities that became competitive with bank certificates of deposit as a means of savings.

⁹⁷ Banking regulators permitted banks to expand into broader insurance and securities markets with wider geographic reach, sometimes relying on new legal theories.

⁹⁸ *ibid* (n 36). The originate-to-hold model relied on the holding of 30-year, fixed-rate mortgages primarily by savings and loans associations which funded these long-term assets with short-term liabilities – a formula that ended the disaster with the collapse of the thrift industry in the late 1980's. The originate-to-distribute model avoided this problem primarily by separating mortgage origination from mortgage risk and by offering mortgage products with flexible maturities and other terms.

banks the ability to attract other assets including loans off their balance sheets to trusts, and other vehicles that issued securities or unit trusts to investors. 'Securitization essentially transferred the risk of mortgage lending from banks to investors.'⁹⁹ Securitization also became revenue generating strategy for banks, and other financial institutions that participated in lending activities. Non-bank mortgage companies also participated in securitization by earning loan origination fees without taking into account the possibility of the mortgages created, which apparently transfers to the purchasers of the mortgages. The originate-to-distribute version introduced new mortgage products such as home equity loans, adjustable rate mortgages, and payment option including other mortgages with flexible terms. The design of these new products reduces the risk in mortgage lending while making it cheap and accessible.

The future of the banking system aligns with the future of mortgage markets with uncertainties ahead. For example, banks are becoming more complex and interconnected, and mortgage companies will continue to provide mortgages to creditworthy homebuyers. The only part of the evolution of the mortgage market that will change is the lack of a prevailing structure for the supervision of non-bank mortgage products, providers and activities. The mortgage markets have evolved without government supervision, and federal regulatory oversight. This is likely to change in the future. The evolution of the banking system and the mortgage markets did justify the need for regulators to establish the Basel III Accord, following the financial crisis 2007-2009.

5. Basel III

The continuing evolution of the banking industry has necessitated the introduction of more regulatory frameworks, after Basel I and Base II. In particular, the 2007-2009 financial crisis, witnessed the introduction of Basel III to help prevent more financial stress in the future by revising many banking standards, after the failure of Lehman Brothers. The failure of Lehman Brothers prompted the variety of different group of experts to investigate and identify the causes of the crisis and the possible solution to manage the crisis by tightening the markets. It was now clear that the financial crisis of 2007-2009 exposed the shortcomings of Basel I and Basel II frameworks.

The introduction of Basel III was in the last words issued by the Basel Committee on Banking Supervision (BCBS) on December 16, 2010, which represents the International Regulatory Framework for Banks. This final text contains global regulatory standards on bank liquidity and capital adequacy. The Basel III framework increases the quantity and

quality of capital standards with improved measures to promote the accumulation of capital that is accessible in times of stress. The process also introduces two liquidity standards, better risk coverage, and leverage ratios as a block to the risk-based requirements. The objective of Basel III is to increase the risk coverage of banks' capital for securitization, derivate-related counterparty credit risk exposure, trading books, and off-balance sheet vehicles. The adoption of the Basel III framework was successful at the November 2010 G-20 Summit in Seoul, South Korea by the G-20 leaders.¹⁰⁰

The contents of Basel III includes increasing the quality and quantity of capital,¹⁰¹ an added capital conversation buffer,¹⁰² countercyclical capital buffer,¹⁰³ additional loss-absorbing capacity for systemically prominent banks,¹⁰⁴ global liquidity standards,¹⁰⁵ risk-weighted assets,¹⁰⁶ and containing leverage.¹⁰⁷

¹⁰⁰ Oshani Perera "Basel III: To What Extent will it Promote Sustainable Development?" (2012) The International Institute for Sustainable Development (IISD) <<http://www.iisd.org/pdf/2012/basel3.pdf>> accessed 28 October 2013.

¹⁰¹ The Tier I capital requirements, which include common equity and a range of other, more strictly defined instruments have been increased from 4% to 6%. Also the minimum requirement for common equity, the higher form of absorbing capital was increased from 2% to 4.5% after the applications of regulatory adjustments.

¹⁰² Basel III introduces an additional capital conversation buffer of 2.5% that is to be financed through common equity. When this buffer falls below 2.5% in times of stress, banks are curtailed in their ability to pay dividends to shareholders and discretionary bonuses to employees until the buffer is restored.

¹⁰³ The Basel III introduces rules for the disbursement and establishment of countercyclical buffer ranging between 0 and 2.5%, financed through other risk-absorbing capital or common equity, according to national circumstances. See Bank of International Settlements 'Basel III: International Framework for Liquidity: Frequently Asked Questions' (2011) BIS <<http://www.bis.org/publ/bcbs199.pdf>> accessed 28 October 2013.

¹⁰⁴ The BCBS introduced a methodology for globally assessing systematically important banks, the additional required capital and the arrangements by which they will phased. The assessment methodology us based on an indicator-based approach designed to increase the resilience of globally systemically important banks and create incentives for them to reduce their systemic importance over time. See Bank of International Settlements 'Measures of Globally Important Banks Agreed by the Group of Governors and Heads of Supervision' (2011) BIS <<http://www.bis.org/press/p110625.htm>> accessed 28 October 2013.

¹⁰⁵ The Basel III makes for a global liquidity coverage ratio that will require banks to have sufficiently high-quality assets to withstand a 30-day stressed funding scenario. That ratio is to be implemented in 2015. The Basel III also makes provision for a net stable funding ratio – a longer-term structural ratio designed to address liquidity mismatches. The purpose of this standard is to complement the global liquidity coverage ratio by covering the entire balance sheet and providing an incentive for banks to use longer-term sources of funding.

¹⁰⁶ Basel III contains measures go increase the capital requirements by adjusting the risk weight of re-securitization exposures in relation to securitization exposures, by

⁹⁹ *ibid* (n 36), at 7.

The scholars and commentators meet the new Basel III rules with different concerns and reactions, especially about the cost of implementing the rules by the entire banking industry. The introduction of the new Basel III will bring significant 'changes across the global banking industry, and even change their core business models and financial system.'¹⁰⁸ The concerns for costs have received a wide undertaking even though they are still expressing concern on the time provided to implement the structural changes.¹⁰⁹ Scholars and commentators are also expressing concern on the effectiveness of the new standard in qualifying another financial crisis and preventing banks against failure. Commentators also agree that the Basel III represents complex technical and legal rules.

5.1. Effects of Basel III on Retail, Corporate and Investment Banking

The requirements for higher liquidity and capital standards of Basel III will affect both retail, corporate and investment banking.¹¹⁰ For example, retailing banking is usually under the impact of rules pertaining to the quality of the capital base. In essence, the new Basel III rules on capital requirements will affect many traditional retail banking products with an increase in financing costs. Furthermore, retail banks with lower capital ratios may find themselves under considerable pressure. The cost of short-term retail loans will increase because of the increase in concentration ratios with relatively high risk weights, long-term funding needs and higher liquidity. Retail banks may decide to move on the costs to customers, but for sure consumer finance segments, re-pricing may pose a challenge.

The increase in the capital plan ratios significantly affect corporate bank products with relatively high risk-weight, such as unsecured loans or structured finance. In essence, long-term asset based investment and long-term corporate loans will experience an increase in funding costs. These costs will affect corporate banks especially in business finance, and specialized lending because of the new capital standard ratio. In terms of business finance, which is ideal for lending between banks, Basel III increases the risk weights for banks by some 20

harmonizing some credit conversion factors for specific liquidity facilities.

¹⁰⁷ Basel III provides a non-risk based leverage ratio that includes off-balance sheet exposures to complement the risk based capital requirements. This requirement makes banks to limit their total assets to 33 times their equity capital. The objective is to contain the system-wide build-up of leverage that triggered the 2007-2009 financial crisis.

¹⁰⁸ *ibid* (n 100), at 1.

¹⁰⁹ Commentators are also expressing concern about the loopholes for regulatory arbitrage as a result of the paces of implementing Basel III across jurisdictions.

¹¹⁰ Anca Elena Nucu 'The Challenges of Basel III for Romanian Banking System' (2011) *Theoretical & Applied Economics*, 18(2), 59-70, pp. 63-64.

percent to 30 percent. Trade finance commitments come into conflict with the new leverage ratio. The new liquidity rules set reserves also off-balance sheet liquidity lines such as business guarantees and letters of credit.

The capital markets through investment banking supports the changes of new capital ratios under Basel III, but it affects over-the-counter OTC derivatives market because Basel III requires banks to maintain a higher level of capital to fund counterparty credit risk and market risk. Cash trading will decrease because of the increase in costs of holding inventories, particularly the matched funding requirements on lower-rated assets. The three amendments to the Basel capital structure (CRD II, CRD III and CRD IV) affect securitizations, and this would raise capital requirements by a factor of up to ten.¹¹¹

5.2. Implications of Basel III

It is not clear whether or not Basel III will help increase security across the global financial sector and contain systemic risk. The studies of the Macro Assessment Group of the International Banks of Settlements on the basis of models covering 17 industrialized countries provide this evidence. The results of their findings suggest that the average estimated increase in the lending growth will be 15 basis points by 2015, subject to one percent point increase in the target capital ratio for four years.¹¹² Another study by the Institute of International Finance with a focus on Japan, Europe, and the United States indicates a two percent advantage increase in the target capital ratio. This results in an increase of average lending spread by 132 basis points during 2011-2015.¹¹³ Both studies indicate an increase in both liquidity and capital standards. The

¹¹¹ Phillip Harle, Erik Luders, Theo Papanides, Sonja Pfetsch, Thomas Poppensieker, & Uwe Stegemann 'Basel III and European Banking: Its Impact, How Banks Might Respond, and the Challenges of Implementation' (2010) MCKINSEY <www.mckinsey.com/~/media/26_Basel_III_and_European_banking.pdf> accessed 28 October 2013. CRD II forces investors to ensure that before they buy a piece of new securitization they must ensure that the originator has complied with rule that requires banks to hold at least 5% of the securitization they create at all times. CRD III introduces market risk charges and increased charges for securitization. CRD IV replaces a risk weighting on securitizations with a lower ratings of 1,250 percent. In combination with the newly increased capital ratio, this translates to substantially higher capital requirements.

¹¹² Bank of International Settlements 'Group of Governors and Heads of Supervision Announces Higher Global Minimum Standards' (2010) BIS <<http://www.bis.org/press/p100912.pdf>> accessed 28 October 2013.

¹¹³ Institute of International Finance 'Interim Report on the Cumulative Impact on the Global Economy of Proposed Changes in the Banking Regulatory Framework' (2010) IIF <http://www.ebf-fbe.eu/uploads/10-Interim%20NCI_June2010_Web.pdf> accessed 28 October 2013.

Banking Committee must also meet the initiative to improve the implementation phase of capital ratios to 2019 indicating the uncertainties and complexities unpinning the implementation of Basel III.

The new capital requirements of Basel III come with a cost because equity is significantly more expensive than debt as a source of funding. The new capital requirement will require banks to repurchase or unwind financial instruments that the new Basel III rules makes unsuitable for the purposes of regulatory capital, issue different types of the medium and offer additional capital. This will increase borrowing costs because of the rising demand for equity capital, which should increase the proper use and expenses on assets in the short term.

The new liquidity requirements will reduce the chances of the earning yield of the banking sector because banks will have to keep low-yielding assets and thereby deprive less liquid, higher-yielding assets. On the other hand, if Basel III succeeds to make banking sector more resilient, it will help cut down risk premiums across the sector and reduce the need for public sector bailouts. Furthermore, reducing bulk and interbank funding costs and risk sensitive deposit insurance premium levels will help reduce leverage in banks.¹¹⁴ Basel III will also cause changes to how banks will continue, and identify risk because the bank's liability and asset base represents where danger can reduce. 'The augmented capitals requirements are also likely to develop more efficient use of all bank capital, which will inherently include changes in the management of risk.'¹¹⁵ In essence, the liquidity rules of Basel III will affect banks to adopt risk management practices. This will help improve the management and analysis of liquidity risks as well as, business, and credit risks. Adopting risk management practices will also affect banks to improve risk indicators that serve as an early warning signal for managing counterparty trust and bilateral exposures, assessing the risk of intraday liquidity, and trading in complex securities, which improve the management of risk across the banking sector.¹¹⁶ Commentators and scholars have different opinions on the implications of liquidity, and capital rules of Basel III. Majority agree that both rules are evolving as the financial markets evolve, and become more involved.

5.3. Evolution of Capital Requirements

Basel III and Basel II share similar methods of operation, in particular for assessing the relative risks of different types of assets. The major change between both frameworks is that Basel III focuses on the increase in the bank's equity capital requirements.

¹¹⁴ Peter Went 'Basel II Accord: Where do we go from here?' (2010) SSRN <<http://ssrn.com/abstract=1693622>> accessed 28 October 2013.

¹¹⁵ *ibid* (n 100), at 5.

¹¹⁶ *ibid* (n 114).

This confirms the development of capital requirements in the Basel accords, which have also contributed in the changing perceptions of policy makers in terms of the level of financial stability risks and how these risks can be assessed relative to one another. 'The emphasis is a reflection of the conclusion drawn from the crisis: that bank fragility is more prevalent than previously thought and that the motivation for governments to assist banks in poor financial condition is exceptionally strong during the crisis.'¹¹⁷ In essence, the fundamental reason for minimum capital requirements is a familiar tale.¹¹⁸ This also suggests that minimum capital requirements has evolved through the Basel accords because of the enormous risks bank's profit, which have led to widespread costs through the bailout of failed institutions or blanket insurance payouts.

Capital requirements have been a reoccurring phenomenon. For example, the regulators in the United States have enforced legal industry-wide capital requirements only since 1981 in response to the loan-liquidity problems during the stagflation of the past 1970s and the recession of the early 1980s. Before this enforcement, regulators required banks to raise capital on a case-by-case basis or when bank examination by the regulators warranted the need to raise capital. This resulted in uncertainty on whether regulators could influence or force banks to raise capital. Congress resolved the issue with the introduction of the International Lending Supervision Act in 1983, which gave power to regulators to enforce and impose capital requirements.¹¹⁹ Few years following the introduction of the Act, regulators expressed concerned that the treating of all capital ratios did not capture differences in risks among different bank assets, thus giving banks an incentive to favor high-yielding, riskier assets. This concern resulted in enforcing minimum and setting minimum capital requirements as the Basel accords evolved from Basel I to Basel III. For example, Basel I imposed an 8 percent minimum capital requirements in accordance with the risk adjustments of assets.

¹¹⁷ Huberto M. Ennis and David A Price 'Basel III and the Continuing Evolution of Bank Capital Regulation' (2011) THE FEDERAL RESERVE BANK OF RICHMOND <http://www.richmondfed.org/publications/research/economic_brief/2011/pdf/eb_11-06.pdf> accessed 28 October 2013.

¹¹⁸ The Basel committee provides some basic guidelines for computing and adjusting the countercyclical component. See Rafael Repullo and Jesus Saurina 'The Countercyclical Capital Buffer of Basel III: A Critical Assessment' (2011) SSRN <http://papers.ssrn.com/sol3/papers.cfm?abstract_id=1794894> accessed 28 October for a detailed discussion of the issues.

¹¹⁹ For more on the early history of U.S. capital requirements see Karyn Mitchell 'Capital Adequacy at Commercial Banks' (1984) Federal Reserve Bank of Kansas City, Economic Review, pp. 17-30; Herbert L. Baer and John N. McElravey 'Capital Shocks and Bank Growth - 1973 to 1991' (1993) Federal Reserve Bank of Chicago, Economic Perspectives, 17(4), 2-21.

Basel II addressed the failure of Basel I by dealing with operational risk and offering banks with the methods of estimating credit risk.

The implementation of the Basel II capital standards was not complete in the United States by the date the financial crisis 2007-2009 started¹²⁰, but in reality, the effectiveness of Basel II was not an indication of the United States' experience during the financial crisis. Basel II relied more on credit ratings to distribute assets in categories and the financial crisis of 2007-2009 reinforced lack of internal risk modeling of banks, which is an essential element of the IRB approach introduced by the framework. This suggests that Basel II focuses on making capital requirements more sensitive to risk, and Basel III focuses on increasing the capital requirements for banks. This indicates that increasing the minimum capital requirements under Basel III is an experiment indicative of a possible increase in the future (Appendix D shows Basel III capital standards). The expected value is a banking sector with a larger buffer against losses, and better incentives to manage risk-taking thereby resulting in less potential for systemic crisis and fewer bank failures.

Uncertainties still lies in the macro-economic effects of increasing capital requirements because of the potential costs of raising Tier 1 capital. Banks that have challenges meeting this requirement may choose not to issue new equity, but rather focus on liquidating bank-specific valuable assets or reduce lending. This also makes it unclear the extent to which future costs of raising capital will transfer banking activities to unregulated areas of the financial sector, or make the investment intermediation by banks costlier. These implications will be dangerous for the stability of the financial sector. Furthermore, tradeoffs experience fixing capital requirements because capital is costly and it seems unlikely that the risk of bank failures will go down to zero in accordance with an optimal level of regulatory capital. In essence, regulators cannot prove the point at which they can reduce the chances of bank failures to the point where the benefits of fresh lowering of such risk outweigh the cost of increasing capital.

5.4 Evolution of Liquidity Risks

Regulators deem liquidity levels and access to adequate funding required for the long-term stability of the banking sector.¹²¹ Before the financial crisis of

2007-2009 following the introduction of Basel III, international banking regulators did not carry comprehensive liquidity standards. The financial crisis exposed banks with limited liquid assets despite their practical minimum capital requirements. The financial crisis revealed that banks failed to realize liquid assets, which led to the mismanagement of liquidity risk.¹²² The Basel committee introduced a framework for banks to manage their liquidity prudently through Basel III.¹²³

The liquidity framework introduces two main minimum liquidity ratios namely: (1) Liquidity Coverage Ratio (LCR) and (2) Net Stable Funding Ratio (NSFR). The rationale behind the introduction of these ratios is to make the bank's liquidity risk more resilient by complementing its short-term requirements with the (LCR) and medium-term to long-term requirements with the (NSFR).¹²⁴

The (LCR), to be implemented in 2015, guarantees that banks should maintain high quality liquid assets that are not hindrances. In essence, the asset can be quickly converted into cash at no loss of value. The assets should be convertible into cash within 30 calendar days to allow the bank maintain adequate liquidity treatment for most stress conditions. Banks must maintain balance of stocks of high quality asset to total net cash outflows over 30 calendar days that are similar, or more than 100 percent. Strengthening liquidity rules will prevent banks from relying on bailouts from central banks for liquidity support, even though one of the duties of the central bank is to provide liquidity to meet liquidity rules.

The liquidity rules are a function of Level 1 assets (assets that are not subject haircut, and held at market value), and Level 2 assets (assets subject to haircuts, and held in stocks). Some jurisdictions, such as Australia have limited benefits for Level 1 assets preserved in their own money, because of the scarcity of used domestic bond.¹²⁵ Other commentators, such as Turner question if long term investments may cause maturity transformation through a bank balance sheet with the possibility of

institution-specific nature and that which affects markets as a whole.' See Bank of International Settlements 'Principles of Sound Liquidity Risk Management and Supervision' (2008) BIS < <http://www.bis.org/publ/bcbs144.pdf>> accessed 28 October 2013.

¹²² George Walker 'Liquidity Risk Management – Policy Conflict and Correction' (2009) *Capital Markets Law Journal*, 4(4), 451-461.

¹²³ The liquidity framework was adopted by the Basel committee with the minimum capital framework on 16th December 2010 under. See Bank of International Settlement 'Basel III: International Framework for Liquidity Risk Measurement, Standards and Monitoring' (2010) BIS < <http://www.bis.org/publ/bcbs188.pdf>> accessed 28 October, 2013.

¹²⁴ *ibid* (n 34).

¹²⁵ Joseph Cotterill 'Basel Liquidity Rules, Going Neo - Medieval' (2010) FT ALPHAVILLE <<http://ftalphaville.ft.com/2010/12/20/439811/basel-liquidity-rules-going-neo-medieval/>> accessed 28 October 2013.

¹²⁰ Prior the crisis the plan had been for them to take effect in April 2008, and even then they were generally to be mandated only for banks with at least \$250 billion consolidated total assets or at least \$10 billion of on-balance sheet foreign exposure.

¹²¹ *ibid* (n 114). Basel Committee defines liquidity as 'the ability of bank to fund increases in assets and meet obligations as they come due, without incurring unacceptable losses. The fundamental role of banks in the maturity transformation of short-term deposits into long-term loans makes banks inherently vulnerable to liquidity risk, both of an

creating the possibility of liquidity runs.¹²⁶ The concurrent selling of long-term commitments through liquid markets may develop into gyrating result of falling prices typical of a collapse in liquidity.

The (NSFR), to be implemented in 2018, guarantees that banks should maintain a minimum acceptable amount of sound liquid assets of on-and-off balance sheet for a period of one year.¹²⁷ The (NSFR) will increase the competition among banks in taking deposits because of the favorable retaining treatment. The (NSFR) relies more on defining the behavior of investors in terms of what is unpredictable and secure during a stressful situation for banks. The OECD argues that the management of liquidity should be the responsibility of the markets. They also argue that supervisors of banks should be responsible for dealing with oversight of banks when it arises.¹²⁸ All these pointers suggest that liquidity of risk will continue to evolve into the future bearing in mind the complexity of liquidity and capital rules and the phases of their implementation.

The complexity and prolonged period of implementation remains the biggest disadvantage of the Basel III framework, with full implementation by the end of 2018, the risk of regulatory arbitrage, and change for regulators in terms of the changing conditions in risk weighting. These poses some uncertainties on how the banking sector hopes to solve these problems as liquidity risks continue to grow.

5.5 Why Basel III Failed

The new Basel III framework is becoming extremely difficult, and policy-makers should be able to add more clarity by cutting some of the dead wood out of earlier versions of the Basel accords.¹²⁹ It is clear that financial stability or soundness of the banks will not be easy to overcome because of the conflicting implementation deadlines and the multitude of key ratios. This suggests that it is not sure when banks will effectively be Basel III-compliant. The implementation of the new Basel III rules commences from 2013 onwards over an extended conversion with

full implementation to become effective from 2019 onwards. (Appendix E shows the Basel III ratios and deadlines). The missing links in the new Basel III rules include a surcharge for large systematically relevant financial institutions (SIFIs)¹³⁰ and recalibration of risk-weight of assets. This makes Basel III more complicated than Basel II.

Commentators and scholars have proposed global banks should have another debt absorbing level in order to overcome moral hazard and negative externalities, which could be posed by complex financial institutions, such as the (SIFIs). Global banks need to comply with higher CET1 capital in reference to the capital requirements documented in chapter four. This estimate between 1-2.5 percent of risk weighted assets ('RWA') depending on their systemic importance. A surcharge of additional 1% of RWA may come into play if such bank increases its importance. The OECD argues that derivatives, capital surcharge should not be applied to RWA because it does not efficiently deal with risk interconnectedness and excessive leverage.¹³¹ Many scholars argue that the higher capital ratios for international banks will affect about 20 key players in the banking sector because of the problems of the (SIFIs). The problems include the problems associated to resolution and crisis management, the problem of definition, and problems with effective supervision and regulation.¹³² Even though the definition problem is subject to limited defeat, the definition problem leaves room for more discussion by commentators because the definition of SIFI today may not necessarily be systemic tomorrow.

A better resilient, and capitalized banking sector are a combined effect of minimum capital requirements, a risk-weighted lowest common equity, minimum leverage ratio, and capital buffer. Some important deficiencies of Basel II remain to be addressed before the introduction of Basel III. For example, the use of external credit rating agencies has not been critically examined in the rating-based method to determine the risk weights, and risk-weights have not been reviewed. Even though the use

¹²⁶ Adair Turner 'Leverage, Maturity Transformation and Financial Stability: Challenges beyond Basel III' (2011) FSA <http://www.fsa.gov.uk/pubs/speeches/031611_at.pdf> accessed 28 October 2013.

¹²⁷ According to the Basel liquidity framework 'the NSFR is defined as the amount of available amount of stable funding to the amount of required stable funding. This ratio must be greater than 100%. "Stable funding" is defined as the portion of those types of amounts of equity and liability financing expected to be reliable sources of funds over a one-year time horizon under conditions of extended stress.'

¹²⁸ Adrian Blundell-Wignall and Paul Atkinson 'Thinking beyond Basel III: Necessary Solutions for Capital and Liquidity' (2010) OECD Journal of Financial Market Trends Issue 1 <<http://www.oecd.org/finance/financial-markets/45314422.pdf>> accessed 28 October 2013.

¹²⁹ Karel Lannoo 'The Forest of Basel III Has Too Many Trees' (2011) CEPS < www.ceps.eu/ceps/dld/4186/pdf> accessed 28 October 2013.

¹³⁰ There are so many problems associated with complex financial groups commonly known as Systematically Important Financial Institutions ("SIFIs"). The Basel Committee and the Financial Stability Board (FSB) have agreed on certain characteristics of the SIFIs, These are institutions whose disorderly failure would cause significant disruption to the wider financial system because of their size, complexity or interconnectedness. See Financial Stability Board 'Reducing the Moral Hazard Posed by Systematically Important Financial Institutions' (2010) FSB < http://www.financialstabilityboard.org/publications/r_101111a.pdf> accessed 28 October 2013.

¹³¹ Adrian Blundell-Wignall and Paul Atkinson 'Global SIFIs, Derivatives and Financial Stability' (2011) OECD Journal: Financial Market Trends. Retrieved from <<http://www.oecd.org/finance/financial-markets/48299884.pdf>> accessed 28 October 2013.

¹³² Rosa Maria Lastra 'Systemic risk, SIFIs and Financial Stability' (2011) Capital Markets Law Journal, 6(2), 197-213.

of internal assessment is reassuring, the financial crisis brought about the scrapping of self-regulation.

One of the problems of Basel III apart from its complex nature is the foundation of when banks will be Basel-III compliant. This has resulted in inconsistent claims. The conflicting claims may include complying with all ratios at the same day or complying with minimum levels of common equity, capital buffer, and leverage ratio or referring to ratios under different components in Tier 1 and Tier 2. This poses confusion for depositors and investors alike. The leverage ratio is only available to outsiders, and information relating to the subdivision of assets to risk weights is not available to outsiders, thus making market discipline a defective part of the Basel III accord.

6. Post-Financial Crisis

Evidence from economics suggests that people respond to incentives. Preventing another financial crisis will require regulators and banks to learn from experience by identifying the sources of incentives that contributed to the crisis, in terms of making investment decisions. In essence, regulators should identify the root causes and not rely on private actions such as poor credit rating and paying high bonuses to bankers for placing securitized loans. The probability of another financial crisis can be mitigated by identifying conditions for fair incentives, and by bearing in mind that the causes of the financial crisis is a function of structural and cyclical factors.

The structural factors include poor supervisory and regulatory framework for intermediaries. 'The prevailing regulatory rules probably contributed to the high leverage and large maturity mismatch taken on by banks and other financial institutions that ended in the widespread counterparty mistrust, liquidity shortages, and contagion to other markets.'¹³³ In essence, the bank's exposure to risk became a solution because it took many assets off their balance sheets. The inadequacy of regulatory rules stems from capitalization and liquidity crisis because the rules were not successful in averting the crisis. Commentators prescribe stronger amount of capital and liquidity requirements that are sufficiently broad in scope. This will help prevent another financial crisis by generating responsible behavior in the financial sector.¹³⁴

Recommendations for capitalization include narrowing the definition of capital to include only loss-absorbing components such as common equity. This will require differentiating the different weights with the specifics of the assets and not by the type of asset. For example, a mortgage for a high-risk customer should not utilize the same capital for that

of a low-risk customer. In practice, this procedure may prove difficult because it largely depends on judgment; this requires seeking a combination effect of improving ethical standards of capital relative to non-risk weighted assets that include off-balance sheet exposures to give the total leverage ratio. Also converting contingent debt into equity for tail risk situations and buffers for inappropriate times is particularly relevant to prevent another crisis.¹³⁵ Recommendations for liquidity rules with an exceptional circumstances of fixed maturity mismatch between the bank's assets and liabilities requires banks to hold more current, and flexible use of full reserve banking for retail deposits that promote the payment system.¹³⁶

Evidently Basel III has not proven to be sufficient to prevent the financial crisis because of the inclusions of components of lesser quality than traditional equity in Tier 1 capital, and their relatively small margin values. Bank regulators need to overcome these limitations considering the limited records of the Basel accords in preventing the financial crisis in the past.¹³⁷

The "too powerful to fall" system that applies to SIFIs create moral hazards that promote risk-taking with different incentives and socially shared sacrifice. The only solution to this problem is to remove the policy. 'To counter possible externalities coming from the failure of any institution, a variable surcharge on capital may be imposed based on an index of significant variables such as size, and interconnectedness.'¹³⁸ Furthermore, liquidity rules must be easy to keep solvent institutions on the part of the lender of last resort. The rules will be essential

¹³⁵ For more details on the contingent debt conversion proposal see Squam Lake Working Group on Financial Regulation 'An Expedited Resolution Mechanism for Distressed Financial Firms: Regulatory Hybrid Securities' (2009) Council on Foreign Relations Working Paper (April).

¹³⁶ Kotlikoff (2010) proposes a "limited purpose banking" framework in which banks only offer checking accounts and shares of mutual funds. Checking deposits have 100 percent reserves and mutual funds serve the lending purpose and do not have maturity mismatch. In such an arrangement, there cannot be bank runs or wild swings in the money multiplier. Laurence J. Kotlikoff 'Jimmy Stewart is Dead' (2010, John Wiley, NJ).

¹³⁷ King (2010) points out that Basel III may not avoid crisis because capital requirements are insufficient, risk weights are computed from past experience, and considerations of liquidity structures are omitted. Mervyn King 'Banking: From Bagehot to Basel, and Back Again' (2010) The Second Bagehot Lecture Buttonwood Gathering, New York City BANK OF ENGLAND <<http://www.bankofengland.co.uk/publications/Documents/speeches/2010/speech455.pdf>> accessed 28 October 2013. Demircuc-Kunt and Detragiache (2010) find no evidence of a robust statistical relationship between compliance with Basel Core Principles and improved bank soundness. Asli Demircuc-Kunt and Enrica Detragiache 'Basel Core Principles and Bank: Does Compliance Matter?' (2010) IMF Working Paper WP/10/81 <<http://www.imf.org/external/pubs/ft/wp/2010/wp1081.pdf>> accessed 28 October 2013.

¹³⁸ *ibid* (n 133), at 527.

¹³³ Manuel Sanchez 'Financial Crises: Prevention, Correction, and Monetary Policy' (2011) *Cato Journal*, 31(3), 521-534, p. 525

¹³⁴ *ibid*.

components of a stronger regulatory process by providing efficient bankruptcy laws, living wills, and expedient resolution mechanism, which are essential components of a stronger regulatory framework.

Cyclical factors such as credit targets for banks, fiscal subsidies for borrowers, and government guarantees on loans envelopes policies aimed at promoting the development of lending. The financial crisis has proven that the monetary policy should not become the source of problems because of the inefficient incentives that they provide. In essence, economic policies that assist credit expansion and go beyond optimal rules should be avoided.

6.1. The Need for Corrective Measures

It is clear that the underestimation of risks was the cause of the financial crisis because regulators overestimate the likelihood of risks in response to early warnings of a potential financial disaster. It is counterproductive for regulators because there is a lag between their inability to detect incipient problems, and the time it takes for any economic system to take effect.¹³⁹ In essence, this restricts the scope of remedial measures. Even if regulators were able to identify the possibility of another crisis, they may be reluctant to implement policies to counter it. The need for corrective measures such as requirements for operational systemic supervisor, enhancing supervision, integrating micro and macro prudential components, and enhancing cross-border event is coming.

Regulators should be able to create a systemic risk overseer. This person will be in charge of assessing evolving risks based on well-defined methodologies to make this concept operational. Regulators can also complement this requirement with the advice of independent experts.¹⁴⁰ Tools such as severe loan origination standards, lower loan-to-value ratios, higher liquidity and capital requirements, and limits to lending concentrations should help improve the supervisory and regulatory framework and maximize the effectiveness with the least possible distortions. These tools will serve as potential indicators for the crisis offering better prescriptions in

alignment with conditional rules in advance before the crisis.

'Weaknesses in conducting supervision also contributed to the crisis.'¹⁴¹ Regulators relied more on the myopic assumption that the market "knows best" resulting in the lax of enforcing and implementing existing regulations indicative of a steady drift towards more hands-off supervisory approach.¹⁴² This requires enhancing control through cross-border cooperation, integration of micro and macro components, and implementation. The implementation of appropriate care requires the willingness and ability to perform – both of which are the missing link in the run-up to the crisis. The financial crisis endorsed the need for proper supervision, which should be easy to follow through, adaptive, intensive, proactive, skeptical and detailed.¹⁴³ Furthermore, supervisory agencies should be held accountable and have the ability to carry out their tasks by providing them with resources and mandate. This is an invaluable addition to Basel III and a key requirement for its implementation.¹⁴⁴ Supervision is a central pillar of the economic reform agenda and the June 2010 Toronto G-20 Summit gave a definite order to improve it, but this site has made little progress.

Financial regulation should be a function of the integration of its micro and macro prudential components. For example, in the UK, a new Financial Policy Committee (FPC) under the ambit of the Bank of England is responsible for controlling macro-prudential tools. Also in the USA, the July 2010 Wall Street Reform and Consumer Protection Act established the Financial Stability Oversight Council (FSOC) with the aim of bringing the power of federal banking regulators, insurance experts and state regulators together. In the European Union, a new European System of Financial Supervision under the sponsorship of the European Central Bank as the European Systemic Risk Board (ESRB) has broader legal powers and mandate of identifying risk in the financial system. 'The creation of these entities charged with the task of identifying macro vulnerabilities may help supervisors in calibrating

¹³⁹ For example, reviewing the financial stability reports of 47 central banks published in 2006, in the wake of the crisis, Cihak finds that 'virtually all (97 percent) started off with a positive overall assessment of the domestic system.' Martin Cihak 'Central Banks and Financial Stability: A Survey of Financial Stability Reports' (2006) Seminar on Current Developments in Monetary and Financial Law IMF <<http://www.imf.org/external/np/seminars/eng/2006/mfl/mc.pdf>> accessed 28 October 2013.

¹⁴⁰ For example, Tarullo proposes the creation of an advisory committee that would assess macro prudential evaluations. Daniel K. Tarullo 'Involving Markets and the Public in Financial Regulation: A Speech at the National Bankers Association Foundation Financial Literacy Summit Reception, Washington, D.C., April 13, 2010' (2010) FEDERAL RESERVE <<http://www.federalreserve.gov/newsevents/speech/tarullo20100413a.htm>> accessed 28 October 2013.

¹⁴¹ Alessandro Giustiniani and John Thornton 'Post-crisis Financial Reform: Where Do We Stand?' (2011) Journal of Financial Regulation and Compliance, 19(4), 323-336, p. 327.

¹⁴² Laura Kodres and Aditya Narain 'Redesigning the Contours of the Future Financial System' (2010) IMF <<http://www.imf.org/external/pubs/ft/spn/2010/spn1010.pdf>> accessed 28 October 2013.

¹⁴³ Jose Vinals, Jonathan Fiechter, Aditya Narain, Jennifer Elliot, Ian Tower, Pierluigi Bologna and Michael Hsu 'The Making of Good Supervision: Learning to Say "No"' (2010) IMF <<http://www.imf.org/external/pubs/ft/spn/2010/spn1008.pdf>> accessed 28 October 2013.

¹⁴⁴ For example, it remains to be determined how the conversation buffer mechanism will be implemented in practice; how firm supervisory agencies will be in restricting banks from distributing their earnings.

specific aspects of Basel III, such as the counter-cyclical buffer.¹⁴⁵ For example, the FSOC and ESRB have no absolute enforcement powers as they can only provide recommendations and warnings, and the ability to take actions based on the warnings and recommendations rests on their respective agencies. On the other hand, FPC is prudent to maintain control over macro-prudential tools.

The importance of the close coordination and cooperation between host and home supervisors is as a result of the increase in cross-border business activities and institutions. The operation of the consolidated supervision of a cross-border existence stems from the home supervisor, based on the information received from host supervisors on domestic activities. This has also contributed to the establishment of supervisory colleges for large and international intermediaries by the International Association of Insurance Supervisors, the Basel Committee on Banking Supervision (BCBS), and the Financial Stability Board.¹⁴⁶ The European Union has also followed suit. To enhance cross-border cooperation, supervisory authorities need to develop effective communication channels for the proper exchange of information based on their own understanding. They will also need to work with a common goal and supervisory system to manage and improve the monitoring of the key risks facing the financial sector.

6.2. The Role of Central Banks

There continues to be a debate amongst commentators on the ways in which central banks can contribute to financial stability. Commentators have recommended that 'monetary policy should attempt to control directly financial booms that may lead to a crisis.'¹⁴⁷ In essence, central banks can increase their policy interest rates to twinge asset bubbles because of the relationship between applicable interest rates and asset prices. Central banks take into consideration the importance of interest rates because asset prices provide relevant information relating to the future state of the economy. Central banks can also generate less absorbing activities that will not only reduce tax

burdens on tax payers and reduce the potential of excessive risks financial institutions require, but will increase monetary policy actions in preventing the decline in the value of assets.¹⁴⁸ The problems of monetary policy are the possibility of the policy conflicting with other objectives proposed to policy makers. This results in pursuing other goals by deviating from one side leading to lack of accountability and potential conflict of the goals. Monetary policy can also reduce trading signals and promote moral hazard because of price fluctuations. In essence, monetary policy should focus on the primary purpose of pursuing price stability by using previous cited supervisory and regulatory tools to point source of problems, such as excessive bank leverage and unsecured credit standards that threaten the financial system.

The "new central bank paradigm" as a result of the financial crisis claims that central banks have failed to recognize signs leading to the crisis because their focus on price stability instead of implementing measures to prevent it.¹⁴⁹ Central banks use faulty economic models that do not take into account key aspects of the financial sector. The solution to this failure is the amendment to the mandate of the central bank to secure price stability in addition to financial stability, and in some countries, full employment, making central banks responsible for all these objectives. Central banks should make augmented economic models control policy decisions.

The central banks of developed countries, particularly the United States adopted unprecedented expansionary monetary policy following the failure, and this had its own implications.¹⁵⁰ This contributed to investors assuming more risk because their quest for higher yields as inflation risks surfaces. This made it difficult to implement effective exit strategies. In this situation, investors move capitals, which raise the prices of certain assets, and the currencies of emerging market economies. The central banks have implemented measures to inhibit the growth of their currencies by including capital controls and interventions in foreign exchange markets. Capital controls make black markets and impede the transfer of funds for efficiency and modernization improvements thereby lessening investor confidence. Currency interventions impose economic losses on central banks and are hardly effective. The greatest threat of these actions is 'a widespread movement toward protectionism that could hamper the sustained recovery of the world economy.'¹⁵¹ It will be best for central banks to avoid implementing these measures.

¹⁴⁵ *ibid* (n 141), at 328.

¹⁴⁶ In general, "supervisory colleges" refer to multilateral working groups of relevant supervisors that are formed for the collective purpose of enhancing effective supervision of international banking group on a consolidated and solo basis. Colleges are not intended to be decision-making bodies but to provide a framework to enhance cooperation, coordination, and information sharing among relevant supervisors. The BCBS is to provide some enhance principles to improve the working of supervisory colleges by clearly outlining expectations regarding objectives, governance, communication and information as well as potential areas for collaborative work. See Basel Committee on Banking Supervision 'Good Practice Principles on Supervisory Colleges' (2010) BIS <<http://www.bis.org/publ/bcbs170.pdf>> accessed 28 October 2013.

¹⁴⁷ *ibid* (n 133), at 529.

¹⁴⁸ Marianne Ojo 'The Role of Monetary Policy in Matters Relating to Financial Stability: Monetary Policy Responses Adopted during the Most Recent Financial Crisis' (2010) <<http://mpira.uni-muenchen.de/26925/>> accessed 28 October 2013.

¹⁴⁹ *ibid* (n 133).

¹⁵⁰ *ibid*.

¹⁵¹ *ibid*, at 531.

The financial crisis exposed the gaps and weaknesses in managing complex financial institutions, especially those that rely on cross-border activities. This has also created a tension between augmenting transnational financial institutions and general economic stability and settlement arrangements to a convenient place where a change is imminent. To reduce moral hazard and guarantee financial stability central banks should implement an effective bank resolution framework with both domestic and international dimensions. 'At the national level, the legal, institutional, and regulatory framework should provide the national authorities with the appropriate tools to deal with all types of distressed financial institutions in an orderly manner.'¹⁵² This will contribute to retaining financial stability including a settlement and payment system that is reliable and predictable, service intermediation functions, and the protection of depositors. This will reduce the impact of a disaster or obligation on the financial system as well as reducing the reliance on taxpayers' resources. In essence, the key approach should include features such as the establishment of a regulatory threshold enabling the activation of proceeding before the distressed financial institution becomes balance sheet insolvent, and judicial review limited to the constitutionality of acts and not their merits. Others include initiation and implementation of the resolution measures under the banking authorities, and the creation of a particular procedure different from corporate insolvency. This will assist in resolving the domestic financial sector in an integrated fashion.¹⁵³

6.3. The Future of Basel III Accord

It is clear that the global financial reforms started long before the financial crisis 2007-2009, which led to the introduction of Basel III. Basel III is one of the most significant reforms to emerge in response to the financial crisis.¹⁵⁴ Basel III is the most popular international agreement as of today to ensure financial stability amongst banks. The reforms of Basel III introduce stricter liquidity and capital requirements with the goal of reducing the risk of bank failure. Attaining financial stability has been a more complicated issue because financial institutions increase in difficulty as they evolve. For example, the first launch of Basel capital accord in 1998 is 30 pages long whereas as of today, the Basel rulebook extends to 616 pages.¹⁵⁵ This demonstrates the evolution of the Basel accords from Basel I, Basel II,

and finally the current Basel III, with the purpose of introducing stricter capital and liquidity requirements.

Basel I pronounced the roots of modern risk-based capital requirements and as of the time of its inception in 1998, it was better than any amendment that came before it because it had powerful, simple, risk weights. Basel I do as a reference point for the establishment of Basel II. The introduction of Basel II was in 2004 but became effective in 2008 because of the factors Basel I failed to address, such as risk management and financial restructuring. Commentators criticized Basel II because it was pro-cyclical and it allowed banks to manage the risk that essentially added to the buildup of financial stability. Basel II was under attack for immediate implementation, and it had just been implemented when the financial crisis 2007-2009 began. The financial crisis 2007-2009 resulted in the introduction of Basel III. The objective of Basel III is promoting financial safety by making the financial system safer. This will save taxpayers from covering future costs of business failures. The evolution of the Basel reforms does not only represents its addition to hundreds of pages, but it also represents a vertiginous number of calculations that focus on risk-weighted assets for personal bank and each bank's own set of businesses.¹⁵⁶

The evolution of the Basel accords has prompted policy makers to promote economic growth and financial stability at the same time. Also, 'the shift from complex risk-weighting toward absolute minimum capital levels suggests that Basel III will look [decidedly] different in just a few years' time.'¹⁵⁷ This has resulted in a major rethink, in the areas of implementation, and the power of the financial resources to protect struggling economies to recover from the activity of downsizing. The response to any financial crisis tends to institute measures that minimize taxpayer costs and improve financial stability. The more the financial crisis detached itself from the past, there also other factors emerge, and this relates to Basel III and where the future of the Basel accords transcends. The shortcomings of Basel III can give way for the introduction of another Basel consensus following another financial crisis. The history of the Basel accords indicates that it will continue to grow, and there is every chance that Basel III is not the end of regulatory reforms ahead. One of the pointers is the common mistake made by regulators in the transition of Basel II when the move to complex, model-based risk weightings started. This also suggests that the next part of repeating the Basel rules will encourage the shift away from difficult risk-weighting towards certain minimum capital levels. This will involve using models to understand the needs higher minimum capital

¹⁵² *ibid* (n 141), at 331.

¹⁵³ For example, the Wall Street Reform and Consumer Protection Act envisage the use of living wills but regulation needs to be prepared.

¹⁵⁴ Gemma Varriale 'The Basel Reforms Dissected' (2013). *International Financial Law Review*, 31(11), 59-59.

¹⁵⁵ *ibid*.

¹⁵⁶ *ibid*.

¹⁵⁷ Richard Reid 'The Year is 2020. Basel 6: How Did We Get Here? - Opinion' (2012) *International Financial Law Review*, 31(10), 61-61, p. 61.

requirements. These rules guarantee the possibility of another embodiment of the Basel accords as Base III evolves to Basel 3.5 or even Basel 4 or higher in the future.

It is clear that Basel III will not prevent another global financial crisis and neither will Basel III prevent another bank failure, such as that experienced by Northern Rock.¹⁵⁸ The failure of Northern Rock was not because it lacked capital but because its business model did not align with the drying up of the wholesale funding market. The thing that will cause the next financial crisis cannot be ascertained because the economic reforms continue to evolve to handle complex financial products, which continue to evolve with management of risk as the underlying factor.

7. Conclusion

In conclusion, the financial crisis is as old as the financial market, and the financial crisis 2007-2009 taps into that history with a partial resemblance with the Great Depression. The complex nature and development of the financial markets is a vital denominator for the current financial crisis, and this prompted the establishment of Basel III because Basel II, which was already in force, could not contain the crisis. This also suggests that the regulation of the banking system will be a continuous process because financial institutions continue to develop innovative, and new financial products that contribute to its expansion. The implementation of financial regulations in alignment with the history of the financial crisis has been ineffective so far, even though financial regulations have continued to evolve leading to the current financial crisis. This shortcoming of financial regulations leading to current financial crisis help determine the notion that regulators have failed in addressing key systemic problems, which is indicative of a likely reoccurrence of another financial crisis if not more.

The Basel accords illustrate the evolution of international financial regulations from Basel I, Basel II and to the current Basel III with the core objective of maintaining financial stability and preventing the likely occurrence of another financial crisis. These regulations have continued to fail to contain the crisis as both capital and liquidity requirements have continued to evolve to meet the needs of a complex and more innovative financial system. The lapses of Basel I resulted in the introduction of Basel II. Basel II could not contain the financial crisis 2007-2009 and this led to the introduction of Basel III.

The financial crisis 2007-2009 left its mark in the financial history because of its relative size, and harshness with contributing factors from the previous

financial crisis and other unknown factors. The deciding factor that contributed to the financial crisis 2007-2009 includes mispricing in credit default swaps, which was unregulated. This largely influenced the mortgage crisis resulting in house price rising and securitization. These led to other contributing factors, and they include regulatory gaps, a global credit gap, excessive leverage by financial institutions and consumers, and low interest rates among others. Casual factors such as bank regulatory framework, regulatory arbitrage, and money market mutual funds did not contribute to the crisis. Regulators would have been able to avoid the financial crisis by monitoring and enforcing of mortgage credit underwriting standards, regulation of the mortgage markets, and an extensive systemic management approach. Governments responded to the crisis through fiscal measures, central bank financing and bail-outs. The intensity of the principal and causal factors of the crisis through the mortgage markets and the overextending homes spilled over into the US financial markets through asset-backed securities. The spill overs extended into other financial markets on a global scale through banks with exposure to the US financial markets leading to massive selloffs, economic slowdowns, and downsizing. The evolution of the financial crisis aligns with the development of the mortgage markets and expansion of the financial markets, with uncertainties ahead. In particular, the mortgage markets have evolved lacking federal regulatory oversight and government control indicative of these uncertainties. These uncertainties prompted regulators to establish Basel III in response to the financial crisis.

Basel III introduces two new liquidity rules and increases the quality and quantity of capital with the purpose of ensuring financial stability by increasing the risk-coverage of bank's capital for securitization, trading books, counterparty credit risk exposure, and off-balance sheet vehicles. The lapses of Basel III still remain in terms of the cost of implementation and if it would be able to accommodate another financial crisis in the future. The improved liquidity and capital rules will hit retail, corporate and investment banking. For example, new capital requirements come with a cost and the new liquidity requirements will reduce the chances of the earning yield of the banking sector. Capital requirements continue to be a reoccurring event pointing toward its evolution. The two liquidity rules under Basel III demonstrate the evolution of liquidity risks because as financial institutions become more complex, it becomes more difficult for banks to acquire liquid asset. These results, in the mismanagement of liquidity risk. A major problem of Basel III is its implementation time resulting in the surcharge of SIFIs and recalibration of risk-weight assets.

It is clear that regulators will have learnt from experience by identifying the sources of incentives

¹⁵⁸ Nick Goodway 'New Bank Capital Rules Won't Stop the Next Financial Crisis' (2010) EVENING STANDARD <<http://www.standard.co.uk/business/markets/new-bank-capital-rules-wont-stop-the-next-financial-crisis-6513008.html>> accessed 28 October.

that contributed to the crisis including the root-causes instead of relying on poor credit rating, or paying high bonuses for placing securitized loans. Regulators should examine the financial crisis from structural and cyclical contexts. From the structural context, regulators should establish stronger liquidity and capital requirements that are sufficiently broad in scope, and narrowing the definition of capital to include only loss-absorbing components such as common equity. From a cyclical context, regulators should avoid economic policies that assist credit expansion. Corrective measures include establishing a systemic risk overseer, enhancing cross-border corporation, and integrating micro and macro prudential frameworks. Central banks also have a responsibility to play in preventing another financial crisis by increasing policy interest rates to twinge asset bubbles, develop less-absorbing activities that will reduce tax burdens and excessive risks on financial institutions.

Evidence points to the evolution of the financial system and international banking regulations in response to the financial crisis with the purpose of promoting both economic and financial stability. There still remain uncertainties ahead indicative of another financial crisis, which Basel III will not be able to accommodate because there is every chance that Basel III is not the end of the international regulatory reforms. Regulators may likely observe another Basel accords in the form of Basel 3.5, Basel 4 or even higher in response to future financial crisis because the cause of the next financial crisis is uncertain. It is obvious that the financial system will continue to evolve to accommodate the changing complex and innovative financial products, which will justify the evolution of capital and liquidity requirements in response to the evolution of the financial crisis to maintain financial and economic stability in the long run.

APPENDIX A

The 2007-2009 Recession in Perspective

Panel A: US, Postwar Recessions vs. 2007-2009 Recession

	Output	Consumption	Investment	Employment
Average postwar recessions	-4.4	-2.1	-17.8	-3.8
2007-09 recession (2007:4 to 2009:3)	-7.2	-5.4	-33.5	

Panel B: 2007-2009 Recession, US vs. Other High Income Countries

	Output	Consumption	Investment	Employment
US	-7.2	-5.4	-33.5	-6.7
Canada	-8.6	-4.6	-14.1	-3.3
France	-6.6	-3.4	-12.6	-1.1
Germany	-7.2	-2.9	-10.2	0.1
Italy	-9.8	-6.6	-19.6	-3.0
Japan	-8.9	-3.6	-19.0	-1.6
United Kingdom	-9.8	-7.7	-22.9	-2.9
Average other high income countries	-8.5	-4.8	-16.4	-2.0

Panel A reveals that the 2007-2009 financial recessions was much worse than the average post-World War II crisis. This does not come as a surprise because the other financial crisis did not have systemic financial crisis. Panel B compares the

financial crisis in the US with those of other countries (Canada, France, Germany, Italy, Japan, and the United Kingdom). Panel B reveals that US sustained high declines in employment (-6.7) and investment (-33.5).

Source: Lee E. Ohanian 'The Economic Crisis from a Neoclassical Perspective' (2010) *Journal of Economic Perspectives*, 24, 45-66.

APPENDIX B

Distinguishing between Tier 1 and Tier 2

A. Capital Elements

Tier 1 (a) Paid-up share capital/common stock
(b) Disclosed reserves

Tier 2 (a) Undisclosed reserves
(b) Asset revaluation reserves
(c) General provisions/general loan-loss reserves
(d) Hybrid (debt/equity) capital requirements
(e) Subordinated debt

The sum of Tier 1 and Tier 2 element will be eligible for inclusion in the capital base, subject to the following limits.

B. Limits and Restrictions

(i) The total of Tier 2 (supplementary) elements will be limited to a maximum of 100% of the total of Tier 1 elements;

(ii) Subordinated term debt will be limited to a maximum of 50% of Tier 1 elements;

(iii) Where general provisions/general loan-loss reserves include amounts reflecting lower valuations of asset or latent but unidentified losses present in the balance sheet, the amount of such provisions or reserves will be limited to a maximum of 1.25 percent points, or exceptionally and temporarily up to 2.0 percentage points, of risk assets;

(iv) Asset revaluation reserves which take the form of latent gains on unrealized securities will be subject to a discount of 55%.

Source: Basel Committee on Banking Supervision 'International Convergence of Capital Measurement and Capital Standards' (1988) BIS <<http://www.bis.org/publ/bcbs04a.pdf>> accessed 28 October 2013.

APPENDIX C

Difference between Basel I and Basel II Capital Requirements

Basel I

$$\frac{\text{Total Capital}}{\text{Credit Risk (old) + Market Risk}} = \text{The bank's capital ratio (minimum 8\%)}$$

Source: Bank for International Settlements, 2001

Basel II

$$\frac{\text{Total Capital (unchanged)}}{\text{Credit Risk (new) + Market Risk + Operational Risk}} = \text{The bank's capital ratio (minimum 8\%)}$$

Source: Bank for International Settlements, 2001

Source: Zoltan Sarkany 'The New Basel III Rules and Recent Market Developments' (2011) SSRN <<http://ssrn.com/abstract=2155112>> accessed 28 October 2013.

APPENDIX D

Basel III Capital Standards

Basel III Capital Standards

	2013	2014	2015	2016	2017	2018	2019
Minimum Common Equity Capital	3.5%	4.0%	4.5%	4.5%	4.5%	4.5%	4.5%
Capital Conservation Buffer				0.625	1.25	1.875	2.5
Minimum Common Equity + Capital Conservation Buffer	3.5	4.0	4.5	5.125	5.75	6.375	7.0
Countercyclical Buffer Regime				0 - 0.625	0 - 1.25	0 - 1.875	0 - 2.5
Minimum Tier 1 Capital	4.5	5.5	6.0	6.0	6.0	6.0	6.0
Minimum Tier 1 Capital + Capital Conservation Buffer	4.5	5.5	6.0	6.625	7.25	7.875	8.5
Minimum Total Capital	8.0	8.0	8.0	8.0	8.0	8.0	8.0
Minimum Total Capital + Capital Conservation Buffer	8.0	8.0	8.0	8.625	9.25	9.875	10.5

Note: All dates are as of January 1.

Source: Bank for International Settlements

Source: Huberto M. Ennis & David A Price 'Basel III and the Continuing Evolution of Bank Capital Regulation' (2011) *THE FEDERAL RESERVE BANK OF RICHMOND* <
http://www.richmondfed.org/publications/research/economic_brief/2011/pdf/eb_11-06.pdf> accessed 28 October 2013.

APPENDIX E

Basel III Ratios and Deadlines

Basel III ratios and deadlines

Ratios	Basel II	Basel III	Deadline
Minimum Tier 1 leverage	n.a.	3%	2018
Risk-weighted ratios:			
1. Minimum Common Equity Capital	n.a.	4.5%	2015
2. Capital Conservation Buffer	n.a.	2.5%	2019
1+2=	n.a.	7%	2019
3. Minimum Tier 1	4%	6%	2015
4. Minimum Tier 1+2	8%	8%	2013
Countercyclical capital buffer	n.a.	0 - 2.5%	2019
Liquidity coverage	n.a.		2015
Net stable funding ratio	n.a.		2018
Deductions from common equity	n.a.		2018

Source: Karel Lannoo 'The Forest of Basel III Has Too Many Trees' (2011) CEPS <
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