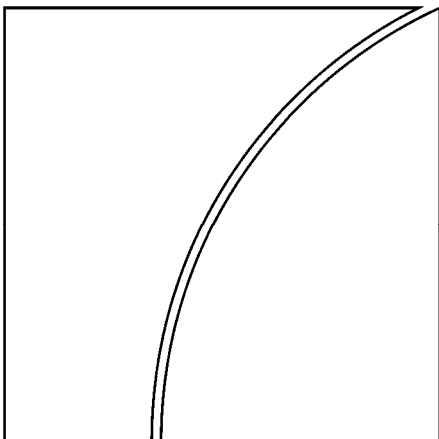


# Basel Committee on Banking Supervision

Consultative Document



## **International framework for liquidity risk measurement, standards and monitoring**

*Issued for comment by 16 April 2010*

December 2009



BANK FOR INTERNATIONAL SETTLEMENTS



Requests for copies of publications, or for additions/changes to the mailing list, should be sent to:

Bank for International Settlements  
Press & Communications  
CH-4002 Basel, Switzerland

E-mail: [publications@bis.org](mailto:publications@bis.org)  
Fax: +41 61 280 9100 and +41 61 280 8100

© *Bank for International Settlements 2009. All rights reserved. Brief excerpts may be reproduced or translated provided the source is stated.*

ISBN print: 92-9131-811-6  
ISBN web: 92-9197-811-6



## Table of Contents

|       |  |    |
|-------|--|----|
| I.    | Introduction.....  | 1  |
|       | Regulatory standards – summary .....                                 | 2  |
|       | Liquidity Coverage Ratio .....                                       | 3  |
|       | Net Stable Funding Ratio .....                                       | 3  |
|       | Monitoring tools – summary .....                                     | 3  |
|       | Application issues for standards and monitoring tools – summary..... | 4  |
| II.   | Regulatory standards .....   | 5  |
| II.1  | Liquidity coverage ratio .....                                       | 5  |
| A.    | Stock of high quality liquid assets.....                             | 6  |
| B.    | Net cash outflows.....   | 11 |
| II.2  | Net stable funding ratio .....                                       | 19 |
| III.  | Monitoring tools .....   | 25 |
| III.1 | Contractual Maturity Mismatch.....                                   | 25 |
| III.2 | Concentration of funding .....                                       | 27 |
| III.3 | Available unencumbered assets .....                                  | 29 |
| III.4 | Market-related monitoring tools.....                                 | 30 |
| IV.   | Application issues for standards and monitoring tools .....          | 31 |
|       | Annex 1 Illustrative Template for the Liquidity Coverage Ratio ..... | 32 |
|       | Annex 2 Full Explanation for Required Stable Funding Categories..... | 34 |
|       | Annex 3 Summary of Net Stable Funding Ratio .....                    | 36 |



## List of Abbreviations

|       |   |
|-------|---|
| ABCP  | Asset-backed commercial paper                           |
| ASF   | Available Stable Funding                                |
| CD    | Certificate of Deposit                                  |
| CDS   | Credit Default Swap                                     |
| CP    | Commercial Paper  |
| CUSIP | Committee on Uniform Security Identification Procedures |
| ECAI  | External Credit Assessment Institution                  |
| IRB   | Internal-ratings based                                  |
| ISIN  | International Securities Identification Number          |
| LCR   | Liquidity Coverage Ratio                                |
| NSFR  | Net Stable Funding Ratio                                |
| OBS   | Off-balance Sheet                                       |
| PSE   | Public Sector Entity                                    |
| RSF   | Required Stable Funding                                 |
| SIV   | Structured Investment Vehicle                           |
| SME   | Small and Medium sized Enterprise                       |
| VRDN  | Variable Rate Demand Note                               |





## I. Introduction

1. Throughout the global financial crisis which began in mid-2007, many banks struggled to maintain adequate liquidity. Unprecedented levels of liquidity support were required from central banks in order to sustain the financial system and even with such extensive support a number of banks failed, were forced into mergers or required resolution. These circumstances and events were preceded by several years of ample liquidity in the financial system, during which liquidity risk and its management did not receive the same level of scrutiny and priority as other risk areas. The crisis illustrated how quickly and severely liquidity risks can crystallise and certain sources of funding can evaporate, compounding concerns related to the valuation of assets and capital adequacy.

2. A key characteristic of the financial crisis was the inaccurate and ineffective management of liquidity risk. In recognition of the need for banks to improve their liquidity risk management and control their liquidity risk exposures, the Basel Committee on Banking Supervision<sup>1</sup> (“the Committee”) issued *Principles for Sound Liquidity Risk Management and Supervision* in September 2008. These sound principles provide consistent supervisory expectations on the key elements of a robust framework for liquidity risk management at banking organisations. Such elements include:

- board and senior management oversight;
- the establishment of policies and risk tolerance;
- the use of liquidity risk management tools such as comprehensive cash flow forecasting, limits and liquidity scenario stress testing;
- the development of robust and multifaceted contingency funding plans; and
- the maintenance of a sufficient cushion of high quality liquid assets to meet contingent liquidity needs.

3. Supervisors, for their part, are expected to assess both the adequacy of a bank's liquidity risk management framework and its liquidity risk exposure. Supervisors are also expected to take prompt action to address the bank's risk management deficiencies or excess exposure in order to protect depositors and enhance the overall stability of the financial system.

4. To reinforce these supervisory objectives and efforts, the Committee has recently focused on further elevating the resilience of internationally active banks to liquidity stresses across the globe, as well as increasing international harmonisation of liquidity risk supervision. The Committee has developed two internationally consistent regulatory standards for liquidity risk supervision as a cornerstone of a global framework to strengthen liquidity risk management and supervision. The standards also respond to recommendations of the G20<sup>2</sup> that called for the Committee to “...enhance tools, metrics and benchmarks that

---

<sup>1</sup> The Basel Committee on Banking Supervision is a committee of banking supervisory authorities which was established by the central bank Governors of the Group of Ten countries in 1975. It consists of senior representatives of bank supervisory authorities and central banks from Argentina, Australia, Belgium, Brazil, Canada, China, France, Germany, Hong Kong SAR, India, Indonesia, Italy, Japan, Korea, Luxembourg, Mexico, the Netherlands, Russia, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, Turkey, the United Kingdom and the United States. It usually meets at the Bank for International Settlements (BIS) in Basel, Switzerland, where its permanent Secretariat is located.

<sup>2</sup> Working Group 1 of the G20, Final report March 25, 2009, *Enhancing Sound Regulation and Strengthening Transparency*.

supervisors can use to assess the resilience of banks' liquidity cushions and constrain any weakening in liquidity maturity profiles, diversity of funding sources, and stress testing practices". Furthermore, the G20 recommended that "...the BCBS and national authorities should develop and agree by 2010 a global framework for promoting stronger liquidity buffers at financial institutions, including cross-border institutions."<sup>3</sup>

5. It should be stressed that the standards establish *minimum* levels of liquidity for internationally active banks. Banks are expected to meet these standards as well as adhere to all the principles set out in the September 2008 *Sound Principles* document mentioned above. As under the Basel Accord (for capital adequacy), national authorities are free to adopt arrangements that set higher levels of minimum liquidity.

6. To further strengthen and promote consistency in international liquidity risk supervision, the Committee has also developed a minimum set of monitoring tools to be used in the ongoing monitoring of the liquidity risk exposures of cross-border institutions and in communicating these exposures among home and host supervisors.

7. This document is organised as follows:

- Section II discusses the two measures of liquidity risk exposure developed to be formally-adopted standards for internationally active banking organisations.
- Section III presents a set of common monitoring tools to be used by supervisors in their monitoring of liquidity risks at individual institutions.
- Section IV discusses application issues for the standards and monitoring tools.

8. The Committee welcomes comments on all aspects of these consultative documents by 16 April 2010. Comments should be submitted by post (Secretariat of the Basel Committee on Banking Supervision, Bank for International Settlements, CH-4002 Basel, Switzerland) or email ([baselcommittee@bis.org](mailto:baselcommittee@bis.org)). All comments will be published on the Bank for International Settlements' website unless a commenter specifically requests anonymity.

### **Regulatory standards – summary**

9. Section II outlines two regulatory standards for liquidity risk which have been developed to achieve two separate but complementary objectives. The first objective is to promote the short-term resiliency of the liquidity risk profile of institutions by ensuring that they have sufficient high quality liquid resources to survive an acute stress scenario lasting for one month. The Committee developed the Liquidity Coverage Ratio to achieve this objective. The second objective is to promote resiliency over longer-term time horizons by creating additional incentives for banks to fund their activities with more stable sources of funding on an ongoing structural basis. The Net Stable Funding Ratio has been developed to capture structural issues related to funding choices.

10. These two standards are comprised mainly of specific parameters which are internationally "harmonised" using specific and concrete values. Certain parameters, however, will need to be set by national supervisors to take account of jurisdiction-specific conditions. For example, the percentage of potential run-off of retail deposits is partially

---

<sup>3</sup> *Declaration on Strengthening the Financial System*, London Summit, 2 April 2009.

dependent on the structure of a jurisdiction's deposit insurance scheme. In these cases, the parameters should be transparent and clearly outlined in the regulations of each jurisdiction. This will provide clarity both within the jurisdiction as well as across borders concerning the precise parameters that the banks are capturing in these metrics. There also need to be public disclosures regarding regulatory standards.

### ***Liquidity Coverage Ratio***

11. The liquidity coverage ratio identifies the amount of unencumbered, high quality liquid assets an institution holds that can be used to offset the net cash outflows it would encounter under an acute short-term stress scenario specified by supervisors. The specified scenario entails both institution-specific and systemic shocks built upon actual circumstances experienced in the global financial crisis. The scenario entails:

- a significant downgrade of the institution's public credit rating;
- a partial loss of deposits;
- a loss of unsecured wholesale funding;
- a significant increase in secured funding haircuts; and
- increases in derivative collateral calls and substantial calls on contractual and non-contractual off-balance sheet exposures, including committed credit and liquidity facilities.

12. As part of this metric, banks are also required to provide a list of contingent liabilities (both contractual and non-contractual) and their related triggers.

### ***Net Stable Funding Ratio***

13. The net stable funding (NSF) ratio measures the amount of longer-term, stable sources of funding employed by an institution relative to the liquidity profiles of the assets funded and the potential for contingent calls on funding liquidity arising from off-balance sheet commitments and obligations. The standard requires a minimum amount of funding that is expected to be stable over a one year time horizon based on liquidity risk factors assigned to assets and off-balance sheet liquidity exposures. The NSF ratio is intended to promote longer-term structural funding of banks' balance sheets, off-balance sheet exposures and capital markets activities.

### **Monitoring tools – summary**

14. At present, supervisors use a wide range of quantitative measures to monitor the liquidity risk profiles of banking organisations. A survey of Basel Committee members conducted in early 2009 identified that more than 25 different measures and concepts are used globally by supervisors. These include both contractual and bank-estimated cash flows and maturity gaps across different time horizons; granular assessments of the liquidity implications of specific balance sheet profiles; and the use of market data to monitor potential liquidity risks at banks. Such metrics enable monitoring of trends both within banking organisations as well as within financial systems, for a more macroprudential approach to supervision.

15. To introduce more consistency, the Committee has developed a set of common metrics that should be considered as the minimum types of information which supervisors should use in monitoring the liquidity risk profiles of supervised entities. In addition, supervisors may use additional metrics in order to capture specific risks in their jurisdictions.

The proposed set of monitoring metrics includes the following and may evolve further as the Committee conducts further work. One area in particular where more work on monitoring tools will be conducted relates to intraday liquidity risk.

- a. *Contractual maturity mismatch*: As a baseline to gain an understanding of the basic, least complex aspects of a bank's liquidity needs, banks should frequently conduct a *contractual maturity mismatch* assessment. This metric provides an initial, simple baseline of contractual commitments and is useful in comparing liquidity risk profiles across institutions, and to highlight to both banks and supervisors when potential liquidity needs could arise.
- b. *Concentration of funding*: This metric involves analysing concentrations of wholesale funding provided by specific counterparties, instruments and currencies. A metric covering concentrations of wholesale funding assists supervisors in assessing the extent to which funding liquidity risks could occur in the event that one or more of the funding sources are withdrawn. The monitoring of this aspect of liquidity risk mirrors the monitoring of large exposures on the assets side of banks' balance sheets.
- c. *Available unencumbered assets*: This metric measures the amount of unencumbered assets a bank has which could potentially be used as collateral for secured funding either in the market or at standing central bank facilities. This should make banks (and supervisors) more aware of their potential capacity to raise additional secured funds, keeping in mind that in a stressed situation this ability may decrease.
- d. *Market-related monitoring tools*: In order to have a source of instantaneous data on potential liquidity difficulties, the Committee suggests utilising market-based data as a valuable supplement to the metrics above. Useful data includes monitoring market-wide data on asset prices and liquidity, institution-related information such as credit default swap (CDS) spreads and equity prices, and additional institution-specific information related to the ability of the institution to fund itself in various wholesale funding markets and the price at which it can do so.

### **Application issues for standards and monitoring tools – summary**

16. This section outlines a number of issues related to the application of the proposed standards and monitoring tools. These issues include the frequency with which banks calculate and report the metrics, the scope of application of the metrics and the amount of public disclosure for both standards and monitoring tools.

## II. Regulatory standards

17. The Committee has developed two standards for supervisors to use in liquidity risk supervision. One standard, the Liquidity Coverage Ratio, addresses the sufficiency of a stock of high quality liquid assets to meet short-term liquidity needs under a specified acute stress scenario. The complementary standard, the Net Stable Funding Ratio, addresses longer-term structural liquidity mismatches.

18. To raise the resilience of banks to potential liquidity shocks, the standards should be implemented consistently as part of a global framework. To this end, most of the specific parameters used in these metrics are internationally harmonised, with specific and concrete values. Certain parameters, however, will need to be set by national supervisors to reflect jurisdiction-specific conditions. In these cases, the parameters should be transparent and clearly outlined in the regulations of each jurisdiction. This will provide clarity both within the jurisdiction as well as across borders.

19. In addition, supervisors may require an individual institution to adopt more stringent standards or parameters to reflect its liquidity risk profile and the supervisor's assessment of the institution's compliance with the Committee's sound principles.

### II.1 Liquidity coverage ratio

#### *Objective*

20. This metric aims to ensure that a bank maintains an adequate level of unencumbered, high quality assets that can be converted into cash to meet its liquidity needs for a 30-day time horizon under an acute 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 proposed stress scenario, by which time it is assumed that appropriate actions can be taken by management and/or supervisors, and/or the bank can be resolved in an orderly way.

#### *Definition of the metric*

$$\frac{\text{Stock of high quality liquid assets}}{\text{Net cash outflows over a 30-day time period}} \geq 100\%$$

21. The Liquidity Coverage Ratio (LCR) builds on traditional liquidity "coverage ratio" methodologies used internally by banks to assess exposure to contingent liquidity events. Net cumulative cash outflows for the scenario are to be calculated for 30 calendar days into the future. The standard would require that the value of the ratio be no lower than 100% (ie the stock of liquid assets should at least equal the estimated net cash outflows).<sup>4</sup> Banks are expected to meet this requirement continuously and hold a stock of unencumbered, high quality assets as a defence against the potential onset of severe liquidity stress. Banks and supervisors are also expected to be aware of any potential mismatches within the 30-day period and ensure that sufficient liquid assets are available to meet any cashflow gaps throughout the month.

---

<sup>4</sup> Or alternatively, net cash outflows over a 30-day time period < 0

22. The scenario proposed for this standard entails a combined idiosyncratic and market-wide shock which would result in:

- (a) a three-notch downgrade in the institution's public credit rating;
- (b) run-off of a proportion of retail deposits;
- (c) a loss of unsecured wholesale funding capacity and reductions of potential sources of secured funding on a term basis;
- (d) loss of secured, short-term financing transactions for all but high quality liquid assets;
- (e) increases in market volatilities that impact the quality of collateral or potential future exposure of derivatives positions and thus requiring larger collateral haircuts or additional collateral;
- (f) unscheduled draws on all of the institution's committed but unused credit and liquidity facilities; and
- (g) the need for the institution to fund balance sheet growth arising from non-contractual obligations honoured in the interest of mitigating reputational risk.

23. In summary, the stress scenario specified incorporates many of the shocks experienced during the current crisis into one acute stress for which sufficient liquidity is needed to survive up to 30 calendar days.

24. This stress test should be viewed as a minimum supervisory requirement for banks. Banks are still expected to conduct their own stress tests to assess the level of liquidity they should hold beyond this minimum, and construct scenarios that could cause difficulties for their specific business activities. Such internal stress tests should incorporate longer time horizons than the ones mandated by this standard. Banks are expected to share these additional stress tests with supervisors. The proposed standard should be a key component of the regulatory approach, but must be supplemented by detailed supervisory assessments of other aspects of the bank's liquidity risk management framework in line with the Committee's *Sound Principles*.

25. The LCR consists of two components:

- A. Value of the stock of high quality liquid assets in stressed conditions.
- B. Net cash outflows, calculated according to the scenario parameters set by supervisors.

#### **A. Stock of high quality liquid assets**

26. The numerator of the LCR is the "stock of high quality liquid assets". Under the proposed standard, banks must hold a stock of *unencumbered*,<sup>5</sup> *high quality liquid assets* which is clearly sufficient to cover cumulative net cash outflows (as defined below) over a 30-day period under the prescribed stress scenario.

---

<sup>5</sup> "Unencumbered" means not pledged either explicitly or implicitly in any way to secure, collateralise or credit enhance any transaction and not held as a hedge for any other exposure. Assets which qualify for the stock of high quality liquid assets which have been pledged to the central bank but are not utilised may be included in the stock.

27. As supported by the Financial Stability Board in its September 2009 report to the G20, the LCR establishes a harmonised framework to ensure that global banks have sufficient high-quality liquid assets to withstand a stressed scenario (as set out in the LCR). In order to qualify as a “high-quality liquid asset”, assets should be liquid in markets during a time of stress and, ideally, be central bank eligible.

#### *Characteristics of high quality liquid assets*

28. The 2007-2009 crisis reinforced the need to examine carefully the liquidity of asset markets, and relatedly, the characteristics that allow some markets to remain liquid in times of stress. Banks need to be careful not to be misled by the wide range of liquid markets during booms. 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 monetised and the time-frame considered. Nevertheless, there are certain assets that are more likely to generate funds without incurring large fire-sales even in times of stress. This section outlines factors which influence whether or not the market for an asset can be relied upon to raise liquidity when considered in the context of possible stresses.

29. During the consultative period and quantitative impact study, the Committee will analyse the trade-offs between the severity of the stress scenario and the definition of the stock of liquid assets which will be held to meet the standard. The final calibration of the factors of the outflows and inflows, as well as the composition of the stock of liquid assets, will be sufficiently conservative to create strong incentives for banks to maintain prudent funding liquidity profiles, while minimising the negative impact of its liquidity standards on the financial system and broader economy. As such, the Committee is assessing the impact of both a narrow definition of liquid assets comprised of cash, central bank reserves and high quality sovereign paper, as well as a somewhat broader definition which could also include a proportion of high quality corporate bonds and/or covered bonds. The Committee will gather data on this defined range of asset classes to analyse the impact and trade-offs of various options involved in defining the stock of high quality liquid assets. The text below describes the general characteristics of high quality liquid assets and outlines the specific instruments for which the Committee will collect data, along with information on haircuts currently associated with these assets in both normal times and periods of stress.

#### *Fundamental characteristics*

- **Low credit and market risk:** assets which are less risky tend to have higher liquidity. On the credit risk front, high credit standing of the issuer and a low degree of subordination increases an asset’s liquidity. On the market risk front, low duration,<sup>6</sup> low volatility, low inflation risk and being denominated in a convertible currency with low foreign exchange rate risk all enhance an asset’s liquidity.
- **Ease and certainty of valuation:** an asset’s liquidity increases if market participants are more likely to agree on its valuation. A liquid asset’s pricing formula must be easy to calculate and not depend on strong assumptions. The inputs into those pricing formula must also be publicly available. In practice this should rule out the inclusion of any exotic product.

---

<sup>6</sup> Duration measures the price sensitivity of a fixed income security to changes in interest rate.

- **Low correlation with risky assets:** the stock of high quality liquid assets should not be subject to wrong-way risk. Assets issued by financial firms, for instance, are more likely to be illiquid in times of liquidity stress in the banking sector.
- **Listed on a developed and recognised exchange market:** being listed increases an asset's transparency.

#### *Market-related characteristics*

- **Active and sizable market:** the asset should have active outright sale and repo markets at all times (which means having a large number of market participants and a high trading volume). Market breadth (price impact per unit of liquidity) and market depth (units of the asset can be traded for a given price impact) should be good.
- **Presence of committed market makers:** quotes will always be available for buying and/or selling the asset.
- **Low market concentration:** diverse group of buyers and sellers in an asset's market increases the reliability of its liquidity.
- **Flight to quality:** historically, the market has shown tendencies to move into some types of assets in a systemic crisis.

30. As outlined by these characteristics, the test of the “high quality” of assets is that by way of sale or secured borrowing, their liquidity-generating capacity is assumed to remain intact even in periods of severe idiosyncratic and market stress: indeed such assets often benefit from a flight to quality in these circumstances. Lower quality assets fail to meet that test. An attempt by a bank to raise liquidity from lower quality assets under conditions of severe market stress would entail acceptance of a large fire-sale discount or haircut to compensate for high market risk. That may not only erode the market's confidence in the bank, but would also generate mark-to-market losses for banks holding similar instruments and add to the pressure on their liquidity position, thus encouraging further fire sales and declines in prices and market liquidity. In these circumstances, private market liquidity for such instruments is likely to evaporate extremely quickly, as evidenced in the current crisis. Taking into account the system-wide response, only high quality liquid assets meet the test that they can be readily converted into cash under severe stress in private markets.

31. High quality liquid assets should also ideally<sup>7</sup> be eligible at central banks. Central banks provide a further backstop to the supply of banking system liquidity under conditions of severe stress. Central bank eligibility should thus provide additional confidence that banks hold a reserve of high quality liquid assets that could be used in events of severe stress without damaging the broader financial system. That in turn would raise confidence in the safety and soundness of liquidity risk management in the banking system.

#### *Operational requirements*

32. This stock of high quality liquid assets must be available for the bank's treasury to convert into cash to fill funding gaps at any time between cash inflows and outflows during the stressed period. These assets must be unencumbered and freely available to the relevant group entities. At the consolidated level, banks may also include in the stock qualifying liquid assets which are held to meet legal entity requirements (where applicable),

---

<sup>7</sup> In most jurisdictions, high quality liquid assets should be central bank eligible in addition to being liquid in markets during stressed periods. In jurisdictions where central bank eligibility is limited to an extremely narrow list of assets, a jurisdiction may allow unencumbered, non-central bank eligible assets which meet the liquid asset characteristics to count as part of the stock.



to the extent that the related risks are also reflected in the consolidated standard. The stock of liquid assets should not be co-mingled with or used as hedges on trading positions, be designated as collateral or be designated as credit enhancements in structured transactions, and should be managed with the clear and sole intent for use as a source of contingent funds. The stock should be under the control of the specific function or functions charged with managing the liquidity risk of the institution. A bank should periodically monetise a proportion of the assets in its liquid assets buffer through repo or outright sale to the market in order to test the usability of the assets.

33. While the LCR is expected to be met and reported in a common currency, supervisors and banks should also be aware of the liquidity needs in each significant currency. The bank should be able to use the stock to generate liquidity in the desired currency and in the jurisdiction in which the liquidity will be required. As such, banks are expected to be able to meet their liquidity needs in each currency and maintain high quality liquid assets consistent with the distribution of their liquidity needs by currency.

#### *Definition of liquid assets*

34. The stock of high quality liquid assets should be comprised of assets which meet the characteristics outlined above. The following list describes the assets which meet these characteristics and can therefore be used as the stock of liquid assets:

- (a) cash;
- (b) central bank reserves, to the extent that they can be drawn down in times of stress;<sup>8</sup>
- (c) Marketable securities representing claims on or claims guaranteed by sovereigns, central banks, non-central government public sector entities (PSEs), the Bank for International Settlements, the International Monetary Fund, the European Commission, or multilateral development banks as long as all the following criteria are met:
  - (i) they are assigned a 0% risk-weight under the Basel II standardised approach, and
  - (ii) deep repo-markets exist for these securities, and
  - (iii) the securities are not issued by banks or other financial services entities.
- (d) government or central bank debt issued in domestic currencies by the country in which the liquidity risk is being taken or the bank's home country.

35. In addition, the Committee will gather data on the following instruments to analyse the impact of this standard on the financial sector. If included in the stock of liquid assets, these instruments would receive substantial haircuts, would comprise not more than 50% of the overall stock, and the portfolio would have to be diversified. The haircut would be applied to the current market value of the respective asset.

---

<sup>8</sup> Local supervisors should discuss and agree with the relevant central bank the extent to which central bank reserves should count towards the stock of liquid assets, ie the extent to which reserves are able to be drawn down in times of stress.

36. **Corporate bonds**<sup>9</sup> that, depending on their credit assessment, receive either a 20% or a 40% haircut and satisfy all of the following conditions:

- Central bank eligibility<sup>10</sup> for intraday liquidity needs or overnight liquidity shortages in relevant jurisdictions.
- Not issued by a bank, investment or insurance firm.
- Low credit risk: assets have a credit assessment by a recognised external credit assessment institution (ECAI) of at least AA (assigned a 20% haircut), or A- (assigned a 40% haircut) or do not have a credit assessment by a recognised ECAI and are internally rated as having a probability of default (PD) corresponding to a credit assessment that is at least AA or A-, respectively.
- Traded in large, deep and active markets characterised by a low level of concentration. The bid-ask-yield spread has not exceeded 40 bsp (assigned a 20% haircut) or 50 bsp (assigned a 40% haircut) during the last 10 years or during a relevant period of significant liquidity stress.
- Proven record as a reliable source of liquidity in the markets (repo and sale) even during stressed market conditions: ie, maximum decline of price or increase in haircut over a 30-day period during the last 10 years or during a relevant period of significant liquidity stress not exceeding 10%.

37. **Covered bonds**<sup>11</sup> that, depending on their credit assessment, receive either a 20% or a 40% haircut and satisfy all of the following conditions:

- Central bank eligibility for intraday liquidity needs or overnight liquidity shortages in relevant jurisdictions.
- Not issued by the bank itself.
- Low credit risk: assets have a credit assessment by a recognised ECAI of at least AA (assigned a 20% haircut), or A- (assigned a 40% haircut), or do not have a credit assessment by a recognised ECAI and are internally rated as having a PD corresponding to a credit assessment of at least AA or A-, respectively.
- Traded in large, deep and active markets characterised by a low level of concentration. The bid-ask yield spread has not exceeded 50 bsp during the last 10 years or during a relevant period of significant liquidity stress.
- Proven record as a reliable source of liquidity in the markets (sale) even during stressed market conditions: ie, maximum decline of price or increase in haircut over

---

<sup>9</sup> *Corporate bonds* in this case only include plain vanilla assets whose valuation is easy and standard and does not depend on private knowledge, ie these do not include complex structured products or subordinated debt. If firms merge, the assets issued by the new firm receive the liquidity value of the respective firm whose assets had the least liquid characteristics before the merger.

<sup>10</sup> *Central bank eligibility*: In some jurisdictions, the list of central bank eligible assets does not include corporate bonds. In these cases, the relevant supervisors may exercise discretion to allow non-central bank eligible corporate bonds provided that they meet the other respective criteria.

<sup>11</sup> *Covered bonds* are bonds issued and owned by a bank and subject by law to special public supervision designed to protect bond holders. Proceeds deriving from the issue of these bonds must be invested in conformity with the law in assets which, during the whole period of the validity of the bonds, are capable of covering claims attaching to the bonds and which, in the event of failure of the issuer, would be used on a priority basis for the reimbursement of the principal and payment of the accrued instrument.

a 30-day period during the last 10 years or during a relevant period of significant liquidity stress not exceeding 10%.

## **B. Net cash outflows**

38. Net cash outflows<sup>12</sup> are defined as cumulative expected cash outflows minus cumulative expected cash inflows arising in the specified stress scenario in the time period under consideration. This is the net cumulative liquidity mismatch position under the stress scenario measured at the test horizon. Cumulative expected cash outflows are calculated by multiplying outstanding balances of various categories or types of liabilities by assumed percentages that are expected to roll-off, and by multiplying specified draw-down amounts to various off-balance sheet commitments. Cumulative expected cash inflows are calculated by multiplying amounts receivable by a percentage that reflects expected inflow under the stress scenario.

39. While most of these factors will be applied in a harmonised way across jurisdictions, there are a few select parameters for which each supervisory regime will determine the percentages to apply to banks in their jurisdiction. In the latter case, parameters and factors need to be transparent and made publicly available.

40. The template in Annex 1 provides an example of the framework that banks should use and the factors that are applied to each category. It is important to note that banks should avoid double counting items – ie in order to be included as part of the “stock of liquid assets” (ie the numerator), the assets can not also be counted as cash inflows, and the assets must be **unencumbered** (not pledged either explicitly or implicitly in any way to secure, collateralise or credit enhance any transaction and not held as a hedge for any other exposure) and **available at all times throughout the period**.

### **Cash outflows**

#### *(i) Retail deposit run-off*

41. Retail deposits are defined as deposits placed at a bank by a natural person, not a legal entity, and exclude deposits placed by sole proprietorships and partnerships. Retail deposits are divided into “stable” and “less stable” portions of funds as described below, with run-off rates listed for each category.

(a) *Stable deposits, 7.5% and higher* - Stable deposits will receive at least a 7.5% run-off factor in each jurisdiction and refer to the portion of deposits which are covered by an effective deposit insurance scheme and where:

- the depositors have other established relationships with the same bank which make deposit withdrawal highly unlikely; or
- the deposits are in transactional accounts (eg accounts where salaries are automatically credited).

An effective deposit insurance scheme refers to one which is in effect and guarantees that it has the ability to make prompt payouts. The presence of deposit insurance alone is not sufficient to consider a deposit “stable”.

---

<sup>12</sup> Where applicable, cash inflows and outflows should include earned interest which is expected to be received during the time horizon.

(b) *Less stable deposits, 15% and higher:* Individual jurisdictions should then create additional factors as required to apply to buckets of potentially less stable retail deposits in their jurisdictions, with a minimum run-off factor of 15%. These jurisdiction-specific factors should be clearly outlined and publicly transparent. Less stable deposits could include deposits which are not covered by effective deposit insurance, high value-deposits, deposits of sophisticated or high net worth individuals and deposits which can be withdrawn quickly (eg internet deposits) and foreign currency deposits, as determined by each jurisdiction.

42. If a bank is not able to readily identify which retail deposits would qualify as “stable” under the above definition (ie the bank cannot determine which deposits are covered by a deposit insurance scheme), it should apply the highest percentage that supervisors deem applicable to retail deposits for the full amount of retail deposits.

43. Fixed or time deposits, regardless of maturity, that have a withdrawal penalty not materially greater than the loss of interest, should be treated no differently from other types of deposits and be subject to the same run-off factor as other deposits in the same bucket. Term deposits which do have a withdrawal penalty that is materially greater than the loss of interest should be treated consistently with the term of their funding – ie qualifying deposits with a term beyond the 30-day horizon would not receive a run-off factor in this scenario and those within the 30-day horizon would either be treated as “stable” or “less stable” according to the definitions above.

44. Foreign currency deposits are deposits denominated in a currency other than the predominant currency used in the jurisdiction the bank is operating in. Supervisors will determine the run-off factor that banks in their jurisdiction should use for foreign currency deposits. Foreign currency deposits will be considered as “less stable” if there is a reason to believe that such deposits are more volatile than domestic currency deposits. Factors affecting the volatility of foreign currency deposits include the type and sophistication of the depositors, and depositors’ purpose of placing such deposits.

(ii) *Unsecured wholesale funding run-off*

45. For the purposes of this standard, “unsecured wholesale funding” is defined as those liabilities and general obligations that are raised from non-natural persons (ie legal entities, including sole proprietorships and partnerships) and are **not** collateralised by legal rights to specifically designated assets owned by the borrowing institution in the case of bankruptcy, liquidation or resolution. Obligations related to derivative contracts are explicitly excluded from this definition.

46. The wholesale funding included in this ratio is all funding that is callable<sup>13</sup> within the scenario's horizon of 30 days or that has its earliest possible contractual maturity date situated within this horizon (such as maturing term deposits and non-secured debt securities) as well as funding with an undetermined maturity.

47. For the purposes of the standard, amounts of unsecured wholesale funding held by the institution are to be categorised as detailed below, based on the assumed sensitivity of the funds providers to the rate offered and the credit quality and solvency of the borrowing institution. This is determined by the type of fund providers and their level of sophistication, as well as their operational relationships with the bank. The run-off rates for the scenario are listed for each category.

---

<sup>13</sup> Taking into account any embedded options to call the funding before contractual maturity.

- (a) *Unsecured wholesale funding provided by small business customers: 7.5%, 15% and higher*

48. Unsecured wholesale funding provided by small business customers is treated the same way as retail deposits for the purposes of this standard, effectively distinguishing between a "stable" portion of funding provided by small business customers and different buckets of less stable funding defined by each jurisdiction. The same bucket definitions and associated run-off factors apply as for retail deposits, with the "stable" portion of unsecured wholesale funding provided by small business customers receiving a minimum 7.5% run-off factor and less stable funding categories receiving minimum run-off factors of 15%.

49. This category consists of deposits and other extensions of funds made by non-financial small business customers<sup>14</sup> of the borrowing institution that are generally considered as having similar liquidity risk characteristics to retail accounts, provided the total aggregated funding raised from one small business customer is less than €1 million<sup>15</sup> (on a consolidated basis where applicable).

50. "Aggregated funding" means the gross amount (ie not taking any form of credit extended to the legal entity into account) of all forms of funding (eg deposits or debt securities for which the counterpart is known to be a small business customer). In addition, "from one small business customer" means one or several legal entities that may be considered as a single creditor (eg in the case of a small business that is affiliated to another small business, the limit would apply to the bank's funding received from both businesses).

- (b) *Unsecured wholesale funding provided by non-financial corporate customers, sovereigns, central banks and public sector entities with operational relationships: 25%*

51. Deposits and other extensions of funds made by non-financial corporate customers (other than small business customers), sovereigns, central banks and public sector entities that are demonstrated to be specifically needed for operational purposes may receive a 25% run-off factor if the customer has an established cash management or other administrative funds relationship with the bank upon which it has a substantive dependency. Only the specific amount of deposits utilised for these operational functions qualify for the 25% factor.

52. Established cash management services include those products and services used by a customer to manage its cash flows, assets and liabilities, and conduct financial transactions necessary to the customer's ongoing operations. Examples of such services include, but are not limited to: provision of information or information systems used to manage the customer's financial transactions, payment remittance and deposit collection and aggregation, investment of excess funds, payroll administration, control over the disbursement of funds, automated payments and other transactions that facilitate financial operations.

53. The portion of these deposits that is fully covered by deposit insurance can receive the same treatment as "stable" retail deposits.

---

<sup>14</sup> Along the lines of the IRB approach in the capital framework, an SME is defined as a legal entity, sole proprietorship or partnership where the reported sales for the consolidated group of which the firm is a part is less than €50 million. See paragraph 273 of the 2006 *International Convergence of Capital Measurement and Capital Standards: A Revised Framework – Comprehensive Version* ("Basel II framework").

<sup>15</sup> In accordance with paragraphs 70 and 231 of the Basel II framework.

(c) *Unsecured wholesale funding provided by non-financial corporate customers: 75%*

54. This category is defined as all deposits and other extensions of funds made by non-financial corporate customers (that are not categorised as small business customers) which are not specifically held for operational purposes (as defined above). The run-off factor for these funds is set at 75%.

(d) *Unsecured wholesale funding provided by other legal entity customers: 100%*

55. The run-off factor for these funds is set at 100% and consists of deposits and other extensions of funds made by financial institutions (including banks, securities firms, insurance companies, multilateral development banks etc), fiduciaries,<sup>16</sup> beneficiaries,<sup>17</sup> conduits and special purpose vehicles, sovereigns and central banks, public sector entities; affiliated entities of the bank and other entities not included in the prior three categories.

56. All notes, bonds and other debt securities are included in this category unless the counterparty is known to be a retail customer, a small business customer or a non-financial corporate customer, in which case the funding can be included in the related categories.

(iii) *Secured funding run-off*

57. For the purposes of this standard, "secured funding" is defined as those liabilities and general obligations that are raised from non-natural persons (ie legal entities) and are collateralised by legal rights to specifically designated assets owned by the borrowing institution in the case of bankruptcy, liquidation or resolution.

58. **Loss of secured funding on short term financing transactions** – in this scenario, the ability to continue to transact repurchase, reverse repurchase and other securities lending transactions is limited to transactions backed by high quality liquid assets. Due to the high quality of these assets, no reduction in funding availability against these assets will occur. For the scenario, a bank should apply the following factors **to all outstanding secured funding transactions** with maturities within the 30 calendar day stress timeframe.<sup>18</sup>

59. Note that there can be no double counting of these assets – ie if a liquid asset is being used for secured funding, it cannot also count as part of the pool of liquid assets or as a cash inflow.

---

<sup>16</sup> Defined in this context as a legal entity that is authorised to manage assets on behalf of a third party. Fiduciaries include asset management entities such as hedge funds, pension funds and other collective investment vehicles.

<sup>17</sup> Defined in this context as a legal entity which receives, or may become eligible to receive, benefits under a will, insurance policy, retirement plan, annuity, trust, or other contract.

<sup>18</sup> To the extent an institution uses a "matched book" financing strategy, ie transactions in which repurchase and reverse repurchase transactions exist, for such matched transactions in which i) the security on each transaction has the same unique identifier (eg ISIN number or CUSIP) and ii) the term of each transaction both fall within the 30-day time horizon, there will be no incremental net cash outflow requirement as these inflows and outflows are assumed to off-set each other.

| Asset Category for existing secured funding transactions   | Amount to add into “Outflows” category, due to lack of roll-over. |
|--|---|
| 1. Government debt issued in domestic currencies by the country in which the liquidity risk is being taken or the bank’s home country.<br><br>2. Marketable securities representing claims on or claims guaranteed by sovereigns, central banks, BIS, IMF, EC, non-central government public sector entities (PSEs) or multilateral development banks as long as all the following criteria are met: <ul style="list-style-type: none"> <li>- they are assigned a 0% risk-weight under the Basel II standardised approach, and</li> <li>- deep repo-markets exist for these securities, and</li> <li>- the debt is not issued by banks or other financial services entities</li> </ul> | 0%  |
| All Other  | 100%  |

(iv) *Additional requirements*

60. **Increased liquidity needs related to downgrade triggers embedded in short term financing transactions, derivatives and other contracts** – (100% of the amount of collateral that would be posted for any downgrade up to and including a 3-notch downgrade). Often, contracts governing derivatives and other transactions have clauses that require the posting of additional collateral upon the downgrade of the institution by a recognised credit rating organisation. The scenario therefore requires that for each contract in which “downgrade triggers” exist, the bank assume that 100% of this additional collateral will have to be posted for any downgrade up to and including a 3-notch downgrade.

61. As contract clauses often specify incremental collateral requirements beyond a 3-notch downgrade, banks should list and supervisors should monitor the cumulative incremental collateral required for downgrades of greater than 3 notches to ascertain the need to increase the stock of high quality liquid assets to address these additional collateral needs. Supervisory oversight should also be employed to monitor potential contractual changes in legal documentation governing transactions that may develop in an attempt to circumvent this requirement.

62. **Increased liquidity needs related to market valuation changes on derivative transactions** – (% determined at national discretion). As market practice requires full collateralisation of mark to market exposures on derivative transactions, banks face potentially substantial liquidity risk exposures to these valuation changes. National supervisors will work with supervised institutions in their jurisdictions to determine the liquidity risk impact of this factor and the resulting stock of high quality liquid assets that should accordingly be maintained. Supervisors should disclose their requirements publicly.

63. **Increased liquidity needs related to the potential for valuation changes on posted collateral securing derivative transactions** – (20%) Observation of market practices indicate that most counterparties to derivatives transactions typically are required to

secure the mark to market valuation of their positions and that this is predominantly done using cash or high quality liquid sovereign debt. For posted collateral that includes cash and high quality liquid sovereign debt, the framework will not require that a stock of liquid assets be maintained. If however, counterparties are securing mark to market exposures with other forms of collateral, to cover the potential loss of market value on those securities, 20% of the value of all such posted collateral will be required to be added to the stock of liquid assets by the bank posting such collateral. This 20% will be calculated off the notional amount required to be posted as collateral after consideration of any haircuts that may be applicable to the collateral category.

64. **Loss of funding on asset-backed commercial paper, conduits, securities investment vehicles and other such financing facilities** – (100% of maturing amount and 100% of returnable assets). Banks having structured financing facilities that include the issuance of short term debt instruments such as asset backed commercial paper, should fully consider the potential liquidity risk arising from these structures. These risks include, but are not limited to i) the inability to refinance maturing debt, and ii) the existence of derivatives or derivative-like components contractually written into the documentation associated with the structure which would allow the “return” of assets in a financing arrangement, or which require the original asset transferor to provide liquidity, effectively ending the financing arrangement (“liquidity puts”).

| Potential Risk Element   | Stock of High Quality Liquid Assets Required  |
|--|---|
| Debt maturities within the calculation period                                  | 100% of maturing amount   |
| Embedded options in financing arrangements that allow for the return of assets | 100% of the amount of assets which could potentially be returned, or the liquidity required |

65. **Loss of funding on term asset-backed securities, covered bonds and other structured financing instruments** – The scenario assumes the outflow of 100% of the maturities within the 30 day period (as this assumes that the re-financing market will not exist).

66. **Draws on committed credit and liquidity facilities** – For the purpose of the proposed standard, credit and liquidity facilities are defined as explicit contractual agreements and/or obligations to extend funds at a future date to retail or wholesale counterparties. For the purpose of the proposed standard, these facilities only include contractually irrevocable (“committed”) or conditionally revocable agreements to extend funds in the future. Unconditionally revocable facilities which are unconditionally cancellable by the bank (in particular, those without a precondition of a material change in the credit condition of the borrower) are excluded. These off-balance sheet facilities or funding commitments can have long or short-term maturities, with short-term facilities frequently renewing or automatically rolling-over. In a stressed environment, it will likely be difficult for customers drawing on facilities of any maturity, even short-term maturities, to be able to quickly pay back the borrowings. Therefore, for purposes of this stress test, all facilities that are assumed to be drawn (as outlined in the paragraphs below) will remain outstanding at the amounts assigned throughout the duration of the test, regardless of maturity.

(a) *Draw downs on committed credit and liquidity facilities to retail clients: 10%.*  
For committed credit and liquidity facilities extended to retail clients (natural



persons), banks should hold liquid assets equal to 10% of the currently undrawn portion of these credit and liquidity facilities.

(b) *Draw downs on committed **credit** facilities to non-financial corporate customers: 10%.* For committed credit facilities extended to non-financial corporates (including small businesses, sole proprietorships and partnerships), banks should hold liquid assets equal to 10% of the currently undrawn portion of these credit facilities.

(c) *Draw downs on committed **liquidity** facilities to non-financial corporate customers: 100%.* For committed liquidity facilities extended to non-financial corporates (including small businesses, sole proprietorships and partnerships), banks should hold liquid assets equal to 100% of the currently undrawn portion of these liquidity facilities. Liquidity facilities are defined as back-up lines in place to refinance the maturing debt of customers in situations where they are unable to attract funding in financial markets.

(d) *Draw downs on committed credit and liquidity facilities to other legal entity customers: 100%.* For committed credit and liquidity facilities extended to other legal entity customers such as financial institutions (including banks, securities firms, insurance companies, multilateral development banks etc), fiduciaries,<sup>19</sup> beneficiaries,<sup>20</sup> conduits and special purpose vehicles, sovereigns and central banks, public sector entities; affiliated entities of the bank and other entities not included in the prior categories, banks should hold liquid assets equal to 100% of the currently undrawn portion of these credit and liquidity facilities.

67. **Other contingent funding liabilities** – These contingent funding liabilities may be either contractual or non-contractual. Non-contractual contingent funding obligations include associations with, or sponsorship of, products sold or services provided that may require the support or extension of funds in the future under stressed conditions. Non-contractual obligations may be embedded in financial products and instruments sold, sponsored, or originated by the institution that can give rise to unplanned balance sheet growth arising from support given for reputational risk considerations. These include products and instruments for which the customer or holder has specific expectations regarding the liquidity and marketability of the product or instrument and for which failure to satisfy customer expectations in a commercially reasonable manner would likely cause material reputational damage to the institution or otherwise impair ongoing viability.

68. Some of these contingent funding obligations are explicitly contingent upon a credit or other event which is not always related to the liquidity events simulated in the stress scenario, but may nevertheless have the potential to cause significant liquidity drains in times of stress. For this standard, each supervisor and bank should consider which of these “other contingent funding liabilities” may materialise under the assumed stress events. The potential liquidity exposures to these contingent funding obligations are to be treated as a nationally determined behavioral assumption where it is up to the supervisor and bank to determine whether and to what extent these contingent outflows are to be included in the liquidity

---

<sup>19</sup> Defined in this context as a legal entity that is authorised to manage assets on behalf of a third party. Fiduciaries include asset management entities such as hedge funds, pension funds and other collective investment vehicles.

<sup>20</sup> Defined in this context as a legal entity which receives, or may become eligible to receive, benefits under a will, insurance policy, retirement plan, annuity, trust or other contract.

coverage ratio. All identified contractual and non-contractual contingent liabilities and their assumptions should be listed in detail on the template, along with their related triggers.

69. Other contingent funding obligations include products and instruments such as:

- Unconditionally revocable "uncommitted" credit and liquidity facilities;
- Guarantees;
- Letters of credit;
- Other trade finance instruments; and
- Non-contractual obligations such as:
  - Potential requests for debt repurchases of the bank's own debt or that of related conduits, securities investment vehicles and other such financing facilities;
  - Structured products where customers anticipate ready marketability, such as adjustable rate notes and variable rate demand notes (VRDNs);
  - Managed funds that are marketed with the objective of maintaining a stable value such as money market mutual funds or other types of stable value collective investment funds etc.
- For issuers with an affiliated dealer or market maker, there may be a need to include an amount of the outstanding debt securities (unsecured and secured, term as well as short term) having maturities greater than 30 days, to cover the potential repurchase of such outstanding securities.

70. **Other cash outflows** – Any other contractual cash outflows should be captured in this metric, such as principal and interest due and planned derivative payables. Outflows related to operating costs, however, are not included in this standard.

### **Cash inflows**

71. When considering its available cash inflows, the bank should only include contractual inflows from outstanding exposures which are fully performing and for which the bank has no reason to expect a default within the 30-day time horizon. Banks should not include inflows which are encumbered for other purposes, such as those which are tied to derivative contracts.

72. Banks and supervisors need to monitor the concentration of expected inflows across wholesale counterparties in the context of their liquidity management in order to ensure that the liquidity position of banks is not overly dependent on the arrival of expected inflows from one or a limited number of wholesale counterparties.

#### *(i) Retail inflows*

73. This scenario assumes that banks will receive 100% of contractual inflows from retail counterparties (any planned outflows needed to refinance outstanding loans should be reflected fully as outflows). When considering loan payments, the bank should only include inflows from fully performing loans.

(ii) *Wholesale inflows*

74. This scenario assumes that banks will receive 100% of all performing contractual wholesale cash inflows (any planned outflows needed to refinance outstanding loans should be reflected fully as outflows).

(iii) *Reverse repos and secured lending (0%, 100%)*

75. Banks should assume that maturing reverse repurchase or securities lending agreements secured by liquid assets will be rolled-over and will not give rise to any cash inflows (0%). Banks are expected NOT to roll-over maturing reverse repurchase or securities lending agreements secured by illiquid assets, so can assume to receive back 100% of the cash related to those agreements. This treatment is symmetrical with the assumptions outlined for secured lending in the outflows section.<sup>21</sup>

(iv) *Lines of credit:*

76. No lines of credit, liquidity facilities or other contingent funding facilities that the bank holds at other institutions for its own purposes are assumed to be able to be drawn. Such facilities receive 0% meaning that this scenario does not consider inflows from committed credit facilities. This is to reflect the possibility that other banks may not be in a position to honour credit lines, or may decide to incur the legal and reputational risk involved in not honouring the commitment, in order to conserve their own liquidity or reduce their exposure to that bank.

(v) *Other cash inflows*

77. Other cash inflows, such as planned contractual receivables from derivatives, should be captured here. Cash inflows related to non-financial revenues are not taken into account in the calculation of the net cash outflows for the purposes of this standard.

## **II.2 Net stable funding ratio**

### **1. Objective**

78. To promote more medium and long-term funding of the assets and activities of banking organisations, the Committee has developed the Net Stable Funding Ratio (NSFR). This metric establishes a minimum acceptable amount of stable funding based on the liquidity characteristics of an institution's assets and activities over a one year horizon. This standard is designed to act as a minimum enforcement mechanism to complement the liquidity coverage ratio standard and reinforce other supervisory efforts by incenting structural changes in the liquidity risk profiles of institutions away from short-term funding mismatches and toward more stable, longer-term funding of assets and business activities.

79. In particular, the NSFR standard is structured to ensure that investment banking inventories, off-balance sheet exposures, securitisation pipelines and other assets and activities are funded with at least a minimum amount of stable liabilities in relation to their

---

<sup>21</sup> As mentioned in footnote 18, to the extent an institution uses a "matched book" financing strategy, ie transactions in which repurchase and reverse repurchase transactions exist, for such matched transactions in which i) the security on each transaction has the same unique identifier (eg ISIN number or CUSIP) and ii) the term of each transaction both fall within the 30-day time horizon, there will be no incremental net cash outflow requirement as these inflows and outflows are assumed to off-set each other.

liquidity risk profiles. The NSFR aims to limit over-reliance on wholesale funding during times of buoyant market liquidity and encourage better assessment of liquidity risk across all on- and off-balance sheet items. In addition, the NSF approach would help to counterbalance the cliff-effects of the liquidity coverage ratio and offset incentives for institutions to fund their stock of liquid assets with short-term funds that mature just outside the supervisory defined horizon for that metric.

## 2. *Definition of the metric*

|  |
|--|
| $\frac{\text{Available amount of stable funding}}{\text{Required amount of stable funding}} > 100\%$ |
|--|

80. The NSF measure builds on traditional “net liquid asset” and “cash capital” methodologies used widely by internationally active banking organisations, bank analysts and rating agencies. However, the proposed measure expands general industry conventions of these concepts to account for the potential liquidity risk of off-balance sheet (OBS) exposures and various types of maturity mismatches involved in short-term secured funding of long-dated assets that traditional forms of these measures may ignore. The standard provides a comprehensive measure of liquidity risk exposure that acknowledges recent market difficulties, including the need to fund securities in trading inventories or securitisation pipelines in the face of illiquid markets. In computing the amount of assets that should be backed by stable funding, the proposed methodology includes required amounts of stable funding for all illiquid assets and securities held, regardless of accounting treatment (eg trading versus available-for-sale or held-to-maturity designations) and with constrained assumptions regarding trading and securitisation inventory turnover. In effect, portions of trading assets are required to be funded using stable funding sources based not on assumed execution turnover but on the relative liquidity characteristics of the positions held. Additional resources funded by stable sources are also allocated to support at least a small portion of the potential calls on liquidity arising from OBS commitments and contingencies.

81. The NSF standard is defined as a ratio of available amount of stable funding to a required amount of stable funding. This ratio must be greater than 100%.<sup>22</sup> “*Stable funding*” is defined as those types and amounts of equity and liability financing expected to be reliable sources of funds over a one-year time horizon under conditions of extended stress. The amount of such funding *required* of a specific institution is a function of the liquidity characteristics of various types of assets held, OBS contingent exposures incurred, and/or the activities pursued by the institution.

### A. *Definition of available stable funding*

82. Available stable funding (ASF) is defined as the total amount of an institution’s: 1) capital; 2) preferred stock with maturity of equal to or greater than one year; 3) liabilities with effective maturities of one year or greater; and 4) that portion of “stable” non-maturity deposits and/or term deposits with maturities of less than one year that would be expected to stay with the institution for an extended period in an idiosyncratic stress event.

---

<sup>22</sup> In addition, supervisors may use alternative levels of this NSF ratio as thresholds for potential supervisory action.

83. The objective of the standard is to ensure stable funding on an ongoing, viable entity basis, over one year in an extended firm-specific stress scenario where a bank encounters, and investors and customers become aware of:

- A significant decline in profitability or solvency arising from heightened credit risk, market risk or operational risk and/or other risk exposures;
- A potential downgrade in a debt, counterparty credit or deposit rating by any nationally recognised credit rating organisation; and/or;
- A material event which calls into question the reputation or credit quality of the institution.

84. For the purposes of this standard, extended borrowing from central bank lending facilities outside regular open market operations are not considered in this ratio, in order not to create a reliance on the central bank as a source of funding.

85. The available amount of stable funding is calculated by first assigning the carrying value of an institution's equity and liabilities to one of five categories as presented in Table 1 below. The amount assigned to each category is to be multiplied by an ASF factor and the total ASF is the sum of the weighted amounts.

86. Table 1 below summarises the components of each of the ASF categories and the associated maximum ASF factor to be applied in calculating an institution's total amount of available stable funding under the proposed standard.

Table 1  
**Components of Available Stable Funding and Associated ASF Factors**

| ASF Factor | Components of ASF Category   |
|------------|--|
| 100%       | <ul style="list-style-type: none"> <li>• The total amount of capital, including both Tier 1 and Tier 2 as defined in existing global capital standards issued by the Committee.</li> <li>• The total amount of any preferred stock not included in Tier 2 that has an effective maturity of one year or greater taking into account any explicit or embedded options that would reduce the expected maturity to less than one year.</li> <li>• The total amount of secured and unsecured borrowings and liabilities (including term deposits) with effective maturities of one year or greater excluding any instruments with explicit or embedded options that would reduce the expected maturity to less than one year.</li> </ul> |
| 85%        | <ul style="list-style-type: none"> <li>• "Stable" non-maturity retail deposits and/or term retail deposits (as defined in the LCR) with residual maturities of less than one year.</li> <li>• "Stable" unsecured wholesale funding, non-maturity deposits and/or term deposits with a residual maturity of less than one year, provided by small business customers (as defined in the LCR). This category consists of deposits and other extensions of funds made by non-financial small business</li> </ul>  |

<sup>23</sup> Along the lines of the IRB approach in the capital framework, an SME is defined as a legal entity, sole proprietorship or partnership where the reported sales for the consolidated group of which the firm is a part is less than €50 million. See Basel II's paragraph 273.

|     |   |
|-----|---|
|     | customers <sup>23</sup> of the borrowing institution that are generally considered as having similar liquidity risk characteristics to retail accounts, provided the total aggregated funding raised from one small business customer is less than €1 million <sup>24</sup> (on a consolidated basis where applicable). <sup>25</sup>   |
| 70% | <ul style="list-style-type: none"> <li>• "Less stable" (as defined in the LCR) non-maturity retail deposits and/or term retail deposits with residual maturities of less than one year.</li> <li>• "Less stable" (as defined in the LCR) unsecured wholesale funding, non-maturity deposits and/or term deposits with a residual maturity of less than one year, provided by small business customers (as defined above).</li> </ul> <p>Less stable deposits, as outlined in the LCR and determined by each jurisdiction, could include deposits which are not covered by effective deposit insurance, high value-deposits, deposits of sophisticated or high net worth individuals and deposits which can be withdrawn quickly (eg internet deposits) and foreign currency deposits.</p> |
| 50% | <ul style="list-style-type: none"> <li>• Unsecured wholesale funding, non-maturity deposits and/or term deposits with a residual maturity of less than one year, provided by non-financial corporate customers.</li> </ul>  |
| 0%  | <ul style="list-style-type: none"> <li>• All other liabilities and equity categories not included in the above categories.</li> </ul>   |

*B. Definition of required stable funding for assets and off-balance sheet exposures.*

87. The amount of stable funding required by supervisors is to be measured using supervisory assumptions on the broad characteristics of the liquidity risk profiles of an institution's assets, off-balance sheet exposures and other selected activities. The required amount of stable funding is calculated as the sum of the value of the assets held and funded by the institution, multiplied by a specific required stable funding (RSF) factor assigned to each particular asset type, added to the amount of OBS activity (or potential liquidity exposure) multiplied by its associated RSF factor. The RSF factor applied to the reported values of each asset or OBS exposure is the amount of that item that supervisors believe should be supported with stable funding. Assets that are more liquid and more readily available to act as a source of extended liquidity in the stressed environment identified above receive lower RSF factors (and require less stable funding) than assets considered less liquid in such circumstances and, therefore, require more stable funding.

88. The RSF factors assigned to various types of assets are parameters intended to approximate the amount of a particular asset that could **not** be monetised through sale or use as collateral in a secured borrowing on an *extended basis* during a liquidity event lasting

<sup>24</sup> In accordance with paragraph 231 of the Basel II Framework.

<sup>25</sup> "Aggregated funding" means the gross amount (ie not taking any form of credit extended to the legal entity into account) of all forms of funding (eg deposits or debt securities for which the counterpart is known to be a small business customer). In addition, "from one small business customer" means one or several legal entities that may be considered as a single creditor (eg in the case of a small business that is affiliated to another small business, the limit would apply to the bank's funding received from both businesses). In the above bullets, "stable" deposits refer to deposits which are covered by an effective deposit insurance scheme and where:

- the depositors have other relationships with the bank which make deposit withdrawal highly unlikely; or
- the deposits are in transactional accounts (eg accounts where salaries are automatically credited).

An effective deposit insurance scheme refers to one which is in effect and guarantees that it has the ability to make prompt payouts.

one year. Under this standard such amounts are expected to be supported by stable funding. Except for “repo-like” transactions as defined in existing global capital standards issued by the Committee, all encumbered assets would also be expected to be fully supported by stable funding.<sup>26</sup>

89. Table 2 briefly summarises the specific types of assets to be assigned to each asset category and their associated RSF factor. Annex 2 fully outlines the assets in each category and should be used by banks in conducting the NSFR.

| Table 2<br><b>Summary Composition of Asset Categories and Associated RSF Factors<br/>(see Annex 2 for full description)</b>   |            |
|---|------------|
| Summary Composition of Asset Categories   | RSF Factor |
| Cash, money market instruments  | 0%         |
| Securities with effective remaining maturities of less than one year  |            |
| Outstanding loans to financial entities having effective maturities of less than one year.  |            |
| Unencumbered marketable securities with residual maturities $\geq$ one year representing claims on sovereigns, central banks, BIS, IMF, EC, non-central government PSEs or multilateral development banks which are rated AA or higher and are assigned a 0% risk weight under the Basel II standardised approach, provided that active repo-markets exist for these securities.                | 5%         |
| Unencumbered corporate bonds (or covered bonds) rated at least AA with an effective maturity of $\geq$ one year which are traded in deep, active and liquid markets and which also have a demonstrated history of being a reliable liquidity source in a stressed market environment.   | 20%        |
| Gold  | 50%        |
| Unencumbered equity securities listed on a major exchange and included in a large capital market index and unencumbered corporate bonds (or covered bonds) rated AA- to A- with an effective maturity of $\geq$ one year, which are traded in deep, active and liquid markets and which also have a demonstrated history of being a reliable liquidity source in a stressed market environment. |            |
| Loans to non-financial corporate clients having a residual maturity of less than one year.  |            |
| Loans to retail clients having a residual maturity of less than one year.   | 85%        |
| All other assets.   | 100%       |

<sup>26</sup> Encumbered assets include those posted as collateral for derivatives transactions.

90. Many potential OBS liquidity exposures entail little direct or immediate funding but can lead to significant liquidity drains in times of market or idiosyncratic stress. As a result, the application of an RSF factor to various OBS activities results in a requirement for the institution to establish a “reserve” of stable funding that would be expected to fund existing assets that might not otherwise be funded with “stable” funds as defined in other parts of this standard. While funds are indeed fungible within a financial institution, this requirement could be viewed as promoting the stable funding of the stock of liquid assets that could be used to meet liquidity requirements arising from OBS contingencies in times of stress.

91. Consistent with the LCR, the NSF standard identifies OBS exposure categories based broadly on whether the commitment is a credit or liquidity facility or some other contingent funding liability. Table 3 identifies the specific types of off-balance sheet exposures to be assigned to each OBS category and their associated RSF factor.

**Table 3**  
**Composition of Off-balance Sheet Categories and Associated RSF Factors**

| RSF Category  | RSF Factor  |
|---|---|
| Conditionally revocable and irrevocable credit and liquidity facilities to retail clients (natural persons) and legal entity customers (non-financial corporates (including small businesses, sole proprietorships and partnerships)) and other legal entity customers such as financial institutions (including banks, securities firms, insurance companies, multilateral development banks etc.), fiduciaries, <sup>27</sup> beneficiaries, <sup>28</sup> conduits and special purpose vehicles, sovereigns and central banks, public sector entities; affiliated entities of the bank and other entities not included in the categories above)  | 10% of the currently undrawn portion  |
| Other contingent funding obligations, including products and instruments such as: <ul style="list-style-type: none"> <li>• Unconditionally revocable "uncommitted" credit and liquidity facilities;</li> <li>• Guarantees;</li> <li>• Letters of credit;</li> <li>• Other trade finance instruments; and</li> <li>• Non-contractual obligations such as: <ul style="list-style-type: none"> <li>– Potential requests for debt repurchases of the bank's own debt or that of related conduits, securities investment vehicles and other such financing facilities;</li> <li>– Structured products where customers anticipate ready marketability, such as adjustable rate notes and variable rate demand notes (VRDNs);</li> <li>– Managed funds that are marketed with the objective of maintaining a stable value such as money market mutual funds or other types of stable value collective investment funds etc.</li> </ul> </li> </ul> | National supervisors can specify the RSF factors based on their national circumstances. |

<sup>27</sup> Defined in this context as a legal entity that is authorised to manage assets on behalf of a third party. Fiduciaries include asset management entities such as hedge funds, pension funds and other collective investment vehicles.

<sup>28</sup> Defined in this context as a legal entity which receives, or may become eligible to receive, benefits under a will, insurance policy, retirement plan, annuity, trust or other contract.



### III. Monitoring tools

92. In addition to the metrics outlined in Section II to be used as standards, the Committee proposes that supervisors utilise the metrics outlined in this section as consistent monitoring tools. These metrics capture specific information related to a bank's cash flows, balance sheet structure, available unencumbered collateral and certain market indicators.

93. These metrics, together with the standards in Section II, provide the cornerstone of information which aid supervisors in assessing the liquidity risk of a bank. In addition, supervisors may need to supplement this framework by using additional tools and metrics tailored to help capture elements of liquidity risk specific to their jurisdictions. In utilising these metrics, supervisors should take action when potential liquidity difficulties are signalled through a negative trend in the metrics, or when a deteriorating liquidity position is identified, or when the absolute result of the metric identifies a current or potential liquidity problem. Examples of actions which supervisors can take are outlined in the Committee's *Sound Principles* (paragraphs 141-143).

94. The metrics discussed in this section include the following:

- III.1 Contractual Maturity Mismatch
- III.2 Concentration of funding
- III.3 Available Unencumbered Assets
- III.4 Market-related monitoring tools

#### III.1 Contractual Maturity Mismatch

##### 1. Objective

95. The contractual maturity mismatch profile identifies the gaps between the contractual inflows and outflows of liquidity for defined time bands. These maturity gaps indicate how much liquidity a bank would potentially need to raise in each of these time bands if all flows occurred at the earliest possible date. This metric provides insight into the extent to which the bank relies on maturity transformation under its current contracts.

##### 2. Definition and practical application of the metric

Contractual cash and security inflows and outflows from all on- and off-balance sheet items, mapped to defined time bands based on their respective maturities.

96. A bank should report contractual cash and security flows in the relevant time bands based on their residual contractual maturity. Supervisors in each jurisdiction will determine the specific template, including required time bands, by which data must be reported. At a minimum, the data collected from the contractual maturity mismatch should provide data on the categories and timeframes outlined in the Liquidity Coverage Ratio and Net Stable Funding Ratio. Supervisors should define the time buckets so as to be able to understand the bank's cash flow position. Possibilities include requesting the cash flow mismatch to be constructed for the overnight, 7 day, 14 day, 1, 2, 3 and 6 months, 1, 3, 5 and beyond 5 years buckets.

### *Contractual cashflow assumptions*

97. Asset flows should be reported according to their latest possible maturity. Liability cash flows should be reported according to their earliest possible date of outflow. Contractual cash flows related to any open-maturity, callable, puttable or extendable issuance should be analysed based on the earliest possible repayment date. Instruments that have no specific maturity should be reported separately, with details on the instruments, with no assumptions applied as to when maturity occurs.

98. Any flows or balances between entities included within the scope of the schedule should be eliminated in accordance with generally accepted accounting principles. No rollover of existing liabilities is assumed to take place. For assets, the bank is assumed not to enter into any new contracts.

99. It should be assumed that penalty clauses do not deter creditors from withdrawing their funds. Contingent liability exposures that would require a change in the state of the world (such as contracts with triggers based on a change in prices of financial instruments or a downgrade in the bank's credit rating) need to be detailed, grouped by what would trigger the liability, with the respective exposures clearly identified.

### **3. Utilisation of the metric**

100. The banks will provide the raw data to the supervisors, with no assumptions included in the data. Standardised contractual data submission by banks enables supervisors to build a market-wide view and identify market outliers vis-à-vis liquidity.

101. Given that the metric is based solely on contractual maturities with no behavioural assumptions, the data will not reflect actual future forecasted flows under the current, or future, strategy or plans, ie, under a going-concern view. Also, contractual maturity mismatches do not capture outflows which a bank may make in order to protect its franchise, even where contractually there is no obligation to do so. For analysis, supervisors can apply their own assumptions to reflect alternative behavioural responses in reviewing maturity gaps.

102. As outlined in the *Principles for Sound Liquidity Risk Management and Supervision*, banks should also conduct their own maturity mismatch analyses, based on going-concern behavioural assumptions of the inflows and outflows of funds in both normal situations and under stress. These analyses should be based on strategic and business plans and should be shared and discussed with supervisors, and the data provided in the contractual maturity mismatch should be utilised as a basis of comparison. When firms are contemplating material changes to their business models, it is crucial for supervisors to request projected mismatch reports as part of an assessment of impact of such changes to prudential supervision. Examples of such changes include potential major acquisitions or mergers or the launch of new products which have not yet been contractually entered into. In assessing such data supervisors need to be mindful of assumptions underpinning the projected mismatches and whether they are prudent.

103. Banks should be able to indicate how they plan to bridge any identified gaps in their internally generated maturity mismatches and explain why the assumptions applied differ from the contractual terms. The supervisor should challenge these explanations and assess the feasibility of the banks' funding plans.

### III.2 Concentration of funding

#### 1. Objective

104. This metric is meant to identify those sources of wholesale funding which are of such significance that withdrawal of this funding could trigger liquidity problems. The metric thus encourages the diversification of funding sources recommended in the Committee's *Sound Principles*.

#### 2. Definition and practical application of the metric

**A. Funding liabilities sourced from each significant counterparty**

The bank's balance sheet total

**B. Funding liabilities sourced from each significant product/instrument**

The bank's balance sheet total

**C. List of asset and liability amounts by significant currency**

#### *Calculation of the metric*

105. The numerator is determined by examining funding concentrations by counterparty or type of instrument/product. Banks and supervisors should monitor both the absolute percentage of the funding exposure, as well as significant increases in concentrations.

#### A. Significant counterparties

106. The numerator for counterparties is calculated by aggregating the total of all types of deposits (or similar funding) from a single counterparty or group of connected or affiliated counterparties, as well as all other direct borrowings, both secured and unsecured, which the bank can determine arise from the same counterparty<sup>29</sup> (such as for overnight CP/CD funding).

107. A "significant counterparty" is defined as a single counterparty or group of connected or affiliated counterparties accounting in aggregate for more than 1% of the bank's total liabilities, although in some cases there may be other defining characteristics based on the funding profile of the bank. A group of connected counterparties is, in this context, defined in the same way as in the "Large Exposure" regulation (of the host country in case of consolidated reporting) for solvency purposes. Intra-group deposits and deposits from related parties should be identified specifically under this metric, regardless of whether the metric is being calculated at a legal entity or group level, due to the potential limitations to intra-group transactions in stressed conditions.

#### B. Significant instrument / product

108. The numerator for type of instrument/product should be calculated for each individually significant funding instruments/products, as well as by calculating groups of similar types of instruments/products.

---

<sup>29</sup> For some funding sources, such as debt issues that are transferable across counterparties (such as CP/CD funding dated longer than overnight, etc), it is not always possible to identify the counterparty holding the debt.

109. A “significant instrument/product” is defined as a single instrument/product or group of similar instruments/products which in aggregate amount to more than 1% of the bank’s total liabilities.

**C. Significant currencies**

110. In order to capture the amount of structural currency mismatch in a bank’s assets and liabilities, banks are required to provide a list of the amount of assets and liabilities in each significant currency.

111. A “significant currency” is defined as liabilities denominated in a single currency, which in aggregate amount to more than 1% of the bank’s total liabilities.

*Time buckets*

112. The above metrics should be reported separately for the time horizons of less than one month, 1-3 months, 3-6 months, 6-12 months, and for longer than 12 months.

**3. Utilisation of the metric**

113. In utilising this metric to determine the extent of funding concentration to a certain counterparty, both the bank and supervisors must recognise that currently it is not possible to identify the actual funding counterparty for many types of debt.<sup>30</sup> The actual concentration of funding sources, therefore, could likely be higher than this metric indicates. The list of significant counterparties could change frequently, particularly during a crisis. Supervisors should consider the potential for herding behaviour on the part of funding counterparties in the case of an institution-specific problem. In addition, under market-wide stress, multiple funding counterparties and the bank itself may experience concurrent liquidity pressures, making it difficult to sustain funding, even if sources appear well diversified.

114. In interpreting this metric, one must recognise that the existence of bilateral funding transactions may affect the strength of commercial ties and the amount of the net outflow.<sup>31</sup>

115. These metrics do not indicate how difficult it would be to replace funding from any given source.

116. To capture potential foreign exchange risks, the comparison of the amount of assets and liabilities by currency will provide supervisors with a baseline for discussions with the banks to discuss how the bank manages any currency mismatches, through swaps, forwards, etc. It is meant to provide a base for further discussions with the bank rather than to provide a snapshot view of the potential risk.

---

<sup>30</sup> For some funding sources, such as debt issues that are transferable across counterparties (such as CP/CD funding dated longer than overnight, etc), it is not always possible to identify the counterparty holding the debt.

<sup>31</sup> Eg where the monitored institution also extends funding or has large unused credit lines outstanding to the “significant counterparty.”

### **III.3 Available unencumbered assets**

#### **1. Objective**

117. This metric provides supervisors with data on the quantity and key characteristics, including currency denomination and location, of banks' available unencumbered assets. These assets may potentially be used as collateral to raise additional secured funding in secondary markets and/or eligible at central banks and as such may potentially be additional sources of liquidity for the bank.

#### **2. Definition and practical application of the metric**

**Available unencumbered assets that are marketable as collateral in secondary markets and/or eligible for central banks' standing facilities**

118. Banks are to report the amount, type and location of available unencumbered assets that could serve as collateral for secured borrowing in secondary markets at prearranged or current haircuts at reasonable costs. Likewise, banks should report the amount, type, and location of available unencumbered assets that are eligible for secured financing with relevant central banks at prearranged (if available) or current haircuts at reasonable costs, for standing facilities only (ie, excluding emergency assistance arrangements). This would include collateral that has already been accepted at the central bank but remains unused. For assets to be counted in this metric, the bank must have already put in place the operational procedures that would be needed to monetise the collateral.

119. In addition to providing the total amounts available, banks should also report these items categorised by significant currency. "Significant currency" is defined as available unencumbered collateral denominated in a single currency which in aggregate amounts to more than 1% of the associated total amount of available unencumbered collateral (for secondary markets and/or central banks).

120. In addition, banks must report the estimated haircut that the secondary market and/or relevant central bank would require for each asset. In the case of the latter, a bank would be expected to reference, under business as usual, the central bank haircuts which it would normally access (which likely involves matching funding currency – ie, ECB for Euro-denominated funding, Bank of Japan for Yen funding, etc).

121. As a second step after reporting the relevant haircuts, banks should report the expected monetised value of the collateral (rather than the notional amount) and where the assets are actually held, in terms of where in the world the assets are and what business lines have access to those assets.

#### **3. Utilisation of the metric**

122. The metric does not capture potential changes in counterparties' haircuts and lending policies that could occur under either a systemic or idiosyncratic event and could provide a false comfort that the estimated monetised value of available unencumbered collateral is greater than it would be when it is most needed. Supervisors should keep in mind that this metric does not compare available unencumbered assets to the amount of outstanding secured funding or any other balance sheet scaling factor. To gain a more complete picture, the information generated by this metric should be complemented with the maturity mismatch metric and other balance-sheet data.

### **III.4 Market-related monitoring tools**

#### **1. Objective**

123. High frequency market data with little or no time lag can be used as early warning indicators in monitoring potential liquidity difficulties at banks.

#### **2. Definition and practical application of the metric**

124. While there are many types of data available in the market, supervisors can monitor data at the following levels to focus on potential liquidity difficulties:

- A. Market-wide information
- B. Information on the financial sector
- C. Bank-specific information

##### *A. Market-wide information*

125. Supervisors can monitor information both on the absolute level and direction of major markets and consider their potential impact on the financial sector and the specific bank. Market-wide information is also crucial when evaluating assumptions behind a bank's funding plan.

126. Valuable market information to monitor includes, but is not limited to, equity prices (ie overall stock markets and sub-indices in various jurisdictions relevant to the activities of the supervised banks), debt markets (money markets, medium-term notes, long term debt, derivatives, government bond markets, credit default spread indices, etc); foreign exchange markets, commodities markets, and indices related to specific products, such as for certain securitised products (eg the ABX).

##### *B. Information on the financial sector*

127. To track whether the financial sector as a whole is mirroring broader market movements or is experiencing difficulties, information to be monitored includes equity and debt market information for the financial sector broadly and for specific subsets of the financial sector, including indices.

##### *C. Bank-specific information*

128. To monitor whether the market is losing confidence in a particular institution or has identified risks at an institution, it is useful to collect information on equity prices, CDS spreads, money-market trading prices, the situation of roll-overs and prices for various lengths of funding, the price/yield of bank debenture and/or subordinated debt in the secondary market.

#### **3. Utilisation of the metric/data**

129. Information such as equity prices and credit spreads are readily available, however, the accurate interpretation of such information is important. For instance, the same CDS spread in numerical terms may not necessarily imply the same risk across markets due to market-specific conditions such as low market liquidity. Also, when considering the liquidity impact of changes in certain data points, the reaction of other market participants to such information can be different, as various liquidity providers may emphasise different types of data.

## **IV. Application issues for standards and monitoring tools**

130. This section outlines a number of issues related to the application of the proposed standards and monitoring tools. These issues include the frequency with which banks calculate and report the metrics, the scope of application of the metrics (whether apply at group and/or entity level and to foreign bank branches), the aggregation of currencies within the metrics, and the amount of public disclosure for both standards and monitoring tools.

### **1. Frequency of calculation and reporting**

131. Metrics should be used on an ongoing basis to help monitor and control liquidity risk. Banks are expected to meet the requirements of the standards continuously.

132. The metrics should be calculated and reported at least monthly, with the operational capacity to increase the frequency to weekly or even daily in stressed situations to the discretion of the supervisor. The time lag in reporting should be as short as feasible and ideally should not surpass two weeks.

### **2. Scope of application**

133. The proposed standards and monitoring tools should be applied to all internationally active banks on a consolidated basis, but may be used for other banks and on any subset of entities of internationally active banks as well to ensure greater consistency and a level playing field between domestic and cross-border banks. The standards should be applied consistently wherever they are applied. When applied on a legal entity basis, affiliated entities should be treated no differently than unrelated third party financial institutions.

### **3. Currencies**

134. While the standards are expected to be met on a consolidated basis and reported in a common currency, supervisors and banks should also be aware of the liquidity needs in each significant currency. As indicated in the LCR, the currencies of the pool of liquid assets should be similar in composition to the operational needs of the bank. Banks and supervisors cannot assume that currencies will remain transferable in a stress, even for currencies which in normal times are highly convertible.

### **4. Public disclosure**

135. Information on the metrics, particularly on the standards, should be transparent and be publicly disclosed. Required disclosure for the standards will be similar to the disclosure of capital positions, regarding the elements to disclose and the level of granularity. Information to disclose includes the value and level of the metrics, the size and composition of the components of the metrics, and the drivers behind the metrics. Qualitative information could support the numerical information given.

## Annex 1

### Illustrative Template for the Liquidity Coverage Ratio

| Item  | Factor (to be multiplied against total amount)  | Total amount | With factor applied |
|---|---|--------------|---------------------|
| <i>Stock of high quality liquid assets</i>  |   |              |                     |
| Cash  | 100%  |              |                     |
| Qualifying marketable securities from sovereigns, central banks, public sector entities, and multi-lateral development banks                    | 100%  |              |                     |
| Qualifying central bank receivables   | 100%  |              |                     |
| Domestic sovereign or central bank debt in domestic currency  | 100%  |              |                     |
| <i>In addition, the Committee will gather data on the following instruments to analyse the impact of this standard on the financial sector:</i> |   |              |                     |
| Qualifying corporate bonds rated AA or higher   | 80%   |              |                     |
| Qualifying corporate bonds rated A- to AA-  | 60%   |              |                     |
| Qualifying covered bonds rated AA or higher   | 80%   |              |                     |
| Qualifying covered bonds rated A- to AA-  | 60%   |              |                     |
| <b>Total value of stock of highly liquid assets</b>   |   |              |                     |
| <i>Cash Outflows</i>  |   |              |                     |
| <u>Retail deposits:</u>   |   |              |                     |
| - stable deposits   | minimum 7.5%                                    |              |                     |
| - less stable retail deposits [additional categories to be determined by jurisdiction]  | minimum 15%                                     |              |                     |
| <u>Unsecured wholesale funding:</u>   |   |              |                     |
| - Stable, small business customers  | minimum 7.5%                                    |              |                     |
| - Less stable, small business customers [additional categories to be determined by jurisdiction]  | minimum 15%                                     |              |                     |
| - non-financial corporates, no operational relationship   | 75%   |              |                     |
| - non-financial corporates, sovereigns, central banks and public sector entities with operational relationships                                 | 25% of deposits needed for operational purposes |              |                     |
| - other legal entity customers and sovereigns, central banks, and PSEs without operational relationships  | 100%  |              |                     |



|  |   |  |  |
|--|---|--|--|
| <u>Secured funding:</u>  |   |  |  |
| Funding from repo of illiquid assets and securities lending/borrowing transactions illiquid assets are lent out  | 100%  |  |  |
| <u>Additional requirements</u>   |   |  |  |
| Liabilities related to derivative collateral calls related to a downgrade of up to 3-notches   | 100% of collateral that would be required to cover the contracts in case of up to a 3-notch downgrade |  |  |
| Market valuation changes on derivatives transactions   | Amount should be nationally determined [as relevant to specific banks]                                |  |  |
| Valuation changes on posted non-cash or non-high quality sovereign debt collateral securing derivative transactions  | 20%   |  |  |
| <i>ABCP, SIVs, Conduits, etc:</i>  |   |  |  |
| - Liabilities from maturing ABCP, SIVs, SPVs, etc  | 100% of maturing amounts and 100% of returnable assets  |  |  |
| Term Asset Backed Securities (including covered bonds)   | 100% of maturing amounts  |  |  |
| <i>Currently undrawn portion of committed credit and liquidity facilities to:</i>  |   |  |  |
| - retail clients   | 10% of outstanding lines  |  |  |
| - non-financial corporates; credit facilities  | 10% of outstanding lines  |  |  |
| - non-financial corporates; liquidity facilities   | 100% of outstanding lines   |  |  |
| -- other legal entity customers  | 100% of outstanding lines   |  |  |
| Other contingent funding liabilities (such as guarantees, letters of credit, revocable credit and liquidity facilities etc)  | Determined by supervisors, specific to needs at certain banks.  |  |  |
| Planned outflows related to renewal or extension of new loans (retail or wholesale)  | 100%  |  |  |
| Any other cash outflows (including planned derivative payables)  |   |  |  |
| <b>Total cash outflows</b>   |   |  |  |
| <i>Cash Inflows</i>  |   |  |  |
| Amounts receivable from retail counterparties  | 100% of planned inflows from performing assets  |  |  |
| Amounts receivable from wholesale counterparties   | 100% of planned inflows from performing wholesale customers   |  |  |
| Receivables in respect of repo and reverse repo transactions backed by illiquid assets and securities lending/borrowing transactions where illiquid assets are borrowed. | 100%  |  |  |
| Other cash inflows   |   |  |  |
| <b>Total cash inflows</b>  |   |  |  |
| <b>Net cash outflows (= Total cash outflows minus Total cash inflows)</b>  |   |  |  |
| <b>Liquidity coverage ratio (= Total value of stock of high quality liquid assets / Net cash outflows)</b>   |   |  |  |

## Annex 2

### Full Explanation for Required Stable Funding Categories

#### Detailed Composition of Asset Categories and Associated Required Stable Funding Factors

| Components of RSF Category  | RSF Factor |
|---|------------|
| <ul style="list-style-type: none"> <li>• All cash immediately available to meet obligations <b>not</b> held for operational purposes, not currently encumbered as collateral and not held for planned use as contingent collateral.</li> <li>• All short-term unsecured instruments and transactions with outstanding maturities of less than one year.<sup>32</sup></li> <li>• All securities with stated remaining maturities of less than one year with no embedded options that would increase the expected maturity to more than one year.</li> <li>• All securities held where the institution has an offsetting reverse repurchase transaction <b>when</b> the security on each transaction has the same unique identifier (eg ISIN number or CUSIP)</li> <li>• All loans to financial entities with effective maturities of less than one year that are not renewable and for which the lender has an irrevocable right to call. When the loan is secured, the underlying collateral must have a maturity of less than one year.</li> </ul> | 0%         |
| <ul style="list-style-type: none"> <li>• Unencumbered marketable securities with residual maturities one year or greater representing claims on or claims guaranteed by sovereigns, central banks, BIS, IMF, EC, non-central government public sector entities (PSEs) or multilateral development banks which are rated AA or higher and are assigned a 0% risk-weight under the Basel II standardised approach, provided that active repo-markets exist for these securities.</li> </ul>   | 5%         |
| <ul style="list-style-type: none"> <li>• Unencumbered corporate bonds<sup>33</sup> or covered bonds<sup>34</sup> satisfying <b>all</b> of the following conditions:               <ul style="list-style-type: none"> <li>– Central bank eligibility for intraday liquidity needs or overnight liquidity shortages in relevant jurisdictions.<sup>35</sup></li> <li>– Not issued by a bank, investment or insurance or financial services firm.</li> <li>– Not issued by the respective firm itself.</li> <li>– Low credit risk: assets have a credit assessment by a recognised ECAI of at least AA, or do not have a credit assessment by a recognised ECAI and are internally rated as having a PD equivalent to that corresponding to a credit assessment of AA</li> <li>– Proven record as a reliable source of liquidity in the markets (repo and sale) even during stressed market conditions: ie maximum price change or increase in haircut over a 30-day period during the last 10 years or during a</li> </ul> </li> </ul>                | 20%        |

<sup>32</sup> Such instruments include but are not limited to: short-term government and corporate bills notes and obligations; commercial paper; negotiable certificates of deposits; reserves with central banks and sale transactions of such funds (eg fed funds sold); bankers acceptances; money market mutual funds.

|  |      |
|--|------|
| <ul style="list-style-type: none"> <li>– relevant period of significant liquidity stress not exceeding 10%.</li> <li>– Traded in large, deep and active markets characterised by a low level of concentration. The bid-ask-yield spread has not exceeded 40 bsp during the last 10 years or during a relevant period of significant liquidity stress.</li> </ul>   |      |
| <ul style="list-style-type: none"> <li>• Unencumbered gold, corporate bonds, covered bonds, and equity securities that satisfy all of the following conditions: <ul style="list-style-type: none"> <li>– Central bank eligibility for intraday liquidity needs or overnight liquidity shortages in relevant jurisdictions.<sup>36</sup></li> <li>– Not issued by a bank, investment, insurance, or financial services firm (except in the case of covered bonds).</li> <li>– Not issued by the respective firm itself.</li> <li>– Low credit risk: assets have a credit assessment by a recognised ECAI of at least A-, or do not have a credit assessment by a recognised ECAI and are internally rated as having a PD corresponding to a credit assessment of A- .</li> <li>– Traded in large, deep and active markets characterised by a low level of concentration. The bid-ask-yield spread has not exceeded 50 bsp during the last 10 years or during a relevant period of significant liquidity stress.</li> <li>– Listed on a recognised exchange and included in a large cap market index.</li> </ul> </li> <li>• All assets held in the trading book that are not securities or loans that satisfy all of the following conditions. <ul style="list-style-type: none"> <li>– The instrument’s fair value can be determined based on inputs that are quoted prices (unadjusted) in active markets for identical assets at the measurement date.</li> <li>– Traded in large, deep and active markets characterised by a low level of concentration. The bid-ask-spread has not exceeded 50 bsp during the last 10 years or during a relevant period of significant liquidity stress.</li> <li>– Listed on a recognised exchange in multiple time zones and included in a main index.</li> </ul> </li> <li>• Loans to non-financial corporate clients having a maturity of less than one year.</li> </ul> | 50%  |
| <ul style="list-style-type: none"> <li>• Loans to retail clients (ie natural persons) having a maturity of less than one year.</li> </ul>  | 85%  |
| <ul style="list-style-type: none"> <li>• All other assets not included in the above categories.</li> </ul>   | 100% |

<sup>33</sup> **Corporate bonds** are plain vanilla assets whose valuation is easy and standard and does not depend on private knowledge, ie no complex structured products, no subordinated debt.

<sup>34</sup> **Covered bonds** are bonds issued and owned by a bank and subject by law to special public supervision designed to protect bond holders. Sums deriving from the issue of these bonds must be invested in conformity with the law in assets which, during the whole period of the validity of the bonds, are capable of covering claims attaching to the bonds and which, in the event of failure of the issuer, would be used on a priority basis for the reimbursement of the principal and payment of the accrued instrument.

<sup>35</sup> **Central bank eligibility:** This is an optional criterion for jurisdictions whose list of central bank eligible assets is only very narrowly defined. In those jurisdictions, the relevant supervisors may exercise discretion to allow non-central bank eligible corporate bonds provided that they meet the other respective criteria above.

<sup>36</sup> **Central bank eligibility:** This is an optional criterion for jurisdictions whose list of central bank eligible assets is only confined to tier 1 assets. In those jurisdictions, the relevant supervisors may exercise discretion to allow non-central bank eligible corporate bonds provided that they meet the other respective criteria

## Annex 3

### Summary of Net Stable Funding Ratio

| Available Stable Funding (Sources)   |                     | Required Stable Funding (Uses)   |                                 |
|--|---------------------|--|---------------------------------|
| Item   | Availability Factor | Item   | Required Factor                 |
| <ul style="list-style-type: none"> <li>Tier 1 &amp; 2 Capital Instruments</li> <li>Other preferred shares and capital instruments in excess of Tier 2 allowable amount having an effective maturity of one year or greater</li> <li>Other liabilities with an effective maturity of 1 year or greater</li> </ul> | 100%                | <ul style="list-style-type: none"> <li>Cash</li> <li>Short-term unsecured actively-traded instruments (&lt; 1 yr)</li> <li>Securities with exactly offsetting reverse repo</li> <li>Securities with remaining maturity &lt; 1 yr</li> <li>Non-renewable loans to financials with remaining maturity &lt; 1 yr</li> </ul> | 0%                              |
| <ul style="list-style-type: none"> <li>Stable deposits of retail and small business customers (non-maturity or residual maturity &lt; 1yr)</li> </ul>  | 85%                 | <ul style="list-style-type: none"> <li>Debt issued or guaranteed by sovereigns, central banks, BIS, IMF, EC, non-central government, multilateral development banks</li> </ul>   | 5%                              |
| <ul style="list-style-type: none"> <li>Less stable deposits of retail and small business customers (non-maturity or residual maturity &lt; 1yr)</li> </ul>   | 70%                 | <ul style="list-style-type: none"> <li>Unencumbered non-financial senior unsecured corporate bonds (or covered bonds) rated at least AA, maturity ≥ 1 yr</li> </ul>  | 20%                             |
| <ul style="list-style-type: none"> <li>Wholesale funding provided by non-financial corporate customers (non-maturity or residual maturity &lt; 1yr)</li> </ul>   | 50%                 | <ul style="list-style-type: none"> <li>Unencumbered listed equity securities or non-financial senior unsecured corporate bonds (or covered bonds) rated at least A-, maturity ≥ 1 yr</li> <li>Gold</li> <li>Loans to non-financial corporate clients having a maturity &lt; 1 yr</li> </ul>                              | 50%                             |
| <ul style="list-style-type: none"> <li>All other liabilities and equity not included above</li> </ul>  | 0%                  | <ul style="list-style-type: none"> <li>Loans to retail clients having a maturity &lt; 1 yr</li> </ul>  | 85%                             |
|  |                     | <ul style="list-style-type: none"> <li>All other assets</li> </ul>   | 100%                            |
|  |                     | Off Balance Sheet Exposures  |                                 |
|  |                     | <ul style="list-style-type: none"> <li>Undrawn amount of committed credit and liquidity facilities</li> </ul>  | 10%                             |
|  |                     | <ul style="list-style-type: none"> <li>Other contingent obligations</li> </ul>   | National Supervisory Discretion |