Basel III

There was a necessity, by the Basel Committee, for a major overhaul of Basel II due to the 2007-2009 credit risk. The capital requirement for market risk was increased by Basel II.5. Credit risk capital requirements were to be increased by the Basel Committee as well. The definition of the needed capital was to be tightened and addressing liquidity risk needed regulations.

In December 2009, the Basel III proposals were first published. In December 2010, the final version of these regulations was published, after a quantitative impact study and a various international summits. The following are the six parts to the regulations:

i. Capital Definition and Requirements
ii. Capital Conservation Buffer
iii. Countercyclical Buffer
iv. Leverage Ratio
v. Liquidity Risk
vi. Counterparty Credit Risk

Capital Definition and Requirements

Under Basel III, the components of a bank's capital are as follows:

i. Tier 1 equity capital;
ii. Additional Tier 1 capital; and
iii. Tier 2 capital.

The share capital and retained earnings are included in Tier 1 equity capital also known as core Tier 1 capital. Goodwill or deferred tax assets are not included. To mirror defined benefit pension plan deficits, Tier 1 capital must be adjusted downwards. For minority interests and capital issued by consolidated subsidiaries, some different rules are also applicable.

In the additional Tier 1 capital category, items previously considered to be Tier 1 that are not common equity, e.g., non-cumulative preferred stock, are included. In Tier 2 capital, debts subordinated to depositors with a five-year original maturity are included.

The Basel Committee referred common equity as going-concern capital. Losses are absorbed by common equity when a bank is a going concern. On the other hand, Tier 2 capital is referred to as a gone concern (a business that is either already in a liquidation state or is likely to enter the liquidation state in the near future). Tier 2 capital absorbs losses whenever the bank ceases to be a going concern.

The following are the capital requirements:

i. Tier 1 equity capital should be a minimum of 4.5% of risk-weighted assets at all times;
ii. Total Tier 1 capital must always be at 6% of the risk-weighted assets; and
iii. Total capital should always be a minimum of 8% of the risk-weighted assets.

Under Basel I, Tier 1 equity capital had to be a minimum of 2% of the risk-weighted assets, and total Tier 1 capital had to be less than 4% of the risk-weighted assets.

Capital Conservation Buffer

A capital conservation buffer in normal times is required under Basel II and should consist of a further amount of core Tier 1 equity capital equal to 2.5% of the risk-weighted assets. Under this provision, capital is built up by banks during normal times to be run down in the event that losses get incurred in times of financial turmoil.

Banks can constraint their dividends until capital is replenished, in cases where the capital conservation buffer has been used up either partially or wholly. Achieving the return on equity possessed by banks in the 1990-2006 period may be problematic due to increased equity capital requirements.

The capital conservation buffer was introduced to ensure that banks have an additional layer of usable capital that can be drawn down when losses are incurred. The buffer was implemented in full as of 2019 and is set at 2.5% of total risk-weighted assets. It must be met with Common Equity Tier 1 (CET1) capital only, and it is established above the regulatory minimum capital requirement. Whenever the buffer falls below 2.5%, automatic constraints on capital distribution (for example, dividends, share buybacks and discretionary bonus payments) will be imposed so that the buffer can be replenished. The distribution constraints increase as the bank's capital ratio approaches the minimum capital requirement (Table 1). The applicable conservation standards must be recalculated at each capital distribution date. Apart from these constraints, a bank will be able to continue to conduct business as normal when it draws down its capital conservation buffer.

Countercyclical Buffer

A countercyclical buffer has been specified by Basel III in addition to the capital conservation buffer. The intention of the buffer is the protection from the cyclicality of bank earnings.

The buffer should be met with Tier 1 equity capital and set to be between 0% and 25% of total risk-weighted assets. The phasing out of the countercyclical buffer requirements takes place in between January 1, 2016, and January 1, 2019.

The countercyclical capital buffer (CCyB) aims to protect the banking sector from periods of excess aggregate credit growth that have often been associated with the build-up of system-wide risks. The CCyB framework became fully effective as of 2019.

Basel III requires that the CCyB be activated and increased by authorities when they judge aggregate credit growth to be excessive and to be associated with a build-up of system-wide risk. The buffer would subsequently be drawn down in a downturn to help ensure that banks maintain the flow of credit in the economy.

The BCBS also published guidelines for authorities making CCyB decisions. This includes a requirement for authorities to adopt an internationally consistent common buffer guide, based on the aggregate private sector credit-to-GDP ratio. This guide provides a common anchor for authorities to decide on the appropriate level of the buffer, with authorities free to rely on other indicators as well when deciding on the appropriate CCyB rate.

The CCyB varies between 0 and 2.5% of total risk-weighted assets and must be met with CET1 capital. Basel III requires banks to calculate and publish their CCyB requirements with at least the same frequency as their minimum capital requirements. As banks need time to adjust to an increase in buffer requirements, a jurisdiction is required to pre-announce its decision to raise the CCyB level by up to 12 months. On the other hand, decisions by a jurisdiction to decrease the level of the CCyB will take effect immediately.

Leverage Ratio

The minimum leverage ratio specified by Basel III is 3%, as an addition to the capital requirements based on risk-weighted assets. The leverage ratio can be defined as the ratio of a capital measure to an exposure measure.

A summation of total Tier 1 capital gives the capital measure. For the exposure measure, we sum up:

i. On-balance-sheet exposures;
ii. Off-balance-sheet items;
iii. Derivatives exposures; and
iv. Securities financing transaction exposures.

Since the data collected by the Basel Committee is on the application from the leverage ratio from banks, both capital and exposure may have changing definitions. There may also be a change of the 3% minimum ratio level.

For the Basel Committee to introduce the leverage ratio, the regulators had thought that there was a lot of discretion in banks concerning the computation of risk weighted-assets. For the computation of total exposure, the discretion is far less.

Banks are required by regulators to satisfy:

i. Capital to risk-weighted assets ratio; and
ii. Capital to non-risk-weighted exposure leverage requirement ratio.

16. Leverage Ratio

16.1 Rationale and Objective

An underlying cause of the global financial crisis was the build-up of excessive on- and off-balance sheet leverage in the banking system. In many cases, banks built up excessive leverage while apparently maintaining strong risk-based capital ratios. During the most severe part of the crisis, the banking sector was forced by the market to reduce its leverage in a manner that amplified downward pressure on asset prices. This deleveraging process exacerbated the feedback loop between losses, falling bank capital and contraction in credit availability. Therefore, under Basel III, a simple, transparent, non-risk based leverage ratio has been introduced. The leverage ratio is calibrated to act as a credible supplementary measure to the risk based capital requirements and is intended to achieve the following objectives:

(a) constrain the build-up of leverage in the banking sector to avoid destabilising deleveraging processes which can damage the broader financial system and the economy; and

(b) reinforce the risk-based requirements with a simple, non-risk based "backstop" measure.

16.2 Definition, Minimum Requirement and Scope of Application of the Leverage Ratio

Definition and minimum requirement

The Basel III leverage ratio is defined as the capital measure (the numerator) divided by the exposure measure (the denominator), with this ratio expressed as a percentage

$$Leverage\ Ratio = \frac{Capital\ Measure}{Exposure\ Measure}$$

Liquidity Risk

Ensuring that banks had sufficient capital for the risk they handled was the focus of the Basel regulations before the crisis. However, a shortage of capital was not the cause of problems faced by financial institutions during the crisis, but rather the liquidity risks taken by the banks.

The tendency of banks to finance long-term needs with short-term funding leads to liquidity risk. This may not be an issue if the market perceives the bank to be financially healthy.

For banks to survive liquidity pressure, the following two liquidity ratios, whose requirements have been introduced by Basel III, should be applied:

i. Liquidity Coverage Ratio (LCR); and
ii. Net Stable Funding Ratio (NSFR).

The focus of the LCR is the ability of banks to survive a 30-day period of liquidity disruption.

$$LCR = \frac{High - Quality \quad Liquid \quad Assets}{Net \quad Cash \quad Out \quad flows \quad in \quad a \quad 30 - Day \quad period}$$

The focus of the NSFR is the management of liquidity over a one-year period.

$$NSFR = \frac{Amount \quad of \quad Stable \quad Funding}{Required \quad Amount \quad of \quad Stable \quad Funding}$$

To determine the amount of stable funding, we compute the product of each category of funding and an available stable funding (ASF) factor to reflect each component's stability. For the required amount of stable funding to be calculated, the items requiring funding must be taken into account. To reflect the permanence of the required funding, each category of the items requiring funding must be multiplied by the required stable funding (RSF).

Liquidity Coverage Ratio

1. Introduction

1.1 In the backdrop of the global financial crisis that started in 2007, the Basel Committee on Banking Supervision (BCBS) proposed certain reforms to strengthen global capital and liquidity regulations with the objective of promoting a more resilient banking sector. In this regard, the Basel III rules text on liquidity – *"Basel III: International framework for liquidity risk measurement, standards and monitoring"* was issued in December 2010 which presented the details of global regulatory standards on liquidity. Two minimum standards viz. Liquidity Coverage Ratio (LCR) and Net Stable Funding Ratio (NSFR) for funding liquidity were prescribed by the Basel Committee for achieving two separate but complementary objectives.

1.2 The LCR promotes short-term resilience of banks to potential liquidity disruptions by ensuring that they have sufficient high quality liquid assets (HQLAs) to survive an acute stress scenario lasting for 30 days. The NSFR promotes resilience over longer-term time horizons by requiring banks to fund their activities with more stable sources of funding on an ongoing basis.

2. Objective

The LCR standard aims to ensure that a bank maintains an adequate level of unencumbered HQLAs that can be converted into cash to meet its liquidity needs for a 30 calendar day time horizon under a significantly severe liquidity stress scenario specified by supervisors. At a minimum, the stock of liquid assets should enable the bank to survive until day 30 of the stress scenario, by which time it is assumed that appropriate corrective actions can be taken.

4.3 The stress scenario specified by the BCBS for LCR incorporates many of the shocks experienced during the crisis that started in 2007 into one significant stress scenario for which a bank would need sufficient liquidity on hand to survive for up to 30 calendar days. The scenario, thus, entails a combined idiosyncratic and market-wide shock that would result in:

a) the run-off of a proportion of retail deposits;

b) a partial loss of unsecured wholesale funding capacity;

c) a partial loss of secured, short-term financing with certain collateral and counterparties;

d) additional contractual outflows that would arise from a downgrade in the bank's public credit rating by up to three notches, including collateral posting requirements;

e) increases in market volatilities that impact the quality of collateral or potential future exposure of derivative positions and thus require larger collateral haircuts or additional collateral, or lead to other liquidity needs;

f) unscheduled draws on committed but unused credit and liquidity facilities that the bank has provided to its clients; and

g) the potential need for the bank to buy back debt or honour non-contractual obligations in the interest of mitigating reputational risk.

5 **High Quality Liquid Assets**

5.1 Liquid assets comprise of high quality assets that can be readily sold or used as collateral to obtain funds in a range of stress scenarios. They should be unencumbered i.e. without legal,

regulatory or operational impediments. Assets are considered to be high quality liquid assets if they can be easily and immediately converted into cash at little or no loss of value. The liquidity of an asset depends on the underlying stress scenario, the volume to be monetized and the timeframe considered. Nevertheless, there are certain assets that are more likely to generate funds without incurring large discounts due to fire-sales even in times of stress.

5.2 While the fundamental characteristics of these assets include low credit and market risk; ease and certainty of valuation; low correlation with risky assets and listing on a developed and recognized exchange market, the market related characteristics include active and sizeable market; presence of committed market makers; low market concentration and flight to quality (tendencies to move into these types of assets in a systemic crisis).

5.3 There are two categories of assets which can be included in the stock of HQLAs, viz. Level 1 and Level 2 assets. Level 2 assets are sub-divided into Level 2A and Level 2B assets on the basis of their price-volatility. Assets to be included in each category are those that the bank is holding on the first day of the stress period.

5.4 Level 1 assets of banks would comprise of the following and these assets can be included in the stock of liquid assets without any limit as also without applying any haircut:

i. Cash including cash reserves in excess of required CRR.

ii. Government securities in excess of the minimum SLR requirement.

iii. Within the mandatory SLR requirement, Government securities to the extent allowed by RBI[1], under Marginal Standing Facility (MSF).

iv. Marketable securities issued or guaranteed by foreign sovereigns[2] satisfying all the following conditions:

(a) assigned a 0% risk weight under the Basel II standardized approach for credit risk;

(b) Traded in large, deep and active repo or cash markets characterised by a low level of concentration; and proven record as a reliable source of liquidity in the markets (repo or sale) even during stressed market conditions.

(c) not issued by a bank/financial institution/NBFC or any of its affiliated entities.

5.5 Level 2 assets (comprising Level 2A assets and Level 2B assets) can be included in the stock of liquid assets, subject to the requirement that they comprise no more than 40% of the overall stock of HQLAs after haircuts have been applied. The portfolio of Level 2 assets held by the bank should be well diversified in terms of type of assets, type of issuers and specific counterparty or issuer. Level 2A and Level 2B assets would comprise of the following:

(a) Level 2A Assets

A minimum 15% haircut should be applied to the current market value of each Level 2A asset held in the stock. Level 2A assets are limited to the following:

i. Marketable securities representing claims on or claims guaranteed by sovereigns, Public Sector Entities (PSEs) or multilateral development banks that are assigned a 20% risk weight under the Basel II Standardised Approach for credit risk and provided that they are not issued by a bank/financial institution/NBFC or any of its affiliated entities.

ii. Corporate bonds[3], not issued by a bank/financial institution/NBFC or any of its affiliated entities, which have been rated AA-[4] or above by an Eligible Credit Rating Agency[5].

ii. Commercial Papers[3] not issued by a bank/PD/financial institution or any of its affiliated entities, which have a short-term rating equivalent to the long-term rating of AA-[4] or above by an Eligible Credit Rating Agency[6].

(b) Level 2B Assets

A minimum 50% haircut should be applied to the current market value of each Level 2B asset held in the stock. Further, Level 2B assets should comprise no more than 15% of the total stock of HQLA. They must also be included within the overall Level 2 assets. Level 2B assets are limited to the following:

i. Marketable securities representing claims on or claims guaranteed by sovereigns having risk weights higher than 20% but not higher than 50%, i.e., they should have a credit rating not lower than BBB- as per our Master Circular on 'Basel III – Capital Regulations'.

ii. Common Equity Shares which satisfy all of the following conditions:

   a) not issued by a bank/financial institution/NBFC or any of its affiliated entities;

   b) included in NSE CNX Nifty index and/or S&P BSE Sensex index.

5.6 All assets in the stock of liquid assets must be managed as part of that pool by the bank and shall be subject to the following operational requirements:

- must be available at all times to be converted into cash,
- should be unencumbered,
- should not be co-mingled / used as hedges on trading position; designated as collateral or credit enhancement in structured transactions; designated to cover operational costs,
- should be managed with sole intent for use as a source of contingent funds,
- should be under the control of specific function/s charged with managing liquidity risk of the bank, e.g. ALCO.

NSFR

2. Objective

The objective of NSFR is to ensure that banks maintain a stable funding profile in relation to the composition of their assets and off-balance sheet activities. A sustainable funding structure is intended to reduce the probability of erosion of a bank's liquidity position due to disruptions in a bank's regular sources of funding that would increase the risk of its failure and potentially lead to broader systemic stress. The NSFR limits overreliance on short-term wholesale funding, encourages better assessment of funding risk across all on- and off-balance sheet items, and promotes funding stability.

4. Definition of NSFR

The NSFR is defined as the amount of available stable funding relative to the amount of required stable funding. "Available stable funding" (ASF) is defined as the portion of capital and liabilities expected to be reliable over the time horizon considered by the NSFR, which extends to one year. The amount of stable funding required ("Required stable funding") (RSF) of a specific institution is a function of the liquidity characteristics and residual maturities of the various assets held by that institution as well as those of its off-balance sheet (OBS) exposures.

5. Minimum Requirement and Implementation Date

$$NSFR = \frac{\left(Available\ Stable\ Funding\ (ASF)\right)}{Required\ Stable\ Funding(RSF)} \geq 100\%$$

6. Calibrations of ASF and RSF - Criteria and Assumptions

ASF and RSF reflect the amount of funding available and required for liabilities and assets (including off balance sheet assets).The amounts of ASF and RSF specified in the BCBS standard are calibrated to reflect the presumed degree of stability of liabilities and liquidity of assets.

6.1 The calibration reflects the stability of liabilities across two dimensions:

(a) Funding tenor – The NSFR is generally calibrated such that longer-term liabilities are assumed to be more stable than short-term liabilities.

(b) Funding type and counterparty – The NSFR is calibrated under the assumption that short-term (maturing in less than one year) deposits provided by retail customers and funding provided by small business customers are behaviourally more stable than wholesale funding of the same maturity from other counterparties.

6.2 In determining the appropriate amounts of required stable funding for various assets, the following criteria are taken into consideration, recognising the potential trade-offs between these criteria:

(a) Resilient credit creation – The NSFR requires stable funding for some proportion of lending to the real economy in order to ensure the continuity of this type of intermediation.

(b) Bank behaviour – The NSFR is calibrated under the assumption that banks may seek to roll over a significant proportion of maturing loans to preserve customer relationships.

(c) Asset tenor – The NSFR assumes that some short-dated assets (maturing in less than one year) require a smaller proportion of stable funding because banks would be able to allow some proportion of those assets to mature instead of rolling them over.

(d) Asset quality and liquidity value – The NSFR assumes that unencumbered, high-quality assets that can be securitised or traded, and thus can be readily used as collateral to secure additional funding or sold in the market, do not need to be wholly financed with stable funding.

7. Definition and computation of Available Stable Funding

7.1 The amount of ASF is measured, based on the broad characteristics of the relative stability of an institution's funding sources, including the contractual maturity of its liabilities and the differences in the propensity of different types of funding providers to withdraw their funding. The amount of ASF is calculated by first assigning the carrying value of an institution's capital and liabilities to one of five categories as presented below. The amount assigned to each category is then multiplied by an ASF factor, and the total ASF is the sum of the weighted amounts. Carrying value represents the amount at which a liability or equity instrument is recorded before the application of any regulatory deductions, filters or other adjustments.

9. Definition and computation of Required Stable Funding (RSF)

9.1 The amount of required stable funding is measured based on the broad characteristics of the liquidity risk profile of an institution's assets and OBS exposures. The amount of required stable funding is calculated by first assigning the carrying value [4] of an institution's assets to the categories listed in the Table 2 below. Unless explicitly stated otherwise in the NSFR standard, assets should be allocated to maturity buckets according to their contractual residual maturity. However, this should take into account embedded optionality, such as put or call options, which may affect the actual maturity date as described in paragraphs 8.2 and 10.2. The amount assigned to each category is then multiplied by its associated required stable funding (RSF) factor, and the total RSF is the sum of the weighted amounts added to the amount of OBS activity (or potential liquidity exposure) multiplied by its associated RSF factor (Table 3). Definitions mirror those outlined in the extant LCR guidelines, unless otherwise specified[5].

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