**The Basel Committee's Large Exposure Proposal:
The 2013 Industry Study**

November 2013

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EXECUTIVE SUMMARY

- This study provides new analysis using 2013 data from 7 large US Bank Holding Companies ("BHCs") based on a standardized data collection that addresses:
  - Impacts that could result from the implementation of the proposed Basel Committee on Banking Supervision ("BCBS") large exposure regime;[1] and
  - Preliminary results of the impact of the proposed BCBS Non-Internal Model Method ("NIMM") for estimating over-the-counter ("OTC") derivatives exposures, as an alternative to the Internal Models Method ("IMM") and the Current Exposure Method ("CEM").[2]

- The results demonstrate the following:
  - There are significant overages in terms of the excess counterparty exposures and excess incidents relative to the BCBS proposed limits;[3]
  - The limit excess incidents and limit overages (or excess exposures) are only moderately higher when using NIMM rather than IMM. Accordingly, the study suggests that NIMM would be a clear improvement over CEM for measuring exposures on OTC derivatives due to its risk-sensitivity and granularity; and

EXECUTIVE SUMMARY (CONT.)

- The required risk-shifting of purchased protection to the protection provider at notional value is the single most important factor driving limit overages and limit excess incidents. This is independent of the method used to measure derivative exposures, i.e., CEM, IMM, or NIMM.

- Other factors contributing to limit overages include:
  - The BCBS proposed use of a Common Equity Tier 1 ("CET1") capital denominator in computing exposure limits rather than a broader capital base such as Total Tier 1 capital or Total capital;
  - The requirement for a tighter limit for exposures between banks and covered counterparties that are Global Systemically Important Banks ("G-SIBs");
  - The required use of the collateral haircut/comprehensive approach to measure securities financing transactions ("SFT") exposures; and
  - The potential inclusion of exposures to central counterparties ("CCPs") in the BCBS framework using the same methodology as for other counterparties.

BCBS LARGE EXPOSURES QUANTITATIVE ANALYSIS: ASSUMPTIONS AND APPROXIMATIONS

- This study applies the following assumptions as a **base case** consistent with the BCBS proposal:
  - More stringent limit application to G-SIBs: 10% limit for exposures between two G-SIBs;
  - Derivatives counterparty exposure calculation: IMM;[1]
  - SFT exposure calculation: Comprehensive (supervisory haircut) approach;
  - Capital base: CET1;
  - CCPs are considered subject to limits; and
  - Exposures to sovereigns (including Government Sponsored Enterprises or GSEs) are not subject to limits.

SCOPE

- This quantitative analysis study included data from 7 of the largest US BHCs. As-of dates for the 7 firms were 12/31/12 and 3/31/13 for all relevant data collection.

- The results have been confidentially aggregated by a third party. Summary statistics represent a simple aggregation of template submissions, with some limited review of consistency of assumptions. Data accuracy or the correct application of the BCBS methodology has not been verified.

[1] For a majority of firms, derivatives counterparty exposures were reported using IMM, given the permitted use of IMM.

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BCBS LARGE EXPOSURES QUANTITATIVE ANALYSIS: SUMMARY OF ESTIMATED LIMIT EXCESS INCIDENTS

Base Case Summary Results

- 92 incidents of limit excess incidents across the 7 participating firms (assuming a more stringent 10% limit for exposures between G-SIBs and 25% limit for other exposures).

- These incidents represent exposures to 21 unique counterparties, with a total overage of nearly $732 billion.

- The average limit overage was 224% of the prescribed limit (median: 198%).

- Counterparties for which limits are exceeded are primarily US and foreign banks and CCPs.

Distribution of Limit Excess Incidents

Percentage of Limit	Limit Excess Incidents (for counterparties subject to 10% limit)	Limit Excess Incidents (for counterparties subject to 25% limit)	Total
100-150%	19	4	23
150-200%	19	2	21
200-300%	29	0	29
>300%	18	1	19
Total Excesses	85	7	92

BCBS LARGE EXPOSURES QUANTITATIVE ANALYSIS: KEY EXPOSURE DRIVERS

- For the 92 estimated incidents where firms' exposures exceed the proposed limits, the <u>total</u> exposure to these counterparties (not overage) is composed as follows:

Exposure Type	% Total Exposure
Protection Provider (risk-shifted) exposure	70%
Securities Financing Transactions counterparty exposure	12%
Derivatives counterparty exposure	10%
Banking and Trading book counterparty exposure (loans & commitments, securities, trading positions) less CRM	8%
Total	**100%**

Pie chart showing: 70%, 12%, 10%, 8%

Legend:
- Protection Provider (risk-shifted) exposure
- Securities Financing Transactions counterparty exposure
- Derivatives counterparty exposure
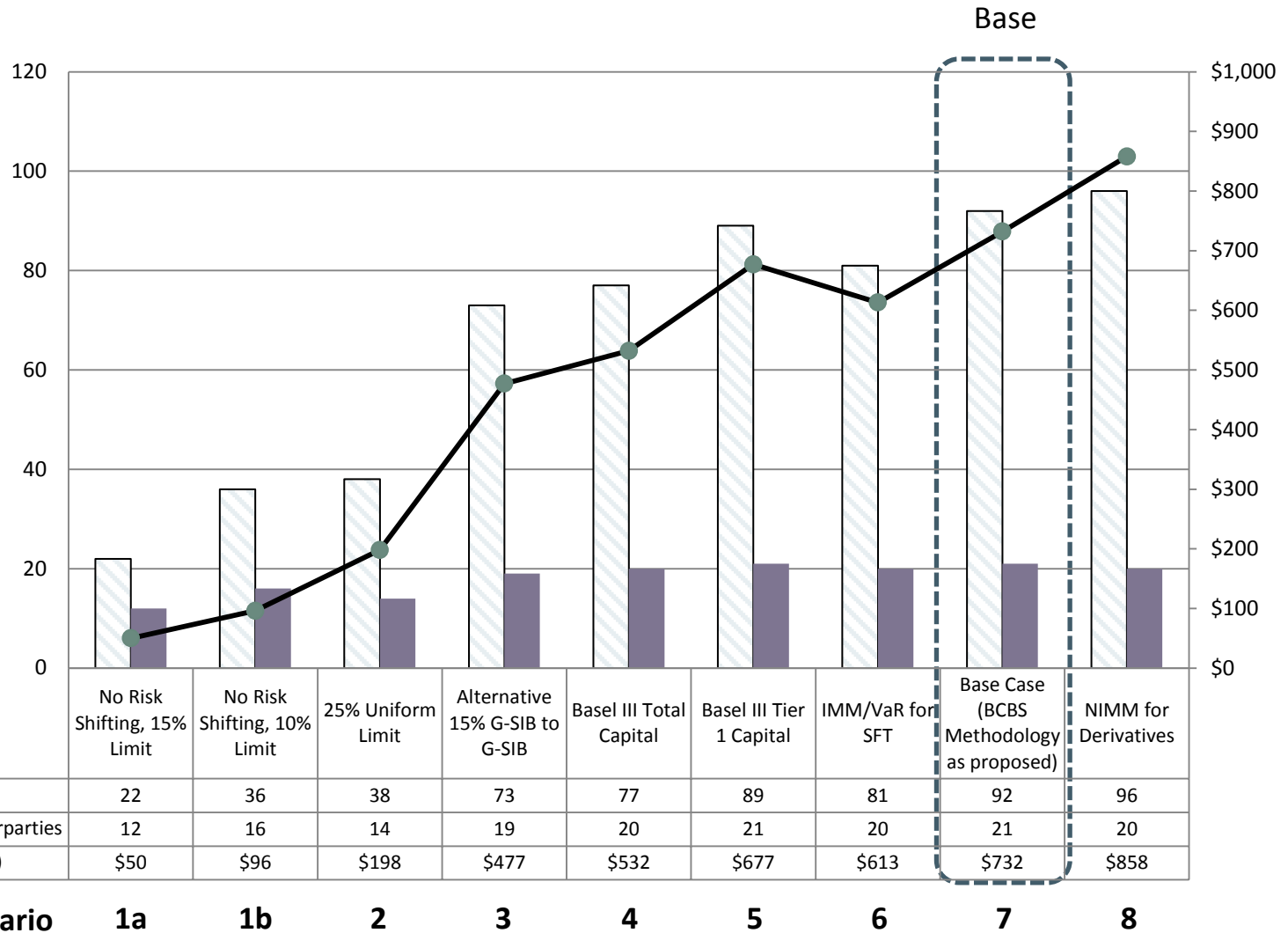- Banking and Trading book exposures (loans and commitments, securities, trading positions), less CRM
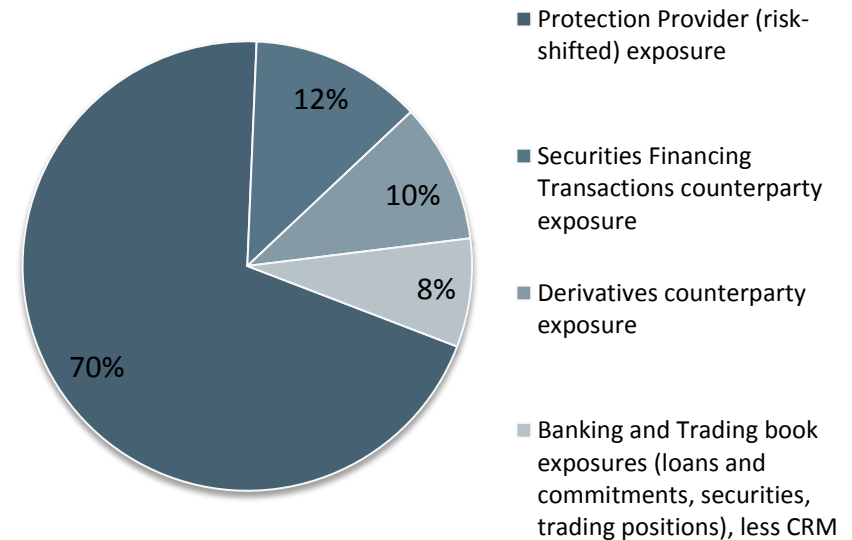
Observations
- Protection provider (risk-shifted) exposure is the single, biggest exposure driver.
- Derivatives exposure appears proportionally low for BCBS Quantitative Analysis results, due to the base case use of IMM rather than CEM or NIMM.
- Exposure from SFTs appears low on an aggregate basis but may represent a significant portion of exposure for certain firms.

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BCBS LARGE EXPOSURES QUANTITATIVE ANALYSIS: IMPACT SENSITIVITIES TO FRAMEWORK CALIBRATION[1]

- *Each scenario should be compared directly to Base Case Scenario 7*
- *The accompanying chart illustrates the impact of changing key framework requirements (relative to base), and hence the significance of each requirement in driving the overall impact*
- *Removing the risk-shifting requirement and applying a 15% G-SIB limit significantly reduces industry impact*

	No Risk Shifting, 15% Limit	No Risk Shifting, 10% Limit	25% Uniform Limit	Alternative 15% G-SIB to G-SIB	Basel III Total Capital	Basel III Tier 1 Capital	IMM/VaR for SFT	Base Case (BCBS Methodology as proposed)	NIMM for Derivatives
Limit Excess Incidents	22	36	38	73	77	89	81	92	96
Unique Affected Counterparties	12	16	14	19	20	21	20	21	20
Total Limit Overage($Bn)	$50	$96	$198	$477	$532	$677	$613	$732	$858
Scenario	1a	1b	2	3	4	5	6	7	8

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[1] Note: Graph is not cumulative in nature. Each scenario represents a change in methodology from the "base case" for the factors noted. Complete list of scenario descriptions can be found on next slide.

BCBS LARGE EXPOSURES QUANTITATIVE ANALYSIS: IMPACT SENSITIVITIES SCENARIO DETAIL

| #	Scenario	Description	Limit	Counterparty Exposure Methodology	CDS Risk Shifting	Capital Base
1a	No Risk Shifting, 15% G-SIB to G-SIB Limit	• This scenario demonstrates the impact of eliminating risk exposure shifted to protection providers completely. The results do not include the 'add back' of exposure (i.e. ignore the bought protection benefit) for any reference counterparties that may also be close to or exceeding the limits. However this unquantified 'add back' effect is not believed to be significant[1] as in general the aggregate protection provider exposure represents a broadly diversified population of mostly non-bank reference assets.	15% G-SIB to G-SIB	SFT: Comprehensive / Derivatives: IMM	Not applied	CET1
1b	No Risk Shifting, 10% G-SIB to G-SIB Limit	• Identical to the scenario above; however breaches are measured at the 10% base G-SIB to G-SIB limit.	10% G-SIB to G-SIB	SFT: Comprehensive / Derivatives: IMM	Not applied	CET1
2	25% Uniform Limit	• Assume that all counterparties are treated at a 25% limit regardless of G-SIB status or asset base.	25% Uniform	SFT: Comprehensive / Derivatives: IMM	Applied	CET1
3	Alternative 15% G-SIB to G-SIB Limit	• The Consultative Document considers a G-SIB to G-SIB limit at the 10%-15% range; this scenario views the impacts at the top end of the range.	15% G-SIB to G-SIB	SFT: Comprehensive / Derivatives: IMM	Applied	CET1
4	Basel III Total Capital	• Uses Basel III Total Capital as the basis for the limit rather than CET1.	10% G-SIB to G-SIB	SFT: Comprehensive / Derivatives: IMM	Applied	Basel III Total Capital
5	Basel III Tier 1 Capital	• The Consultative Document considers Tier 1 Capital as an applicable base; this scenario views the data from a Tier 1 Capital perspective rather than Common Equity Tier 1 capital.	10% G-SIB to G-SIB	SFT: Comprehensive / Derivatives: IMM	Applied	Basel III Tier 1
6	IMM/VaR for SFT	• This scenario uses a modeled approach (e.g. VaR or IMM) rather than the Comprehensive Approach to calculate SFTs exposures.	10% G-SIB to G-SIB	SFT: IMM/VaR / Derivatives: IMM	Applied	CET1
7	**Base Case** (BCBS methodology as proposed)	• **Base case results** – assumes a 10% G-SIB to G-SIB limit (which is the lower boundary of the suggested limit in the Consultative Document), and that firms can apply IMM.	10% G-SIB to G-SIB	SFT: Comprehensive / Derivatives: IMM	Applied	CET1
8	NIMM for Derivatives[2]	• Using NIMM rather than IMM for 5 banks' derivative counterparty exposure for the reported dataset (*this does not address the possibility that using the higher NIMM metric would increase the sample population of counterparties with >5% of CET1 capital*).	10% G-SIB to G-SIB	SFT: Comprehensive / Derivatives: NIMM	Applied	CET1

Key: Deviation from Base Case   Consistent with Base Case

[1] See slide 12 for distribution of reference assets by sector.
[2] As-of dates for NIMM data may be different than base data.

COMPARATIVE ANALYSIS OF VARIOUS COUNTERPARTY EXPOSURE MEASUREMENT METHODOLOGIES

SFT Exposure Methodology (Collateral Haircut versus IMM/Value-at-Risk or VaR)

- Across the total population of counterparties for which SFT exposure was measured using both the collateral haircut method and either IMM or VaR method, the median ratio of supervisory haircuts-to-IMM/VaR was 3.2x
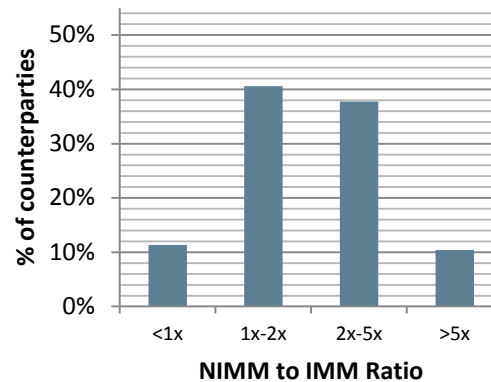
Supervisory Haircut-to-IMM/VaR Ratio
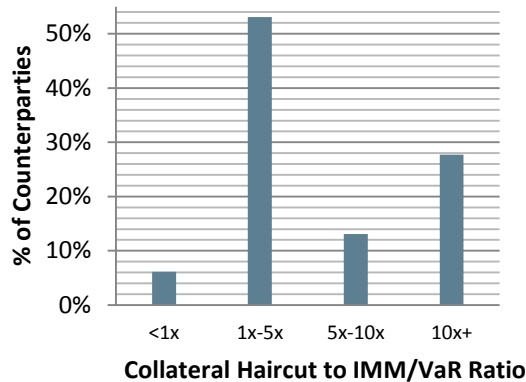
Derivative Exposure Methodology (NIMM versus IMM)

- Across the total population of bank counterparties for which derivative exposure was measured using both IMM and NIMM, the median ratio of NIMM-to-IMM was 2x
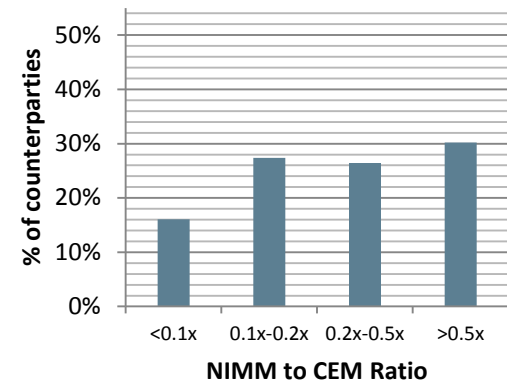
NIMM-to-IMM Ratio

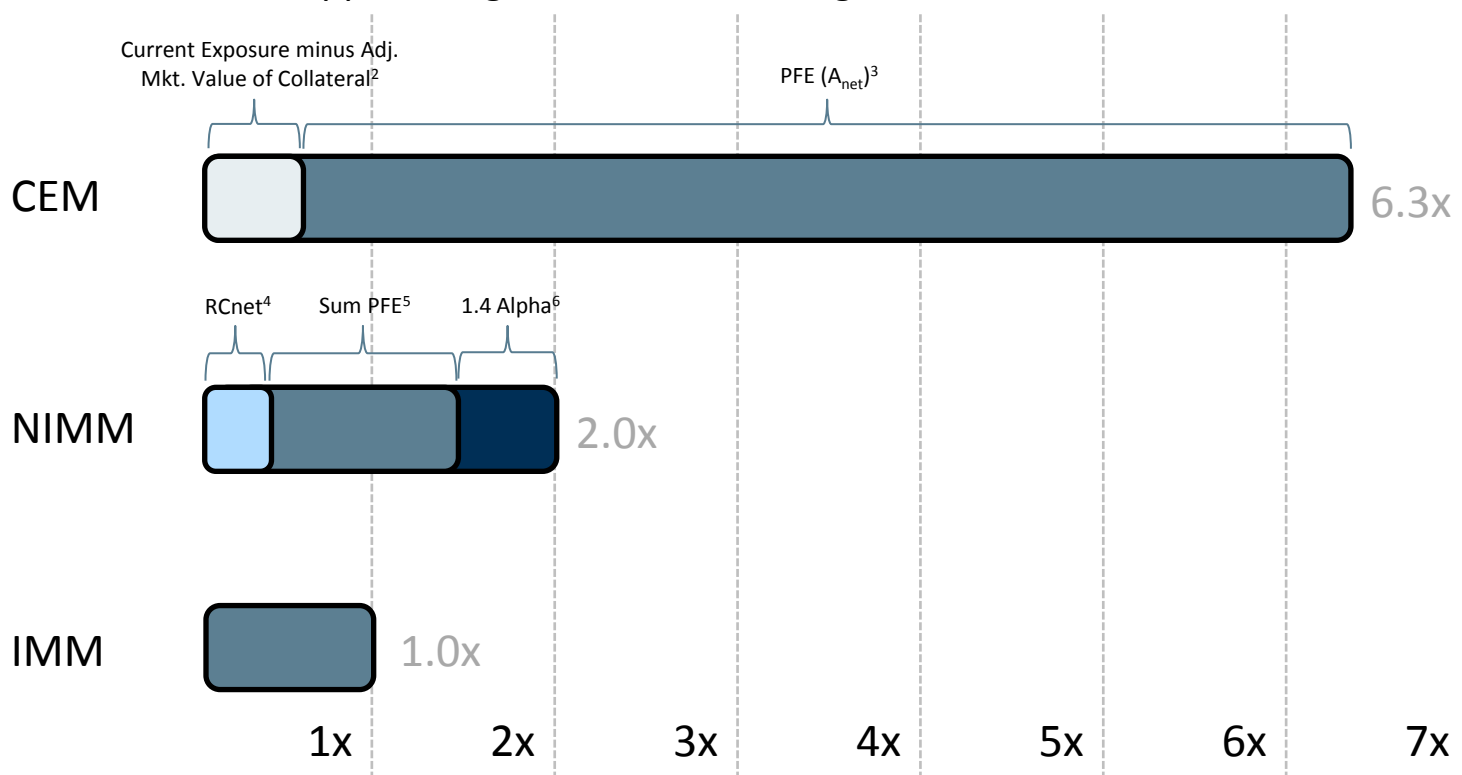## Derivative Exposure Methodology (NIMM versus CEM)

- Across the total population of bank counterparties for which derivative exposure was measured using both CEM and NIMM, the median ratio of NIMM-to-CEM was 0.3x

NIMM-to-CEM Ratio

ESTIMATES OF DERIVATIVE EXPOSURE UNDER NIMM COMPARED TO IMM AND CEM

- The graphic below compares the components of CEM and NIMM relative to IMM exposure estimates, on an aggregate basis across included firms.[1]
- NIMM estimates show reduced potential future exposure ("PFE") estimates relative to the basic CEM approach, given NIMM's more granular and risk-sensitive methodology.

Current Exposure minus Adj. Mkt. Value of Collateral[2]

PFE (A_{net})[3]

CEM 6.3x

RCnet[4]   Sum PFE[5]   1.4 Alpha[6]

NIMM 2.0x

IMM 1.0x

1x   2x   3x   4x   5x   6x   7x

[1] Component analysis data includes some adjustments for data population and timing discrepancies.
[2] Current Exposure minus Adjusted Market Value of Collateral: replacement cost of all mark-to-market, in-the-money, derivatives.
[3] PFE (A_{net}): Potential future exposure.
[4] RCnet: replacement cost adjusted by collateral for margined and un-margined trades.
[5] Sum PFE: sums potential future exposures across product categories.
[6] 1.4 alpha: multiplier of (RCnet + Sum PFE).

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PROTECTION PROVIDER RISK SHIFTING: DIVERSIFICATION OF UNDERLYING REFERENCE ASSETS

- The BCBS large exposure risk-shifting requirements implicitly assumes simultaneous exposure to the default of the protection provider and all underlying reference assets.
- Aggregate quantitative analysis data on the distribution of underlying reference assets shows diversification across non-financial sectors.

Underlying reference asset sector	Notional risk-shifted (% of total)
Corporates / Others	60%
Sovereigns	22%
Banks and Bank Holding Companies	10%
Non-Bank Financial Institutions (NBFIs)	8%
Total	**100%**

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GLOSSARY OF TERMS

OVERVIEW OF KEY TERMS USED IN RESULTS ANALYSIS

- **Limit excess incidents:** The total count of limit excesses aggregated across all participating banks under the alternative methods of the scenario.

- **Unique affected counterparties:** The number of unique counterparties against which participating banks are constrained due to limit excesses, without double-counting instances where multiple banks may have limit excesses to the same counterparty.

- **Total limit overage:** The aggregate dollar amount of limit overages, calculated as the sum of the dollar amount of the exposures (as measured under the relevant methodology) over the prescribed limits.