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MODELING METHODOLOGY

Net Stable Funding Ratio

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Summary

The Basel Committee (Committee) released the final standard[1] on Net Stable Funding Ratio (NSFR) – the long-term liquidity risk management measure to ensure a stable funding structure within banks. NSFR regulation requires that an institution's available stable funding (ASF) sourced from a bank's capital and liabilities is at least equal to the required stable funding (RSF) for the bank's assets over a one year time horizon. To satisfy this requirement, firms must take into account the liquidity and maturity characteristics of the assets and liabilities. NSFR covers the funding risk across both on- and off-balance sheet (OBS) assets. To mitigate short-term funding mismatches, it also provides an incentive for institutions to fund these assets from more stable, long-term sources rather than short-term wholesale funding.

NSFR was first introduced[2] in 2009, and was included in the Basel III guidelines[3] published in December 2010 as a complement to the Liquidity Coverage Ratio (LCR) short-term liquidity measure. The Committee then underwent a rigorous process of reviewing the standard and its implications on the functioning of the financial markets and the economy, concluding with a consultative document[4] on NSFR in January 2014. This consultation, while largely aligning itself with the LCR guidelines, altered the calibration of the NSFR to be more stringent on short term, potentially volatile funding sources, and reduced potential cliff effects in the measurements of ASF and RSF.

The final standard becomes effective on January 1, 2018. Grounded in the 2014 consultative document, it changes the treatment of short-term exposures to banks and other financial institutions, and the treatment of derivative exposures. It also allows the exclusion, upon meeting specific conditions, of interdependent assets and liabilities. A summary of the changes between the 2014 consultative document and final standard is available in Appendix A.

1 Final standard on NSFR (link)
2 Consultative document on International framework for liquidity risk measurement, standards and monitoring (link)
3 Basel III guidelines published in December 2010 (link)
4 Consultative document on NSFR (link)

CONTENTS

1. Overview of Scope and Timeline

- NSFR is required to be used for all internationally active banks on a consolidated basis.
- To ensure greater consistency and a level playing field between domestic and cross-border banks, NSFR can also be used, but is not required, for other banks and entities of internationally active banks.
- The Committee recommended that banks monitor and control liquidity exposures and funding needs at the level of individual legal entities, foreign branches and subsidiaries, taking into account the legal, regulatory and operational limitations to the transferability of liquidity.
- NSFR will become effective on January 1, 2018 and must be reported at least quarterly.

2. Definition

- NSFR is the ratio of the available amount of stable funding to the required amount of stable funding over the time horizon of one year. The NSFR regulation requires the ratio to be greater than or equal to 100 percent on an ongoing basis.

$$\text{NSFR} = \frac{\text{Available amount of stable funding}}{\text{Required amount of stable funding}} \geq 100\%$$

where,

- Available amount of stable funding is a portion of institution's capital and liabilities expected to be reliable over the next one year.
- Required amount of stable funding is the funding required depending upon the liquidity characteristics and residual maturities of an institution's assets and OBS exposures over the next one year.

3. Available and Required Stable Funding

The following table illustrates characteristics, assumptions, and requirements to be used for both Available Stable Funding (ASF) and Required Stable Funding (RSF), the numerator and denominator respectively of the NSFR calculation.

	AVAILABLE STABLE FUNDING (ASF)	REQUIRED STABLE FUNDING (RSF)
Core Criteria	» Depends upon the relative stability of an institution's funding sources taking into account the contractual maturity of liabilities, and withdrawal propensity of funding providers.	» Depends upon the broad characteristics of the liquidity risk profile of an institution's assets and off balance sheet (OBS) exposures.
Underlying Assumptions	» Longer-term liabilities are assumed to be more stable than short-term liabilities. » Short-term funding from retail or small business funding is more stable than wholesale funding. » To determine the maturity of an equity or liability instrument, investors are assumed to exercise any option reducing maturity at the earliest possible date. Instruments exercisable at the bank's discretion take into account reputational factors that may limit a bank's ability not to exercise the option.	» Stable funding is required for some portion of lending to the real economy. » Stable funding is required to support banks rolling over a significant portion of maturing loans to preserve customer relationships. » Short-dated assets (maturing in less than one year) require a smaller portion of stable funding, as some assets will be allowed to mature instead of rolling over. » Unencumbered high-quality assets do not need to be wholly financed with stable funding. » Additional stable funding sources are required to support potential calls on liquidity arising from OBS commitments and contingent funding obligations. » To determine the maturity of an asset, investors are assumed to exercise any option to extend maturity. Instruments exercisable at the bank's discretion take into account reputational factors that may limit a bank's ability not to exercise the option. » Financial instruments, foreign currencies and commodities for which a purchase order has been executed are included, while instruments for which a sales order has been executed are excluded when meeting specific conditions. » Securities lent/received in secured funding transactions are included only when the banks retain beneficial ownership and the assets remain on their balance sheet.
Funding Amount Calculation	» Calculation of carrying value (before the application of any regulatory deductions, filters or other adjustments) of an institution's capital and liabilities. » For derivative liabilities (derivative contracts having a negative value), calculation of replacement cost (obtained by marking to market) net of any variation margin. Netting of replacement cost allowed only in the presence of an eligible bilateral netting contract. » Assignation of each value to one of the ASF factor categories depending upon the maturity and withdrawal propensity and multiplication with the relevant ASF factor. » Summation of the weighted amounts to get the total ASF.	» Calculation of carrying value of an institution's assets. » For derivative assets (derivative contracts having a positive value), calculation of replacement cost (obtained by marking to market) not adjusted for any collateral received, except cash variation margin (meeting specific conditions). Netting of replacement cost allowed only in the presence of an eligible bilateral netting contract. » Assignation of each value to one of the RSF factor categories depending upon the residual maturity or liquidity value and multiplication with the relevant RSF factor. » Summation of the weighted amounts and amount of OBS activity (or potential liquidity exposure) multiplied by its associated RSF factor to get the total ASF.
Interdependent Assets and Liabilities	Supervisors are allowed to exclude the interdependent assets and liabilities (ASF/RSF factors equal to 0%) which meet specific conditions.	

4. Funding Factors Applicable to Available and Required Stable Funding

ASF/RSF FACTOR	AVAILABLE STABLE FUNDING	REQUIRED STABLE FUNDING
100%	» Total regulatory capital[5] before deductions (excluding Tier 2 instruments with residual maturity of less than one year). » Other capital instruments and liabilities with effective residual maturity of one year or more, excluding any instruments with explicit or embedded options that, if exercised, would reduce the expected maturity to less than one year.	» All assets that are encumbered for a period of one year or more. » Derivative assets net of derivative liabilities if the derivative assets are greater than the derivative liabilities. » 20% of derivative liabilities (before deducting variation margin posted). » All other assets not included in the categories with RSF factor of less than 100%.
95%	» Stable[6] non-maturity (demand) deposits and term deposits with residual maturity of less than one year, provided by retail and small business customers.	
90%	» Less stable[7] non-maturity deposits and term deposits with residual maturity of less than one year provided by retail and small business customers.	
85%		» Cash, securities or other assets posted as initial margin for derivative contracts and cash or other assets contributed to the default fund of a Central Counter Party (CCP). Initial margin posted on behalf of a customer with no performance guarantee is excluded. If the securities or other assets, posted as initial margin, would otherwise receive a higher RSF factor, same should be retained. » Other unencumbered performing loans with risk weights greater than 35% under the Basel II Standardized Approach for credit risk and residual maturities of one year or more, excluding loans to financial institutions. » Unencumbered securities that are not in default and do not qualify as High Quality Liquid Assets (HQLA)[8] with a remaining maturity of one year or more and exchange-traded equities. » Physical traded commodities, including gold.
65%		» Unencumbered residential mortgages with a residual maturity of one year or more and with a risk weight of less than or equal to 35% under the Basel II Standardized Approach for credit risk. » Other unencumbered loans not included in the preceding categories, excluding loans to financial institutions, with a residual maturity of one year or more and with a risk weight of less than or equal to 35% under the Basel II Standardized Approach for credit risk.
50%	» Funding with residual maturity of less than one year, provided by non-financial corporate customers. » Operational deposits[9]. » Funding with residual maturity of less than one year from sovereigns, Public Sector Entities (PSEs), and multilateral and national development banks. » Other funding with residual maturity greater than six months and less than one year, not included in the preceding categories, including funding provided by central banks and financial institutions.	» Unencumbered level 2B assets[10]. » HQLA encumbered for a period of greater than six months and less than one year. » Loans to financial institutions and central banks with residual maturities greater than six months and less than one year. » Deposits held at other financial institutions for operational purposes. » All other non-HQLA with residual maturity of less than one year, including loans to non-financial corporate clients, loans to retail and small business customers, and loans to sovereigns and PSEs that do not qualify for an RSF factor of less than 50%.

5 Total regulatory capital as defined in paragraph 49 of the Basel III text
6 Stable deposits as defined in paragraphs 75-78 of the final Basel standard on LCR
7 Less stable deposits as defined in paragraphs 79-81 of the final Basel standard on LCR
8 HQLA for the purpose of calculating NSFR would be as defined in paragraphs 24-68 of the final Basel standard on LCR without regard to LCR operational requirements and LCR caps on Level 2 and Level 2B assets
9 Operational deposits as defined in paragraphs 93-104 of the final Basel standard on LCR
10 Level 2B assets for the purpose of calculating NSFR would be as defined in paragraph 54 of the final Basel standard on LCR

ASF/RSF FACTOR	AVAILABLE STABLE FUNDING	REQUIRED STABLE FUNDING
15%		» All other unencumbered loans to financial institutions with residual maturities of less than six months that do not qualify for an RSF factor of less than 15%. » Unencumbered level 2A assets[11].
10%		» Unencumbered loans to financial institutions with residual maturities of less than six months, where the loan is secured against level 1 assets[12] and where the bank can re-hypothecate the received collateral for the life of the loan.
5%		» Unencumbered level 1 assets, excluding coins, banknotes and central bank reserves.
0%	» All other liabilities and equity not included in the preceding categories, including liabilities without a stated maturity (with a specific treatment for deferred tax liabilities and minority interests). » Derivative liabilities net of derivative assets if the derivative liabilities are greater than the derivative assets. » "Trade date" payables arising from purchases of financial instruments, foreign currencies and commodities that are expected to settle. » At the discretion of national supervisors, deposits between banks within the same cooperative network, when meeting specific conditions, can be assigned an ASF factor up to the RSF factor assigned to the same deposits. However, the ASF factor should not exceed 85%.	» Coins and banknotes. » All central bank reserves (including required reserves and excess reserves). » All claims on central banks with residual maturities of less than six months. » "Trade date" receivables arising from sales of financial instruments, foreign currencies and commodities that are expected to settle.

5. Off-Balance Sheet Exposures

» OBS exposures, such as the undrawn portion of credit and liquidity facilities, guarantees, letters of credit, trade finance obligations, and non-contractual obligations, can lead to significant funding requirements over a time horizon of one year. As a result, the Committee requires institutions to assign RSF factors to OBS exposures and take the OBS exposures into account in the NSFR calculation.

» Consistent with the final Basel standard on LCR, the NSFR identifies OBS exposure categories based broadly on whether the commitment is a credit or liquidity facility or some other contingent funding obligation. An RSF factor of 5% is assigned to the undrawn portions of irrevocable and conditionally revocable credit and liquidity facilities. National supervisors can specify the RSF factors for other contingent funding obligations, including unconditionally revocable credit and liquidity facilities, guarantees and letters of credit, trade finance obligations, and non-contractual obligations, based on their national circumstances.

11 Level 2A assets for the purpose of calculating NSFR would be as defined in paragraph 52 of the final Basel standard on LCR
12 Level 1 assets for the purpose of calculating NSFR would be as defined in paragraph 50 of the final Basel standard on LCR

Appendix A: Summary of Primary Changes Between the 2014 Consultation and the Final Standard

	FINAL STANDARD, OCTOBER 2014	CONSULTATION, JANUARY 2014
Derivative Assets and Liabilities	» Final framework specifies the calculation of derivative asset and liability amounts for treatment of derivative exposures for NSFR calculation » Net derivative liabilities (assets) receive a 0% ASF (100% RSF) factor. Also, 20% of derivative liabilities (before deducting variation margin posted) receive a 100% RSF factor	» Did not specify the calculation of derivative asset and liability amounts » Net derivative liabilities (assets) received a 0% ASF (100% RSF) factor
Trade Date Receivables and Payables	» 0% ASF (RSF) factors for trade date payables (receivables), arising from purchases (sales) of financial instruments, foreign currencies and commodities that are expected to settle	» No treatment was specified for trade date payables (receivables) arising from purchases (sales) of financial instruments, foreign currencies and commodities. By default, trade date payables received a 0% ASF factor and receivables received a 100% RSF factor
Required Stable Funding Factors	» Claims on central banks with residual maturities of less than six months receive a 0% RSF » Unencumbered loans to financial institutions with residual maturities of less than six months, where the loan is secured against Level 1 assets and where the bank can re-hypothecate the received collateral for the life of the loan, receive a 10% RSF » All other unencumbered loans to financial institutions with residual maturities of less than six months receive a 15% RSF factor	» All unencumbered loans to banks subject to prudential supervision with residual maturities of less than six months received a 0% RSF
	» Cash, securities or other assets posted as initial margin (except when posted on behalf of a customer with no performance guarantee) for derivative contracts and cash or other assets contributed to the default fund of a CCP receive an 85% RSF	» No treatment was specified for securities/ assets posted as initial margin or contributed to default fund. By default, RSF of 100%was applicable
Interdependent Assets and Liabilities	» When meeting specific criteria, interdependent assets and liabilities may be adjusted by supervisors to have 0% ASF and RSF factors	» No specific treatment was specified for interdependent assets and liabilities

References

1. Basel Committee on Banking Supervision, October 2014, "Basel III – The Net Stable Funding Ratio" – Final Framework (link)
2. Basel Committee on Banking Supervision, January 2014, "Basel III – The Net Stable Funding Ratio" – Consultative Document (link)
3. Basel Committee on Banking Supervision, December 2010, "Basel III – A Global Regulatory Framework for More Resilient Banks and Banking Systems" – Final Framework (link)
4. Basel Committee on Banking Supervision, December 2009, "International framework for liquidity risk measurement, standards and monitoring" – Consultative Document (link)