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## Prudential regulation of banks a critical review

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### Abstract

**Introduction:** The global financial system faces escalating risks due to political and strategic uncertainties, with developing economies experiencing significant pressures. This study critically reviews prudential regulations, particularly the Basel frameworks, and their impact on financial stability, risk management, and regulatory practices.

**Discussion:** In response to the 2007-08 financial crisis, Basel III introduced several regulatory frameworks including the Capital Conservation Buffer (CCB), Counter Cyclical Buffer (CCCB), and requirements for Global Systemically Important Banks (G-SIBs). These measures aim to enhance the resilience of financial institutions by improving capital quality and liquidity standards. However, challenges such as regulatory capital arbitrage, risk-weighted asset management, and the effectiveness of macro prudential regulations remain.

**Conclusion:** Basel III's emphasis on higher quality capital and liquidity standards is crucial for financial stability. Nonetheless, ongoing reforms and adaptations, such as Basel IV, are necessary to address emerging risks and ensure comprehensive regulatory frameworks that can adapt to dynamic financial environments.

**Keywords:** Prudential regulation, Basel III, financial stability, risk management

### Introduction

Global risks to financial steadiness have engorged relatively, showing escalating burdens in developing market financial prudence and rising trade activity pressures, and these risks could upsurge pointedly. The understanding about political and strategic uncertainty could be leading to an intense contraction in financial circumstances. Although medium-range financial stability risks persist higher, excessive non-financial sector leverage in developed countries and expansion of exterior borrowing in developing economies. That all raises the resolve for policymakers to augment the financial arrangement's flexibility by finishing the financial monitoring modification schedule and creating and organising macroprudential policy elements. Its discoveries that the international organisation's wide-ranging outline has specified increase to new values that have subsidised the financial organisation—fewer leveraged ones, highly liquor, and extra rigorous management, particularly at giant banks. The shadow-banking extra carefully interrelated to the comprehensive financial distress have been shortened, and now furthestmost nations have macro-prudential establishments and instrument manage and comprise peril to the complete financial system.

In return for the financial crisis of 2007-08, Basel 3 announced some regulatory frameworks engaging in as capital conservation buffer tool (CCB), counter cycle buffer stock optional tool (CCCB) and G-SIB (global systemically important). The capital-risk-management leverage ratio for risk capital with LCR and NSFR (liquidity coverage ratio, net stable funding ratio) was announced. Channelisation of financial modernisation over the regulatory-capital arbitrage (RCA) determines the quality of regulated capital, also creates falsification in the measurement of regulatory capital ratio, which affects investors' identification of real lying risk. On the other hand, bank risk management policies create financial innovation, and more derivatives banks try to reduce the cost of capital. Macro-prudential regulation is the necessity to decline to RCA. Basel 3 generates guidelines based on multiple metrics systems followed by risk-weighted capital-ratio and supervisor inclusive legal outline. While prudential norms are for security concerns of depositors and stability of the financial system reflect on systematic risk. The Bank system is criticised built on the quality of taking the more risk that misinterprets economic exposure.

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One more dimension of RCA is the cost of that capital which reduces the gap between the economic constituents of transaction and legal treatment. Lowering cost or boosting capital risk ratio by the bank and financial institution, for this Basel provide options, such as rise measurement of regulatory capital or numerator of equity-debt ratio rise, or cut the total weighted asset ratio.

Empirically component of economic capital effect by enlarge deviation from its regulatory capital. But assumption perfect competition stimulates a significant capital buffer from above minimum regulatory capital. Lastly, securitisation is the finest tool for facilitating the bank’s lending by unlocking supplementary finance to the bank and cutting the risk of default on loans. So Basel 3 focused on construction superior capital, strength, the flexibility of banking regularity, and liquidity risk coverage.

Basel 1 follows the “one size fits all” model and sets an 8% requirement of capital for capital risk. In Basel 3, four buckets of trouble such as 0 per cent, 20 per cent, 50 per cent, and 100 per cent taken, here 100 per cent denote full charge of capital to eight percent of risk value Basel 1 and 50 per cent showing direct capital for 4 per cent.

Basel 2 based on three pillars based unexpectedly on the cut force of risk taking by emphasised banks to set higher capital provision for high risk.

The Basel 3 capital new guidelines initiate by tightening the classification of Tier 1 capital, which persisted no change from Basel 1 to Basel 2. It stimulates further dependence on unadulterated equity, asserting that Tier 1 capital would be the main procedure of supervisory capital: at least 6 per cent (comparison 4 per cent in Basel 2 guideline) and a minimum of 50 per cent of the total money. Under Tier 1 capital, shared equity would be the dominant arrangement of capital which is “4.5 per cent” (comparatively by two per cent from Basel 2 guideline). As a significance, the chief share of

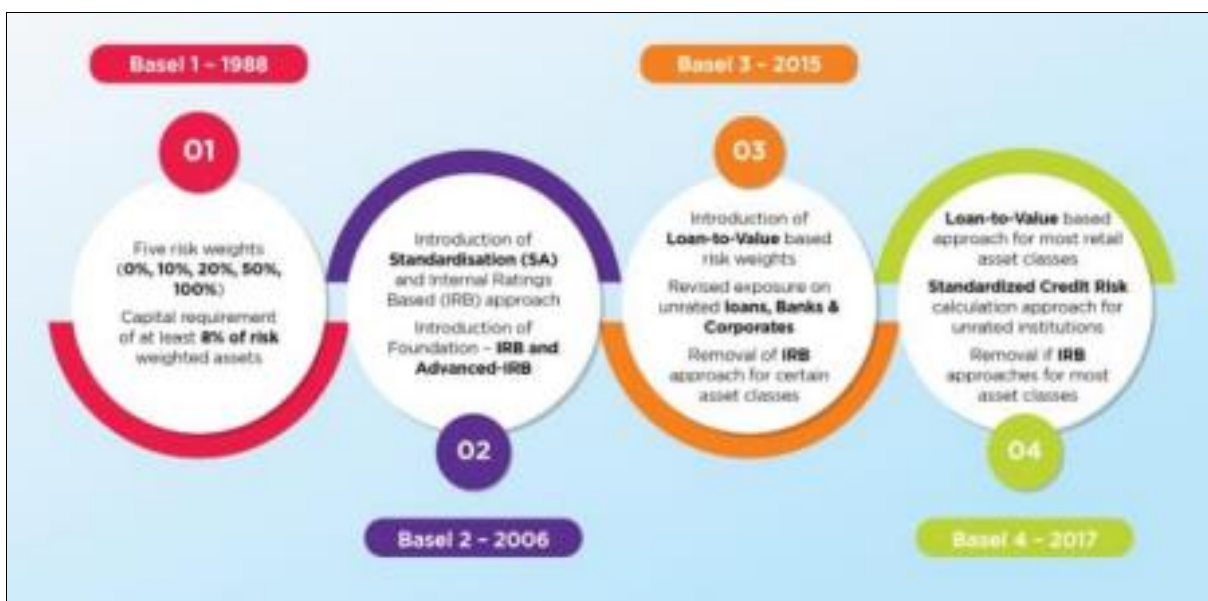
mutual equity in Tier 1 capital and the percentage of “Tier 1 capital” in whole money ( as the summation of Tier 1 and Tier 2) has been enlarged up to level 75 per cent under Basel 3, refining the global level of superior quality capital in the banking industry. Moreover, pioneering structures in non-equity money tools are not adequate, while in Tier 3 capital, it has been eliminated. Basel 3 doesn’t define the capital for what, although it represents high-quality capital and earnings.

Also, risk and uncertainty are two different things as the risk-weighted model with the more straightforward concept. Basel needs to set the level of capital accordingly to measurable risk. However, the capital was for not measurable uncertainty.

Also, with the Basel 3 framework making capital buffers with capital conservation help, the bank needed 2.5 per cent holding for capital. The quantity of capital for unexpected loss depends upon the amount of risk (asset side of bank book) and how that risk shifted from bank creditor through the financial safety net. Picking theory significance here supported the concept of additional finance preference for debt issues, not for more lending. It shows debt finance or short-run debt is a necessary part of finance.

Change in the calculation of credit risk from 1998 to 2017

For analysis the development phase of credit risk from the period after liberalisation included the correlation between risk and impact on transaction. There were four phases from Basel 1 to Basel 4 with major changes in the norms related to credit risk management. Basel 3 major focus is to give security to reserve before collecting the funds. It focuses on resilience of the financial system and risk management. In India it was implemented through RBI from April 1, 2013. Indian banks have to maintain a higher amount of capital requirement including Tier 1, Tier 2, and Tier 3. Also have to maintain a counter cycle buffer in times of excessive credit growth.



Source; from Basel report 2017

**The conceptual variability of Basel framework–**

Basel 2 had no implication change done regarding market risk in comparison to Basel 1. It seems focused towards self-regulation. The bank’s standardised internal rating approach

based on the bank regulatory framework and advanced thought about everything should be provided.

The realisation of the failure of dealing with the comprehensive financial crisis developed further Basel

innovating series. Although both Basel “2 and 2.5” had no significant difference. It was a multifaceted and monotonous part of monetary-based regulations such as leverage, variation in investment from commercial banking, liquidity flow, and the problematic of TBTF (“too big to fail”). It would also claim that methods for capturing trade book risk lead to dealing with adverse shock. Its significance is to recover the outline’s risk exposure in a specific area and uplift the inclusive level of money requirement. Primarily concentration upon market risk and memorial it somehow to bridge the gap off loophole of regulatory arbitrage. Regular arbitrage is like an instrument showing assets in a trading account because it has a lower capital requirement.

It depends on the calculation of risk management. Basel 1 had direct accord of 1981 and in 1996 amendment risk, conceptualising how it should be calculated. It includes two terms- first is a maximum of provision VAR(value at risk) and second is a multiplier multiplied by average VAR with specific risk change to take care of specific credit. Stressed VAR and simple VAR have a difference in the calculation of days of risk assets. No change in calculation.

Total = Max (VAR<sub>t-1</sub>. Multiplier (VAR average) + Max (Stressed VAR<sub>t-1</sub>. multiplier (Stressed VAR average).

Here average is meant for 60 days and the first part is called VAR, and the second called Stressed VAR, also Stressed VAR > VAR. So, VAR taken a year on average was a historical simulation while in Stressed VAR, we count 250 days or one year of any risky environment for a particular stock or equity. As stressed, VAR doesn’t have to be the same for all the banks, depending on an individual bank’s portfolio. So, if a bank had too much exposure to, for example, mortgage security, then 2008 was an excellent financial year, but if the bank had exposure to equity, it might not.

Basel 3 defines the ‘capital’ but FRTB (“fundamental review’ of the trading book”) for determining the no capital risk definition and proposed market risk. It also increases the amount of capital for credit risk and tightens the purpose of capital liquidity requirement. Nevertheless, this task is complicated because the risk of balancing sheets and financial protection networks are harshly connected. The more challenging the protection network (“deposit insurance and anticipated bailout”), the more the taxpayers bear the risks, and the stouter the inducements for a bank to take more risks on the assets column of the balance sheet.

However, the risk element of the balance sheet is precise with the bank, idiosyncratic and general issue with the financial protection network. The regulator apportions the former through micro prudential parameter; the second through macro-prudential code. Micro prudential code is planned to boost individual financial institutions’ steadiness, while the macroprudential parameter is anxious with the constancy of financial arrangements. Consequently, macroprudential infers more intensive coordination and instruction across organisations, which should not happen in the micro prudential principle. Instead, financial organisations should be permitted more opportunity to accomplish risk and, consequently, depart from Basel directions.

In terms of macro and micro-level regulatory framework

needed different tools or focus of interest. There is the probability of a trade-off between price constancy and financial constancy by taking into account technology-driven variables and animal spirit. Finance stability when  $AD = f(P_0, Y_0)$  and  $AS = f(P_0, Y_0)$  with at full employment in factor market  $IS = f(i_0, Y_0)$  and  $LM = f(i_0, Y_0)$   $D_0(f) = f(W/P)$  and  $S_0(f) = f(W/P)$ .

Adding technology led to efficiency and more production from the given input. So, increase AS shift to the right. Resultant, shift in  $AD^1$  and  $IS^1$  to the right side. Here Supply output effect > demand output effect. So, the expansion of monetary policy -  $LM = f(i_0, Y_1)$  leads to a lower price level  $P^1$   $AD < AS$  Now dependency on policy regime. If here assume that the central bank goes with the monetary stimulus (more stock of money with the low rate of interest), so  $LM = f(i_1, Y_2)$ .

With the change in  $i_0$  to  $i_1$   $AD = (P_0, Y_2)$  again in full-employment equilibrium. Here monetary phenomena focus upon price stability with lower interest rate and that stimulus to asset price relative to future increase in the price level. That generates a kind of risk of financial crashes with high asset prices and with risk of financial stability (Borio, 2003)<sup>[3]</sup>. That trade-off because of technology-driven and expansionary monetary policy. Different countries had different targets to whether the focus on price stability or financial stability or both. As in our example, the E3 rate of interest is too low with a high asset price. If crises occur, we go down with lower AD, and it’s called a recession situation.

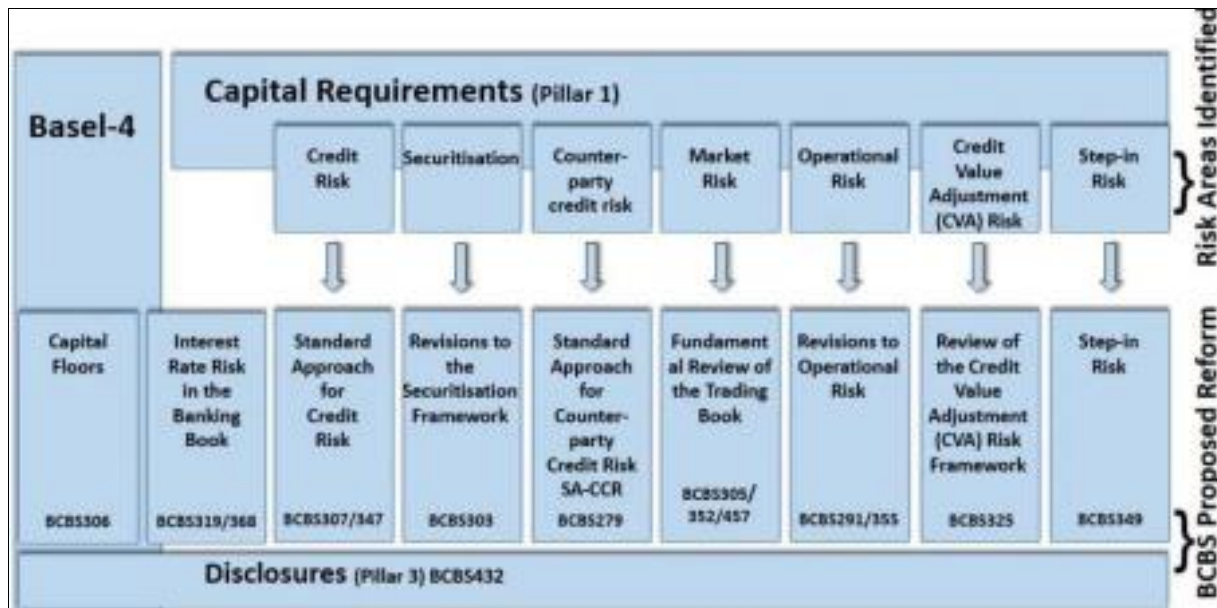
Another aspect is the animal spirit, which is producer certainty on consumer or extreme credit creation by banking structure. AD increases because of the wealth effect and availability of more credit. This liquidity implies more increases in AD. Although this is an expansion of output is artificially based on credit creation. When it is in excessive capacity or shocks,

stimulus AD and AS shift again to the left or decrease and following price stability over other stability objectives in boom timing do nothing for excessive credit creation. That was similar to the crisis of 2003 and 2008, primarily central banks in Europe, focusing on price stability and success but can’t control stimulus in the asset market that affects financial stability. So for preventing financial crises needed more cooperation between the supervisory and macro prudential aspects. The macro aspect of prudential norms is to limit the risk of a financial wave of crisis. These could represent various forms of capital, margin requirement, equity, and loan requirement with the business cycle’s help. For reform in liquidity and reliability in the short-run funding, the two new supervisory liquidity ratios for banks that occurred from the crisis one was the “liquidity coverage ratio” (LCR), and the second was the “net stable funding ratio” (NSFR). However, the LCR concept analyses the liquidity assets with a high-stress level for one month, while the second concept deals with the difference between asset and liability maturities for one year. The financial sector assessment program demonstrates the importance of wholesale funding and a review of necessity risk in liquidity.

Liquidity data might be inadequate if stress testing tools and insight are not correctly used. Recently, foreign currency risk and liquidity of non-banks evaluated for new reform

guidelines in the money market for the decline in run risk. That concept recognised in the institutional framework in the US economy as high investment in less liquidity corporate-debt had been going toward a mark to the market basis, leading to a decline in investor encouragement to run

against stress time and hypothetically threatening solvency. Because withdrawal of holding assets and holding of liquidity assets parallel forces investors to default and sell assets.



Source: disclosure requirement booklet by PWC (Roth, 2020) [9]

Basel 4 will announce their norms and criteria; the problem with these models will be subjective because minimising capital requirement from credit institutions for-profit motives differ. Basel 4 needs more working with data and more quantitative studies for efficient implementation of regulation and standard. Every country had a different level of equipment for applying it. In a concerning country like Europe, due to the lack of external credit rating working with 20, 50 and 100 percent levels of risk, only 20% of banks had different rating standards. At the same time, external credit risk spreadly used in the USA in the corporate sector.

**Review of literature**

Shafiq and Nasr (2010) [11], in their article titled “Risk Management Practices Followed by the Commercial Banks in Pakistan”, discovered the instrument of risk supervision and shadowed by groups of the bank of Pakistan. Both primary and secondary data were taken. There was variation in the risk management policy of private sector banking and public sector banking. It may be due to a different understanding of risk and staff management. Commercial banking needs more emphasis to more customise training courses for the need for risk management at a personal level. Mehra, 2011 in the article titled “Operational risk management in Indian Banks: Impact of ownership and size on a range of practices for implementation of advanced measurement approach”, For exploring the impact of operational risk practice by Indian bank and worldwide bank, by taking 31 Indian banking and around 121 banks at world level for sampling by reliability analysis and factor analysis More awareness and Operational risk were equally more critical for developing country. There would be a massive gap in practice adopted by Indian banks to control

operational risk, and comparatively, the bank followed an advanced measurement approach at the worldwide level. In his article Titled “Bank Capital Structure and Financial Innovation: Antagonists or Two Sides of the Same Coin?” (Sasso, 2016) [10] Lorenzo Sasso elaborated micro and macro-prudential frameworks to reduce the risk of financial innovation of regulatory capital arbitrage. And also used hybrid instruments and structured finance mechanism tools for the validity of the problem of regulation of financial risk management tools. The implication of Basel 3 created an inclusive legal framework of supervision and highlighted the risk-weighted capital ratio in this. It emphasised a balance between regulation and enforceable standard. Using the above approach highlights the problem faced by regulatory capital arbitrage and its distortion effect on capital. However, International Accounting Standards with the Basel committee try to reduce these conceptual problems by contrasting them with the international accounting standards and financial institutions’ final result. John Kwaku Mensah Maputo, in his article, analysis the efficiency and regulation procedure of Basel 3 (Basel committee on banking services) as titled “Analysis of Basel III and Risk Management in Banking”. By simple research, analysis highlights the failure of the number of issues in the Basel framework. He emphasised the need for another institute or system to cointegrate the regulation of financial authority with Basel 3. Mainly concluding the reform of the financial framework could not recognise the issue of external rating dependency, the ethical value of authority, manipulation of discoveries, and cost of management or regulation. The solution for the Basel framework is taken as the only solution for resolve but needs more regulatory framework for integrating financial regulation. (Mawutor, 2014) [5].

A. Blundell, Wignall and P. Atkinson, in their article titled "Thinking Beyond Basel 3: Necessary Solution For Capital And Liquidity" (Adrian Blundell, 2010) [1], evaluate for more technical complexity of financial regulation, risk could be transformed in credit flow system by different regulatory and tax regime. It was expanding the leverage effect without notice. Ultimately, the financial crisis came because reform was correlated with previous phenomena as higher tier capital led to more cumulative distortion compared to pre-phase reform because of the negative correlation of leverage ratio with the loss of financial crisis. The leverage ratio and risk-weighted are not worked together; if the leverage ratio is low, the capital ratio is highest because of arbitrage activity. There would be a need to penalise arbitrage regulation in liquidity problems. On the column of cash inflow, supervisors and banks requirement to confirm zero absorption on limited foundations and wholly-performing assets. Not any credit accommodations prolonged to the bank could be included as inflow. The difference in treatment of regulation required more about shadow banking phenomenon, with its suitability. Common level Risk-weighted assets (RWA) framework and concentration problem of pillar 1 need more modification such as the quadratic rule of deviation from the diversification of portfolios would be a proper way to deal with that.

Mete Feridun, in his article titled "Basel IV implementation: a review of the case of the European Union" (Feridun, 2020) [4], told about the consequence of Basel 4 (the final level of Basel 3), Regarding the European Union as a case study and with the help of primary and secondary data, the comprehensive analysis of practical implausibility of regulation of banking system. With the point of financial stability, the implementation timeline for reform of Basel 3 with the European Union concludes essential at world level. Basel 4 includes all types of risk but focusing on advanced IRB, the revised version of CVA risk, progressive measurement approach by reform SA approach, and output floor level, not below 72.5%. As more, the adjournment of the application of Basel 4 should not contain postponement banks' provisions.

### India and significance of Basel norms

Financial crises stimulate the lower rate of interest or zero lower bound for an economic boost. At that, monetary variables can't further lower. In the US, the rate of interest was at a lower level or near zero from 2008 to 2015, and in 2020 it is also near zero. A lower rate of interest leads to more inadequate aggregate supply, and further recession occurs. The traditional theory of identifying monetary challenges failed, and econometrics tools also failed in the presence of unconventional monetary policy. For example, cannot determine the effect of a variable that had no value of variance, not had a value of autoregression (VAR), and sampling valueless, and that ultimately data was merging difficult for time series data of pre and post-financial crises. Although the alternative method in this situation is by using structural dynamic stochastic general equilibrium (DSGE). As there is a trade-off in both approaches, and both are complementary approaches. The shadow rate is the shortest maturity rate by estimating its yield curve, which means it is implied by the structure term with ZLB.

There are two forms of reform, one in economic form and

the second in prudential form. Before 1991 Indian monetary system followed to control and tighten the policy of interest rate. After hindering efficiency and productivity, RBI adopted the prudential arrangement. On the recommendation of Narasimha committee 1998 issued prudential norms for ensuring financial security, soundness, and solvency of the banking system. The mainly affected are NPA, operational diversification, and capital adequacy as the value was increased from 50,815 crores (march 31<sup>st</sup> 1998) to 70,904 crore (march 31<sup>st</sup> 2002) of gross NPA in schedule commercial banking with public sector banking this value decline around from 90% to 80% of the period (1998-2002). That variable was showing the quality of assets and reliability of the banking system. Higher NPA and bad debt are positively related, and if net NPA is greater than the net worth of a bank, it leads to negative net worth. The NPA deposit ratio with credit deposit ratio are negatively related; it means the banking industry in India concerning securitisation of its assets is working significantly for the period 1995 to 2010 (Ramesh Chandra Das, 2014) [8].

CAR as a tool of explaining capital as % of the exposure of its risk-weighted credit. Higher CAR indicated to enforcement of decline operation cost and by decline risk, increase in long-run viability. Diversified risk as a tool of maximisation economies of scale by enlarging the consumer base and services of banking. According to the bank's regulatory consistency assessment program report for international settlements, required under Basel norms is 4.5, 6, and 8 for the min common equity ratio, tier 1 capital, and min total capital ratio. Simultaneously, countries like India, China, South Africa, Mexico, Switzerland, and Singapore apply it as more than required by Basel 3.

Risk-Weighted of the corporate exposure and banking sector in BASEL 3 – In the case of bank risk-weighting, it ranges from 20% to 150% based upon an external rating scale. Under BCBS, a new approach, as "Standardised Credit Risk Assessment Approach" was introduced, then the Basel 2 framework which was more clarified. It is based upon both qualitative and quantitative phenomena. For stable net assets, value authority believed rule changes were significant if quantitative information depended on each other. The financial crisis opening with the stable net asset value less badly impacts than variable net asset value. In India, the bank's sufferers' Procyclical effects through the bank's response to these losses are lesser if the bank had supplementary equity to initiate with. Empirical studies show analysis of systematic risk and the role of bank equity for declining it. It also highlighted bank solvency and its gap of recovery. Suppose one bank can't raise equity at the given price level, including insolvency of the bank. For example, value of equity =  $Ab + Od - fd$ . Here  $Ab$  is bank assets value,  $Od$  is the value of default on the debt, and  $fd$  is the face value of debt. If a new equity issue is  $En$  since the default option is non-negative here, then equity will be =  $Ab + Od - fd + En$ . in that situation, technically, the bank's insolvent exists. So, the bank is unable to increase further inequity at a price known by the shareholder.

The Indian financial system might be stable with a low growth rate, as mentioned in the financial stability report 2018. A global economy with uncertainty weighed on consumers' confidence, and sentiment exists as a critical

strain for global growth. As the later implication of BIS norms, developing countries faced more outstanding non-performing assets than the advanced countries that applied it earlier. That is why the banking sector in India dramatically faces high NPAs in the year 2015-16. Also, note that non-performing assets in India based on actual base continually rise since 2014. The financial market and real economy show a disconnect of the Indian economy (RBI “bi-annual Financial Stability Report”). This led to a bubble in the share market and financial instability.

The high valuation of prices of shares connects with the behaviour of more loans by banks or creditors. Later, if the world investor started to withdraw money, and company debt enlarged compared to bond and equity. Then the company can't repay, and ultimately defaulting capital

results in instability of the finance market. On the other hand, stability of monetary policy is the principal objective of the RBI. And explicitly price control stress in. Price stability is not sufficient norms but huge NPAs and defaulting financial institutions would be. The financial risk gets positively affected by the size of the bank while negatively correlated with operational risk. Although capital adequacy and credit of banks are negatively associated with operational risk and positively with liquidity risk of the banking system (N Ahmed, 2011) [7]. If we saw, for example, Islamic bank and conventional bank, the study shows the divergence in using the tools of risk supervision and its show inadequacy of tolls of risk management (Tafri, 2011) [12].

Corporate sector		Banking sector	
Credit rating score	Risk weights	Long term	Short term
credit rating is permitted area			
Between AAA and AA-	20%	20%	20%
Between A + and A-	50%	30%	20%
Between BBB+ and BBB-	75%	50%	20%
Between BB+ and B-	100%	100%	50%
Below B-	150%	150%	150%
credit rating is not permitted			
SCRA grades - Non-SME -SME	Investment grade 65% 85% Others(100% and 85%)	SCRA class CLASS A- 40% CLASS B- 75% CLASS C-150%	SCRA class CLASS A-20% CLASS B-50% CLASS C-150%

Source - (BIS 2.2017) Basel report-2017

**Conclusion**

If the central bank focus needs to focus on financial stability, it needs a more organised and transparent accountability framework. The regulatory authority prevents the emergence of a low level of shadow banking organisation, agreement of short-run and risk-taking institutions, macroeconomic risk, and the procyclical aspect of the financial institution.

The strategy of innovation by BIS 2025 (BIS, 2019-20) promotes supplementary collaboration in central banks to face the challenges of financial innovation, because this innovation leads to extra efficiency and transparency. The monetary framework celebrated a decline in the rate of interest rather than the surplus of savings from investment or taste and preference of the investors. A lower interest rate creates a lower capacity for monetary rule and does not build an imbalance of the financial framework. These innovations mainly focus upon stretching the capacity building framework with its footprint at the global level. The share of knowledge in financial technology-related development strategy uses and favours administrative tools of management for recovering financial crises.

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