

From Basel I to Basel II to Basel III

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Abstract— The financial system of a country is of immense use and plays a vital role in shaping the economic development for a nation. It consists of financial intermediaries and financial markets which channels funds from those who have savings to those who have more productive use for them, in a way leading to money creation. The volume and growth of the capital in the economy solely depends on the efficiency and intensity of the operations and activities carried out in the financial markets. One of the most important functions of the financial system is to share risk which is catered mainly by the banking sector. (Cortez, 2011) Banks are betting that the individuals and companies to whom they lend capital will earn enough money to pay back their loans. This process leads to generation of Risk and in turn necessitates Regulations.

Index Terms— financial system, financial markets, Basel.

I. INTRODUCTION

Although there are a lot of arguments which justify control and supervision of banks, the question whether and how far the sector has to be regulated remains controversial.

Economist Kevin Dowd (1996) compares this issue with generally desirable free trade and asks why the laissez-faire approach could not be applicable for banks. Examining the possibility of free financial system, he comes to the conclusion that, with no lender of last resort or government guarantees, the market would be disciplined and punished by depositors themselves. In his theoretical model, the depositors, being aware of the risks, threaten to close the accounts when the first signs of danger appear. That induces banks to pursue conservative lending policy and transparency. Adequate level of capital therefore serves as an insurance against potential losses to reassure investors. Dowd argues that additional capitalization, being rather costly, makes a bank safer and more attractive to its depositors. So the competition between banks would ensure the most appropriate to the customers' demand degree of capitalization. The exact amount of capital would be determined by market forces.

Representing the opposite point of view, Sheila Dow (1996) brings two main arguments for regulated financial system. She claims that, first, free banking is prone to extreme cyclicalities and second, central banking would automatically emerge in such a system, so there is no point in laissez-faire (Dowd, 1996). Dow bases her position on the very special economic role of money and the uncertainty associated with it". Unlike firms, banks use their liabilities as money, so the purpose of the regulation is in this case to ensure that bank's assets retain sufficient liquidity to meet any reduction in

redeposit, and to discourage such a reduction in the first place". In her article "Why the Banking System Should Be Regulated", Dow reasons, that regulation is warranted because the moneyness of bank liabilities is a public good". The state in turn produces moneyness by inspiring confidence in money's capacity to retain value (Dow, 1996).

Following this line of argument, (Dowd, 1996) derives the necessity to regulate banks from the role they play in financial intermediation, providing liquidity, monitoring and information services. Such importance may increase the probability of a systemic crisis and lead to substantial social costs. High interconnectedness and potential exposure to runs make banks particularly vulnerable to any kind of actual or perceived failure. Thus, the danger of a destructive chain reaction stimulates the idea of implementing bank insuring mechanisms.

Another issue comes from the inability of depositors to monitor banking activities. According to the representation hypothesis of (Dewatripont & Tirole, 1994) the rationale for banking regulation is based on agency problems and corporate governance. A bank structure implies separation of ownership from management, what makes them susceptible to moral hazard and adverse selection problems. Screening and monitoring, though necessary, could be expensive for single depositors, especially for the small ones. That would also lead to a free-riding effect. Therefore, the regulation could facilitate the communication between two sides by taking over the control and supervision that depositors would exert themselves under these certain conditions (Santos, 2000)

If the regulation of banks is really crucial for the system, one has to ask why among other parameters the regulation of bank capital seems to be particularly important. This can be explained by the fact, that the bank has mainly two sources of financing at its disposal. Using borrowed money, the bank has to fulfill its contractual liabilities, which, if not satisfied, can lead to default. Financing its operations with the own funds (equity), the bank does not expose itself to an immediate failure in case the value of the funds decreases. Therefore, the bigger the proportion of own capital in the bank balance sheet, the greater the probability that the institution will comply with its obligations even in difficult times (FDIC, 2003).

Regulations are often designed to address market failures. The prevalence of market failures in domestic financial markets provides incentives for governments to step in, as necessary, by establishing financial regulations. With the globalization of financial markets, market failures have moved to the international level. Global financial instability

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results from the interconnectedness of modern financial systems.

(Singer, 2007) Dramatic episodes of financial instability have become increasingly common in the global economy. Episodes of global financial instability lead inexorably to heated debates about rules and regulations. If the collapse of a financial institution in one country can lead to the sequential collapse of financial institutions in other countries, then should these institutions all be subjected to the same regulations.

Following high number of disruptions happening in the international financial markets like the Herstatt debacle of 26 June 1974 and the breakdown of Bretton Woods system. Responding to the consequences of the downfall, the G-10 countries formed a standing committee at the Bank for International Settlements (BIS) in 1975, called as the Basel Committee on Banking Supervision (BCBS), which later became the birthplace of the Basel Accords. The Committee's decisions have no legal force. The committee formulates supervisory standards and guidelines and recommends statement of best practice, called as Basel Accords, in the expectation that individual national authorities will implement them. In this way the committee encourages convergence towards common global regulatory standards and monitors their implementation, but without attempting detailed harmonisation of member countries supervisory approaches.

Basel Accords refer to the banking supervision accords, they are a series of recommendations on banking and financial regulations, set forth by the Basel Committee on Banking Supervision. They are called the Basel Accords as the BCBS maintains its secretariat at the Bank for International Settlements in Basel, a place in Switzerland and the Committee usually meets there.

Evolution and Comparison of Basel Accords

To date, there have been three adaptations of the Basel regulations, referred to as Basel I (1988), Basel II (2004), and Basel III (2010). These agreements define the main objectives of bank capital, a measure of the degree of risk related to bank assets, the rules relating to minimum capital that must be held by a credit institution, for covering risks and analysis measures, supervision and market discipline.

Basel I – The First Basel Accord refers to the capital standards imposed on credit institutions and provided the following

- *the definition of capital* as composed of core capital and supplementary capital (representing up to 100% of core capital);

- *determining the risk weights* of bank assets, respectively: 0% - zero risk, 20% low risk, 50% medium risk and 100% high risk and also establishing the assets that fall into each risk category;

- *the capital adequacy*, respectively the minimum level that banks had to maintain between capital and assets weighted by risk level; the minimum value of this indicator varies depending on the calculation method, meaning it must be of minimum 8% when it expresses the total capital ratio (the core capital plus the additional capital) and the assets weighted by risk level or at least of minimum 4% if it is calculated as the ratio between the core capital and the assets weighted by risk level.

Thus, through this international agreement is aimed at international level to maintain a minimum level of commercial banks solvency, a level that is required to be complied with at all times. For example, an accelerated increase in the loan portfolio (assets that have 100% risk) must be accompanied by an increase in capital because a drop of the adequacy capital indicator under 8% is unsupported by the supervisory authority bank. Thus, through this indicator is intended to maintain the bank capital to the minimum agreed level, but usually, this ratio exceeds 8% in banking practice, just for reasons of caution expressed by managers of banks.

When Basel I was effected back in 1988, the world was a rather simple place to conduct financial transactions. Over the next several years, financial environments across the globe evolved. Newer financial institutions came into existence. More innovative products and services were introduced. And the nature of financial risks started changing. The simplicity of the protocol gave rapid rise to ingenious (and devious) products and services (such as selling of Credit Swaps by insurance companies) that circumvented some of the more stringent Basel I rules. The shortcomings of Basel I include the following:

- *The lack of risk sensitivity.* For instance, a corporate loan to a small company with high leverage consumes the same regulatory capital as a loan to a AAA-rated large corporate company (8 percent, because they are both risk-weighted at 100 percent).
- *A limited recognition of collateral.* The list of eligible collateral and guarantors is rather limited in comparison to those effectively used by the banks to mitigate their risks.
- *An incomplete coverage of risk sources.* Basel I focused only on credit risk. The 1996 Market Risk Amendment filled an important gap, but there are still other risk types not covered by the regulatory requirements: operational risk, reputation risk, strategic risk *etc*
- *A “one-size-fits all” approach.* The requirements are virtually the same, whatever the risk level, sophistication, and activity type, of the bank.
- *An arbitrary measure.* The 8 percent ratio is arbitrary and not based on explicit solvency targets.
- *No recognition of diversification.* The credit-risk requirements are only additive and diversification

through granting loans to various sectors and regions is not recognized. (Balthazar, 2006)

- No recognition of term structure of credit risk. The capital charges are set at the same level regardless of the maturity of a credit exposure.
- Inadequate assessment of risks and effects of the use of new financial instruments, as well as risk mitigation techniques.
- Simplified calculation of potential future counterparty risk. It ignores the different level of risks associated with different currencies and macro-economic risk. In other words, it assumes a common market to all actors, which is not true in reality.

Critics felt that something more than just Capital Ratios was needed to assess the true risk potential of a bank. And while Basel I focused on key financial risk metrics, it completely ignored the need for a robust risk management process. The international Basel Committee on Bank Supervision saw this as a signal for Basel I to evolve as well, and in 2004 it came up with [Basel II](#) – a series of rules to address the post-1988 financial climate. Basel II transformed the 1988 Basel Accord's primitive capital adequacy rules into a more general risk management regime. In so doing, it largely abandoned the one-size-fits-all rule for more elastic, institution-specific requirements. (Attik, 2011)

Basel II - The New Basel Accord

The Basel II Accord was based on three mutually reinforcing pillars:

Minimum requirements of own funds – the capital adequacy ratio must be at least 8%, calculated as the ratio between the Bank's equity and assets, but this time the assets are weighted according to three risks:

- credit risk
- market risk
- operational risk

The supervisory process for the bank activity that involves:

- internal performance assessment procedures of its own equity
- the supervisory authority is responsible for the assessment mode conducted by banks
- improving the bank-supervisor dialogue
- rapid intervention to prevent the decline in capital

Market discipline which requires more detailed reporting requirements by the Central Bank and by the public regarding the ownership structure, risk exposures, capital adequacy to the risk profile. These requirements involve regular publication of information (every six month by the national banks and quarterly by the internationally active banks).

The Basel II Accord brings a new elements from Basel I, the expansion of the risk weights range, the diversification of the

credit risk mitigation instruments through the use of the derivative financial instruments (credit default swaps, total return swaps, credit linked notes), using ratings to assess clients and internal models developed for determining the expected loss value, given the risk profile. Thus, this approach highlights the fact that the credit risk, although it is the one that can have serious repercussions on the banking activity is not the only important one, so the risk of losses due to the exchange rate volatility, the interest rate or due to some technical or human errors should be commensurate and the capital must be adequate and based on these risks.

For assessing the credit risk, the Basel II Accord proposes three implementation options:-

- The standard approach (Standardized approach) is similar to the one proposed by Basel I, but uses different shares and enables the using the financial instruments derived to limit the credit risk capital and to reduce the capital requirements.
- The methodology based internal ratings (Foundation Internal Rating Based - IRB approach) allows a bank to use their own rating system, including their own calculations on the probability of entering into insolvency, but the losses recorded when the counterparty enters into insolvency are provided by the supervisory institution.
- The advanced methodology based internal ratings (Advanced IRB approach) according to which banks calculate their capital requirements based on their models, with the approval of the supervisory institution.

Going forward, subsequently there were drastic changes in the global financial environment, which led to the Financial Crisis of 2008-09. Which highlighted the various shortcomings of the Basel II as enumerated below:

i) False Sense of Security: An illusion that compliance with Basel II meant that Bank would be adequate to withstand a crisis. The authorities and market actors including banks pursued Basel II as near-complete system of bank regulation. Banks and other financial actors took comfort from the generalized presence of Basel II-compliant national regulation in assessing systemic risk. The complacency engendered by Basel II resulted from two levels of trust. The first was the trust that other actors were following Basel II rules-and hence were minimally robust. The second, and more dangerous, source of complacency was the trust that Basel II had been designed well enough that when financial institutions complied, a systemic meltdown was so remote as to be virtually impossible.

ii) Reliance on Rating Agencies: In the time leading up to the Crisis, credit rating agencies failed to appreciate the risk of certain innovative financial assets. Nor did ratings reflect the heightening of correlated defaults during periods of financial stress. Further, ratings seemed to have been decoupled from any objective content, no longer expressing the probability of default and expected recovery rates upon. An obligation rated AAA required substantially less capital to hold than a B-rated obligation. The accuracy of many pre-Crisis credit ratings of

complex financial products seems doubtful. The Crisis was replete with examples of securitization vehicles' highly rated obligations becoming virtually worthless overnight.

iii) Cyclicity: The accord led to procyclic tendencies. The negative spiral effect resulting from the interplay between asset value declines occasioned by market-to-market accounting and Basel II's rigid capital demands are generally described as procyclicality. In good times, when asset value increases, capital is generated to support asset growth. In difficult times, as asset value declines, banks are constrained to raise additional capital to support the same asset portfolio they previously held. The prevailing cost of capital in the economy may rise in a downturn. Alternately, banks can bring themselves into compliance with Basel II by shedding assets. However, moving assets during period of depressed prices is problematic. Indeed, a general shrinkage in bank activity will drive an overabundant offer of assets onto the market, further undercutting those assets' values. Thus, portrays a tendency to create cascading increases in the decline of asset values.

BCBS. (2008) One of the key shortcomings of the first two Basel Accords was that they approached the solvency of each institution independently. The 2008 financial crisis highlighted the additional systemic risk that the failure of one large institution could cause the failure of one or more of its counterparties, which could then trigger a chain reaction. Within weeks of the Lehman Brothers collapse, the threat of the international banking community collapsing in on itself spurred the Basel Committee to begin working on new accord provisions designed to address the catastrophic loss that had contracted institutional lending and locked down capital holdings. The outcome was the latest Basel Accord – Basel III.

Basel III Accord

Basel III is the third and the latest advancement of the Basel Accords and is a global regulatory standard set by the BCBS on capital adequacy (including a new leverage ratio and capital buffers), market liquidity risk (with new short-term and long-term liquidity ratios) and stress testing focusing on stability. The Basel III reforms to global regulatory standards were agreed by the G-20 in November 2010 and were then issued by the Basel Committee on Banking Supervision in December 2010 (BCBS, 2010). The key aim of these reforms is to strengthen the capital adequacy requirements with regard to quality and quantity of capital which banks must hold in order to absorb losses. The Basel III framework, whose main thrust has been enhancing the banking sector's safety and

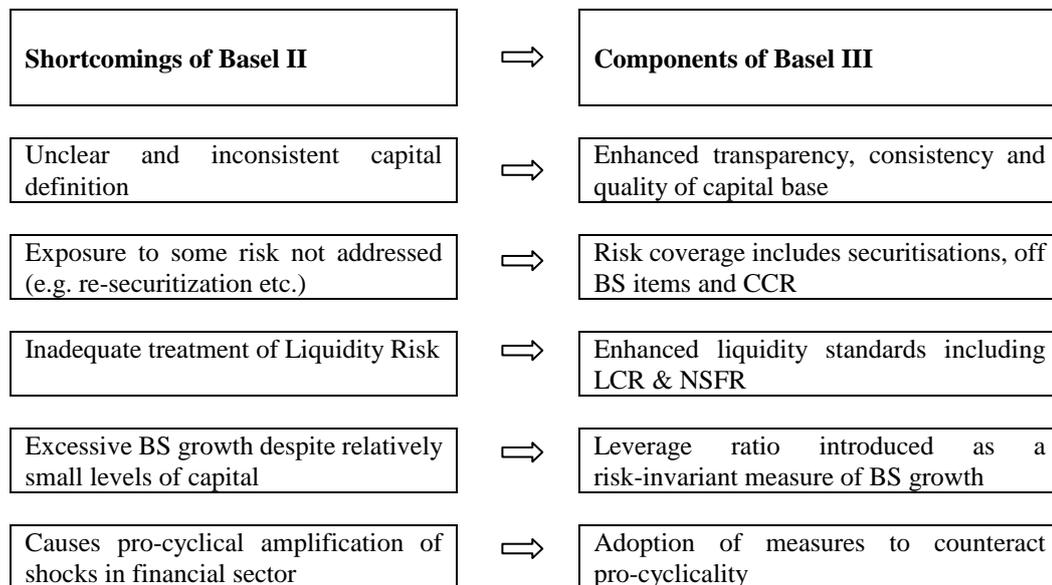
stability, emphasises the need to improve the quality and quantity of capital components, leverage ratio, liquidity standards, and enhanced disclosures. Basel III is therefore an effort to control the causes of the most recent crisis. Regulation of this sort has been effective in the past (BCBS, 2010).

Basel III introduces new and enhanced rules, these includes the introduction of a new and stricter definition of capital – designed to increase consistency, transparency and quality of the capital base – and the introduction of a global liquidity standard (BCBS, 2010). The two new liquidity ratios – the longer-term Net Stable Funding Ratio (NSFR) and the short-term Liquidity Coverage Ratio (LCR)–call on banks to raise high-quality liquid assets and acquire more stable sources of funding, ensuring that they are in agreement with the principles of liquidity risk management. In addition, Basel III introduces a new leverage ratio, a substitute to the risk-based Basel II framework. By setting 3 percent as the ratio of Tier 1 Capital to total exposure, the new leverage ratio may limit banks' scope of action (BCBS, 2010).

Moreover, Basel III increases capital requirements for securities financing activities, repurchase agreements and counterparty credit risk arising from derivatives. Additionally, the new framework has formulated ways of reducing systemic risk and the cyclical effects of Basel II. For instance, it introduces a countercyclical capital buffer and capital conservation, and discusses “through the- cycle” provisioning.

Basel III is poised to have a significant impact on the world's financial systems and economies. The implications for the banking industry from Basel III could be profound. According to BCBS (BCBS, 2010) new minimum capital standards changes combined with the higher capital charges for trading books make some business models less profitable or even unprofitable going forward and banks will need to rethink their strategy and business portfolio in the light of the changes.

The potential impact of Basel III on the banking system is significant. Banks will experience increased pressure on their Return on Equity (RoE) due to increased liquidity and capital costs. In particular, Basel III creates incentives for banks to improve their operating processes – not only to meet requirements but also to increase efficiency and lower costs (BCBS, 2010). Banks are forced to improve their capital buffers through increased capital adequacy requirements, as well as the introduction of liquidity requirements and countercyclical macro prudential measures (BCBS, 2010).



Source: (Edu-Pristine, 2011)

Figure: Improvements of Basel III over Basel II

CONCLUSION

Basel III represents a significant milestone in the development of uniform capital requirements. In particular, Basel III's emphasis on the quality and quantity of core capital - with the overriding goal of fortifying bank capital cushions on a global basis - is the framework's very cornerstone. Furthermore, in attempting to correct the flaws of Basel I and Basel II, the BCBS has designed a regime that incorporates liquidity requirements as well as a number of macro-prudential tools directed at the reduction of systemic risk. None of these reforms, however, are expected to be implemented inexpensively. Capital is indeed critical, but capital is also costly. Over the next few years, regulators must necessarily weigh Basel III's costs and benefits at each stage of the new regime's implementation. At the same time, banks around the world must alter their business models to varying degrees in order to thrive under Basel III.

REFERENCES

- [1] Attik, J. (2011). Basel II: A Post- Crisis Post Mortem. *Transnational Law & Contemporary Problems*, Vol 19:731
- [2] Balthazar, L. (2006). *From Basel 1 to Basel 3, The Integration of State-of-the Art Risk Modeling in Banking Regulation*. Palgrave Macmillan.
- [3] BCBS. (2008). *Comprehensive Strategy to Address the Lessons of the Banking Crisis Announced by the Basel Committee*. Basel: Bank For International Settlements.
- [4] BCBS. (2010). *Basel III: A global regulatory framework for more resilient banks and banking systems*. Basel: Bank For International Settlements.
- [5] BCBS. (2010). *Basel III: International framework for liquidity risk measurement, standards and monitoring*. Basel: Bank For International Settlements.
- [6] BCBS (2010). *Results of the Comprehensive Quantitative Impact Study*. Basel: Bank For International Settlements.
- [7] Cortez, A. (2011). *Winning at Risk - Strategies to go Beyond Basel*. Hoboken, New Jersey: Wiley & Sons, Inc., p. Xiii
- [8] Dewatripont, M., & Tirole, J. (1994). *A Theory of Debt and Equity: Diversity of Securities and Manager-Shareholder Congruence*. *Quarterly Journal of Economics* , 109, 1027-1054.

- [9] Dow, S. C. (1996). *Why the Banking System Should be Regulated*. *The Economic Journal* , 106.
- [10] Dowd, K. (1996). *The Case for Financial Laissez-faire*. *The Economic Journal* , 106.
- [11] EduPristine. (2011). *Basel-III Introduction to Basel - III and Key Enhancements*. Pristine .
- [12] FDIC. (2003). *Basel and the Evolution of Capital Regulation: Moving Forward, Looking Back*. Federal Deposit Insurance Corporation.
- [13] Mishkin, F. S. (2011). *Monetary Policy Strategy: Lessons From The Crisis*. NBER Working Paper Series .
- [14] Santos, J. A. (2000). *Bank Capital Regulation in Contemporary Banking Theory: A Review of the Literature*. BIS Working Papers , 90.
- [15] Singer, D. A. (2007). *Regulating Capital Setting Standards for the International Financial System*. Ithaca and London: Cornell University Press., p. 1