

**BASEL III:
THE REFORM PROPOSALS
SUMMARY**

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Focus on 3 aspects of the crisis

- **Capital Adequacy**: to withstand individual and systematic shocks in the banking book and trading book.
- **Liquidity Adequacy**: to meet disruptions in the inter-bank and asset markets.
- **Global Systemic Risk**: to meet international contagion by globally systematically important financial institutions (G-SIFIs).

CAPITAL ADEQUACY: OVERVIEW

1. Addition of a stress VaR (SV) and an incremental risk capital charge (IRC) to the market risk capital requirement.

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2. Create incentives for banks to trade derivatives through central clearing houses (parties) or CCP rather than bilateral. Trades through CCP would have a 2% risk weight, compared to much higher weights for bilateral trades as per Basel II.
3. Mitigate reliance on external credit ratings (S and P, Moody's). Requirements for banks to perform their own credit risk assessments to avoid the credit scoring model loophole that currently has an 8% capital requirement under the standardized model for unrated borrowers.
4. Introduce a new "simple" leverage ratio as a supplementary measure to risk-based capital. Leverage ratio is to be set at 3%.
5. Reduce the effects of "procyclicality," i.e., bank capital and reserves falling in times of crisis, through systematic risk capital "Buffers" and a conservation of *capital buffer*.

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6. Additional capital maybe required of systemically important banks, e.g., through the issuance of “Contingent Capital” and higher IRB correlations.
7. To ensure sufficient capital, Tier 1 is redefined to ensure a sufficient “common equity component,” *i.e.*, where common equity is common shares plus retained earnings minus goodwill.

CAPITAL ADEQUACY DETAILS

Calibration of the Capital Framework

8. Capital requirements and buffers (all numbers in percent)

	Common Equity Tier 1	Tier 1 Capital	Total Capital (Tier 1 plus Tier 2)
Minimum	4.5	6.0	8.0
Conservation buffer	2.5		
Minimum plus conservation buffer	7.0	8.5	10.5
Countercyclical buffer range	0 - 2.5		

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- Where common equity = [retained earning + common shares - goodwill].
- Other tier 1 capital = instruments with no maturity dates or incentives to redeem, but may be callable by issuer after 5 years only if replace instrument with “better” capital.
- Tier 2 capital contains “equity like instruments” as before such as:
 - Instruments subordinated to depositors and general creditors of the bank.
 - Minimum original maturity of 5 years requirements to be phased in by *2015*.

9. Correlations

Under the IRB correlation for borrower exposures is now calculated for larger financial institutions (assets > \$100 million) as:

$$\text{Correlation (R_FI)} = 1.25 \times [0.12 \times (1 - \text{EXP}(-50 \times \text{PD})) / (1 - \text{EXP}(-9 - 50 \times \text{PD})) + 0.24 \times (1 - \text{EXP}(-50 \times \text{PD})) / (1 - \text{EXP}(-9 - 50 \times \text{PD}))].$$

The original Basel II correlation is multiplied by 1.25 for larger banks. This increases correlations among FIs.

10. Capital Conservations Buffers

- Basel III requires banks to hold (build-up) capital outside periods of stress e.g., by reducing discretionary distributions of earnings (reduced dividends, share buy-backs and staff bonuses) minimum capital buffer is 2.5% of risk-weighted assets (comprised of Tier 1 common equity). Constraints on (1) *earnings payouts* will be imposed as the buffer is approached or breached on earning distributions such as (2) *dividends, share buy backs* and (3) *“bonus” payments*. Capital buffer phased in between 2016 and 2018. Fully effective 2019.

Individual Bank Minimum Capital Conservation Standards

Common Equity Tier 1 Ratio	Minimum Capital Conservation Ratios (expressed as a percentage of earnings)
4.5% - 5.125%	100%
>5.125% - 5.75%	80%
>5.75% - 6.375%	60%
>6.375% - 7.0%	40%
>7.0%	0%

- As can be seen the lower the buffer the greater the constraint on discretionary payout of earnings (100% to 0%).

11. Countercyclical Buffer

- Losses can be large when a downturn is preceded by a period of excess credit growth
- These losses can impact the real sector.
 - The countercyclical buffer will be imposed when there has been excess aggregate credit growth, which is likely to be relatively infrequent.
 - To be imposed by national regulatory authorities at their discretion. International banks will pay the weighted average buffer charge based on their credit exposures to each country.
 - Countercyclical buffer will vary between 0% and 2.5% of risk weighted assets.
 - Banks given 12 months to adjust to the buffer level.
 - Countercyclical buffer must be met with Tier 1 common equity capital.
 - If below the buffer restrictions on earnings payouts will apply.

Individual Bank Minimum Capital Conservation Standards, when a Bank is Subject to a 2.5% Countercyclical Requirement

Common Equity Tier 1 Ratio (including other fully loss absorbing capital)	Minimum Capital Conservation Ratios (expressed as a percentage of earnings)
4.5% - 5.75%	100%
>5.75% - 7.0%	80%
>7.0% - 8.25%	60%
>8.25% - 9.5%	40%
>9.5%	0%

12. The Leverage Ratio

In addition to the risk-based capital ratio, a simple transparent leverage ratio of 3% to be introduced.

$$LR = \frac{\textit{Tier 1 Capital}}{\textit{Total Exposure (on + off balance sheet)}} > 3\%$$

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- Total exposure based on the size of the banks balance sheet (on) net of provisions.
- Off balance sheet exposure is current exposure plus add-on for future exposure as per Basel II for derivatives.
- For off balance sheet credit (loan) commitments a conversion factor of 100% should be applied unless the commitments are immediately cancelable. In this case a conversion factor of 10% is appropriate.

13. Liquidity Overview

- To date no international standards, Basel III seeks to introduce them
 - Liquidity coverage ratio (LCR) → 2015
 - Net stable funds ratio (NSFR) → 2018

LCR = Liquidity Coverage Ratio (2015)

- Designed to ensure sufficient high quality liquid assets to offset a net cash-outflow stress scenario lasting one month.

NSFR = Net Stable Funding Ratio (2018)

- Ensure banks have more stable (long-term) sources of funds on an ongoing basis to fund long-term assets.

LIQUIDITY RATIOS DETAILS

14. LCR

Definition of the standard

$$\frac{\text{Stock of high-quality liquid assets}}{\text{Total net cash flows over the next 30 calendar days}} \geq 100\%$$

- To be reported monthly.

15. Stock of High Quality Liquid Assets (numerator of ratio)

- Liquid assets must remain liquid in times of stress, i.e., convertible into cash at little loss of value and can be used to the central bank discount window as collateral.
- The liquid assets must be “unencumbered.”
- Liquid assets divided into level 1 and level 2. Level 1 amount no cap, level 2 amount capped at 40% of total.

Level 1 = cash + central bank reserves + sovereign debt.

Level 2 = [Mtge backed securities government guaranteed] + [corporate bonds (plain vanilla) rated at least AA-].

- A 15% “Haircut” has to be applied to the value of each level 2 asset.

16. Total Net Cash Outflow (Denominator of Ratio)

Total net cash outflows over the next 30 calendar days = outflows -
Min {inflows; 75% of outflows}.

17. Outflows

- Retail Deposits = Stable + Less Stable.
Stable = Minimum Run-Off factor of 5%.
Less Stable = Minimum Run-Off Factor of 10%.
- Retail Deposits with maturity > 30 days and no early withdrawal (0% run-off factor).
- All unsecured wholesale funds with < 30 days maturity (i.e., callable by funds provider) have 100% run-off factor.
- Secured funds backed by level 1 assets (0% run-off factor),
backed by level 2 assets (15% run-off factor).

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- Loss of funding on commercial paper if maturity <30 days (100% run-off factor).
- All debt maturing with 30 days (100% run-off factor).
- Loan commitment (draw down) factors:
 - (a) 5% draw-downs on committed credit and liquidity facilities to retail and small business customers.
 - (b) 10% draw-downs on committed **credit** facilities to non-financial corporate, sovereigns and central banks, public sector entities and multilateral development banks.
 - (c) 100% draw-downs on committed **liquidity** facilities to non-financial corporate, sovereigns and central banks, public sector entities, and multilateral development banks.
 - (d) 100% *draw-downs on committed credit and liquidity facilities to other legal entities*. These entities include financial institutions (including banks, securities firms, and insurance companies), conduits and special purpose vehicles, fiduciaries beneficiaries.
- Cash outflows related to operating costs (0% run-off factor)

18. Inflows

- Only include inflows for sources where no default expected in next 30 days.
- There is a 75% cap on inflows meeting outflows so banks don't just rely of inflows for liquidity.
- Assume that no lines of credit on other banks can be drawn on (0% inflow)
- Assume 100% inflow received on wholesale loans and 50% inflow on retail loans from counterparties.
- 100% inflow on known derivative payments.

19. Net Stable Funding Ratio

- Reported Quarterly
- Aimed to ensure that long-term assets are funded with a minimum amount of stable liabilities
- It limits reliance on short-term wholesale funding, a major problem in the crisis.

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

Basically seek stable funding for all illiquid assets and securities held, where stable Funding is defined as equity and liability financing expected to be reliable sources of Funds over a one-year time horizon.

20. Available Stable Funding (numerator of ratio)

- Bank Capital.
- Pref stock maturity > 1 year.
- Liabilities with maturities > 1 year.
- Portion of retail deposits and wholesale deposit expected to stay with bank during a period of idiosyncratic stress.

Components of Available Stable Funding and Associated ASF

ASF Factor	Components of ASF Category
100%	<ul style="list-style-type: none"> <li data-bbox="614 287 1586 404">●The total amount of capital, including both Tier 1 and Tier 2 as defined in existing global capital standards issued by the Committee. <li data-bbox="614 462 1572 629">●The total amount of any preferred stock not included in Tier 2 that has an effective remaining 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 data-bbox="614 688 1561 982">●The total amount of secured and unsecured borrowings and liabilities (including term deposits) with effective remaining 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. Such options include those exercisable at the investor’s discretion within the one-year horizon.
90%	<ul style="list-style-type: none"> <li data-bbox="614 1018 1508 1176">●“Stable” non-maturity (demand) deposits and/or term deposits (as defined in the LCR in paragraphs 55-61) with residual maturities of less than one year provided by retail customers and small business customers.

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ASF Factor	Components of ASF Category
80%	<ul style="list-style-type: none"> ● "Less stable" (as defined in the LCR in paragraphs 55-61) non-maturity (demand) deposits and/or term deposits with residual maturities of less than one year provided by retail and small business customers.
50%	<ul style="list-style-type: none"> ● Unsecured wholesale funding, non-maturity deposits and/or term deposits with a residual maturity of less than one year, provided by non-financial corporate, sovereigns, central banks, multilateral development banks and PSEs.
0%	<ul style="list-style-type: none"> ● All other liabilities and equity categories not included in the above categories.

21. Required Stable Funding (denominator of ratio)

Components of RSF Category	RSF Factor
<ul style="list-style-type: none"> ● Cash immediately available to meet obligations, not currently encumbered as collateral and not held for planned use (as contingent collateral, salary payments, or for other reasons). 	0%

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Components of RSF Category	RSF Factor
<ul style="list-style-type: none"> •Unencumbered short-term unsecured instruments and transactions with outstanding maturities of less than one year. • Unencumbered securities with slated remaining maturities of less than one year with no embedded options that would increase the expected maturity to more than one year. •Unencumbered securities held where the institution has an offsetting reverse repurchase transaction when the security on each transaction has the same unique identifier (e.g., ISN number or CUSIP). •Unencumbered loans to financial entities with effective of less than one year that are not renewable and for which the lender has an irrevocable right to call. 	0%
<ul style="list-style-type: none"> •Unencumbered marketable securities with residual maturities of one year or greater representing claims on or claims guaranteed by sovereigns, central banks, BIS, IMF, EC, non-central government PSEs) or multilateral development banks that are assigned a 0% risk-weight under the Basel II standardized approach, provided that active repo or sale-markets exist for these securities 	5%

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Components of RSF Category	RSF Factor
<ul style="list-style-type: none"> •Unencumbered corporate bonds or covered bonds rated AA- or higher with residual maturities of one year or greater satisfying all of the conditions for Level 2 assets in the LCR, outlined in paragraph 42(b). •Unencumbered marketable securities with residual maturities of one year or greater representing claims on or claims guaranteed by sovereigns, central banks, non-central government PSEs that are assigned a 20% risk-weight under the Basel II standardized approach, provided that they meet all of the conditions for Level 2 assets in the LCR, outlined in paragraph 42(a). 	
<ul style="list-style-type: none"> •Unencumbered gold. •Unencumbered equity securities, not issued by financial institutions or their affiliates, listed on a recognized exchange and included in a large cap market index. •Unencumbered corporate bonds and covered bonds that satisfy all of the following conditions: <ul style="list-style-type: none"> - Central bank eligibility to intraday liquidity needs and overnight liquidity shortages in relevant jurisdictions. - Not issued by financial institutions or their affiliates (except in the case of covered bonds). 	50%

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Components of RSF Category	RSF Factor
<ul style="list-style-type: none"> - Not issued by the respective firm itself or its affiliates. - Low credit risk: assets have a credit assessment by a recognized ECAI of A+ to A-, or do not have a credit assessment by a recognized ECAI and are internally rated as having a PD corresponding to a credit assessment of A+ to A-. - Traded in large, deep and active markets characterized by a low level of concentration. • Unencumbered loans to non-financial corporate clients, sovereigns, central banks, and PSEs having a remaining maturity of less than one year. 	
<ul style="list-style-type: none"> • Unencumbered residential mortgages of any maturity that would qualify for the 35% or lower risk weight under Basel II Standardized Approach for credit risk. • Other unencumbered loans, excluding loans to financial institutions, with a remaining maturity of one year or greater, that would qualify for the 35% or lower risk weight under Basel II Standardized Approach for credit risk. 	65%

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Components of RSF Category	RSF Factor
• Unencumbered loans to retail customers (i.e., natural persons) and small business customers (as defined in the LCR) having a remaining maturity of less than one year (other than those that qualify for the 65% RSF above)	85%
• All other assets not included in the above categories	100%

- Off Balance exposures require little long-term funding. Thus: Revocable and irrevocable credit and liquidity facilities to any client has a RSF ratio = 5%.

22. Other Liquidity Controls

In addition to ratios certain other monitoring tools (metrics) suggested for regulators.

- Contractual maturity mismatch.
- Concentration of funding.
- Available unencumbered assets.

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23. Contractual Maturity Mismatch

- Comparing assets with liabilities in time bands based on maturity e.g., overnight, 7 day, 14 day, 1,2,3,4 and 9 months, 1,2,3,5 and 5 years and beyond.
- Data to be provided to supervisors by banks on frequent basis.

24. Concentration of Funding

Metrics Include

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

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Where:

Significant Counterparty Funds >1% of Bank Balance-Sheet.

Significant Instrument Accounts for >1% of Bank Balance –Sheet.

Significant Currency is >5% of Bank Liabilities.

Assessed in time buckets, >1 month, 1-3 months, 3-6 months, 6-12 months, >12 months.

25. Unencumbered Assets

- These can be used as collateral to raise additional secured funding.
- Amount of available unencumbered assets that are marketable as collateral in secondary markets and/or eligible for central banks' discount facilities.

MARKET RISK CAPITAL REFORM DETAILS (THE “ADD-ON”)

26. Market Risk Revisions (July 2009)

Basel III also includes revisions to the Basel II framework for market risk. In addition to the Basel II market risk VaR (Internal Model) where under Basel II:

- (a) VaR computed on a daily basis.
- (b) At a 99% confidence level.
- (c) Over a 10 day holding period.
- (d) With an overall multiplier of 3 times VaR imposed.

27. Stressed Value Risk Measure under Basel III

Banks must also calculate a “Stressed Value at Risk measure” based on a 10 day holding period, 99th percentile VaR with model inputs based on a 12 month Period (250 days) of a period of continuous stress (e.g., 2007, Russian crisis etc...)

- The capital requirement C is equal to:

$$C = \max\{\mathbf{VaR}_{t-1}; \mathbf{m}_c \cdot \mathbf{VaR}_{\mathbf{avg}}\} + \max\{\mathbf{sVaR}_{t-1}; \mathbf{m}_s \cdot \mathbf{sVaR}_{\mathbf{avg}}\}$$

\mathbf{VaR}_{t-1} = VaR yesterday

$\mathbf{VaR}_{\mathbf{avg}}$ = average VaR over a 60 day period

\mathbf{sVaR}_{t-1} = stressed VaR last available day

$\mathbf{sVaR}_{\mathbf{avg}}$ = average VaR over a 60 day stressed period

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m_c = multiplication factor of 3 (minimum)

m_s = multiplication factor of 3 (minimum)

- Multiplication factor can be increased by up to 1. if model performs poorly based on back testing by regulators as per “traffic light” system under Basel II

28. Incremental Risk Capital Measure (IRC) under Basel III

- In addition, banks with internal risk models will be required for some credit risk sensitive assets to calculate an incremental risk capital (IRC) charge that reflects the default and migration risk of that trading asset measured over a 12 week period *i.e.*, (i) the average of the incremental risk measure over 12 weeks and (ii) the most recent incremental risk measure.

Thus:

**Market Risk Capital = Normal Market + Stressed Market + Incremental Risk
Under Basel III Risk Capital Risk Capital Capital**

29. Tier III Capital (e.g., that included short-term bonds issued by a bank and was introduced for the market risk calculation under Basel II) is to be phased out Basel III.

G-SIBs (GLOBAL SYSTEMATICALLY IMPORTANT BANKS)

30. Aim of Policies:

- (i) reduce the probability of failure of G-SIBs by increasing their going-concern loss absorbency; and
- (ii) reduce the extent or impact of failure of G-SIBs, by improving global recovery and resolution frameworks.

31. How do you measure a G-SIBs and estimate the need for additional loss absorbency to control for moral hazard due to “Too Big to Fail” (TBTF)?

32. Proposed methodology based on an Indicator measurement approach. Thus need to identify factors that cause international contagion:

- (i) *size* of banks
- (ii) their *interconnectedness*
- (iii) the lack of *substitutes* for their services
- (iv) their global *cross-jurisdictional activity*
- (v) their *complexity*

33. The proposed methodology gives an equal weight (20%) to the above 5 factors. Size has a 20% weight but the 4 other factors have multiple indicator weights adding up to 20% each. That is, there are 12 indicator ratios overall to calculate for each G-SIBs its Total Indicator Score.

34. Indicator Weights

Indicator-based measurement approach

Category (and weighting)	Individual Indicator	Indicator Weighting
1. Cross-jurisdictional activity (20%)	Cross-jurisdictional claims	10%
	Cross-jurisdictional liabilities	10%
2. Size (20%)	Total exposures as defined to use in the Basel III leverage ratio	20%
3. Interconnectedness (20%)	Intra-financial system assets	6.67%
	Intra-financial system liabilities	6.67%
	Wholesale funding ratio	6.67%
4. Substitutability (20%)	Assets under custody	6.67%
	Payments cleared and settled through payments systems	6.67%
	Values of underwritten transactions in debt and equity markets	6.67%
5. Complexity (20%)	OTC derivatives notional value	6.67%
	Level 3 assets	6.67%
	Trading book value and available for sale value	6.67%

35. Indicator Scores (Breakdown)

1. **Cross-jurisdictional claims** = The amount of its claims divided by the sum of claims of all institutions that are included in the sample. (10% weight).
2. **Cross-jurisdictional liabilities** = Total foreign liabilities (aggregated for all local offices) – Liabilities vis-à-vis related offices (aggregated for all local offices) + Local liabilities in local currency, and it is expressed as a fraction of the sum total of the amounts reported by all the banks in the sample. (10% weight).
3. **Size** = Total exposure divided by the sum of total exposures of all banks in the sample (where exposure is total exposure on – and off – balance sheet as for the leverage ratio (see para 12)). (20% weight).
4. **Intra–financial system assets** = The sum of:
 - lending to financial institutions (including undrawn committed lines);
 - holdings of securities issued by other financial institutions;
 - net mark to market reverse repurchase agreements;
 - net mark to market securities lending to financial institutions; and
 - net mark to market OTC derivatives with financial institutions.

Divided by total intra-financial system assets of all banks in sample (6.67% weight).

5. Intra-financial system liabilities = The sum of:

- deposits by financial institutions (including undrawn committed lines);
- securities issued by the bank that are owned by other financial institutions;
- net mark to market repurchase agreements;
- net mark to market securities borrowing from financial institutions; and
- net mark to market OTC derivatives with financial institutions.

Divided by the sum total of intra-financial system liabilities in the sample (6.67% weight).

6. Wholesale Funding Ratio = (Total liabilities – Retail liabilities/Total liabilities).

Normalized by the average ratio across all banks in the sample (6.67% weight).

7. **Assets Under Custody** = The value of assets that a bank holds as a custodian divided by the sum total of the figures reported by the banks in the sample (6.67% weight).
8. **Payments Cleared and Settled through Payment Systems** = The value of a bank's payments sent through all of the main payments systems of which it is a member divided by the sum total of the figures reported by the banks in the sample (6.67% weight).
9. **Values of Underwritten Transactions in Debt and Equity Market** = Annual value of debt and equity instruments underwritten by the bank divided by the sum total of the figures reported by the banks in the sample (6.67% weight).
10. **OTC Derivatives Notional Value** = The ratio of the notional amount outstanding for the bank and the sum total of the amounts reported by all banks in the sample (6.67% weight).
11. **Level 3 Assets** = The ratio of its reported value of Level 3 assets and the sum total of the amounts reported by the banks in the sample (6.67% weight).
12. **Trading Book Value and Available for Sale Value** = The ratio of the total value of the bank's holding of securities in the trading book and available for sale category and the sum total of the figures reported by the banks in the sample (6.67% weight).

35. Indicator Score Buckets

Once the score(s) is calculated for the initial 28 G-SIBs identified by the BIS, they are placed into 5 buckets. Where the score for any G-SIB is calculated as:

$$S = \sum_{i=1}^{12} W_i I_i$$

w_i is the weight placed on indicator ratio i where $i = 1, \dots, 12$.

The cut off scores for each bucket will be fixed for 3 to 5 years and the scores will be updated *annually*.

36. The Bucketing Approach and Additional Capital (“loss absorbency”)

Bucketing Approach

Bucket	Score Range	Minimum Additional Loss Absorbency (common equity as a percentage of risk-weighted assets)
5 (empty)	D -	3.5%
4	C - D	2.5%
3	B - C	2.0%
2	A - B	1.5%
1	Cut-off point - A	1.0%

*Scores equal to one of the boundaries are assigned to the higher bucket.

- The additional capital is Tier 1 common equity and the amount is a percent of risk-weighted assets.
- The additional capital requirements are minimum levels and national jurisdictions can increase them.
- If a GSIB bank moves to a higher risk bucket it will have to raise the additional capital within 1 year. If not, then restrictions placed on earnings as for the capital conservation buffer.

37. Phase In Arrangements

Phased in between 2016 and 2018 becoming fully effective 2019. The initial cut-off scores will fixed by 2014.

38. Trial Bucketing by the BIS

Preliminary tests on the 27 banks would place 4 banks in the highest bucket 4 (additional capital requirement of 2.5%).

39. Range Breakpoints

The precise separation points for each bucket A to D are not yet fully set, requires further tests.

- In November 2011 the Financial Stability Board – A regulatory task force of the group of 20 endorsed the capital extra charges for globally systematically important bank (GSIB's).
- 29 GSIB's were identified, namely:
Bank of American, Bank of China, Bank of New York Mellon, Banque Populaire, Barclays, BNP Paribas, Citigroup, Commerzbank, Crédit Agricole, Credit Suisse, Deutsche Bank, Dexia, Goldman Sachs, HSBC, ING Bank, JPMorgan Chase, Lloyds Banking Group, Mitsubishi UFJ, Mizuho, Morgan Stanley, Nordea, Royal Bank of Scotland, Santander, Société Générale, State Street, Sumitomo Mitsui, UBS, Unicredit Group and Wells Fargo.
- The extra capital requirement will be phased-in starting 2016 (the FSB did not say which bracket each of the 29 banks would fall into).