MEMORANDUM

TO: File

FROM: Leigh E. Bothe

RE: Meeting with the Securities Industry and Financial Markets Association ("SIFMA")

DATE: June 20, 2011

On June 15, 2011, Commission staff met with representatives from the Securities Industry and Financial Markets Association ("SIFMA") to discuss the implementation of Title VII of Dodd-Frank. The discussion included margin requirements for swaps and security-based swaps under Title VII.

Commission representatives included: Mike Macchiaroli (in person), Mark Attar (telephone), Sheila Swartz (telephone), and Leigh Bothe (telephone) from the Division of Trading and Markets, Jennifer Marietta-Westberg (telephone) and Tiago Requiejo (telephone) from the Division of Risk, Strategy, and Financial Innovation.

Adam Arkel, Mohit Dayal, Amr El-Sabbagh, Glen Garofalo, Marshall Levinson, and Grace Vogel represented FINRA. The SIFMA representatives at the meeting were: Bill Tirrell (Bank of America Merrill Lynch), Bob Colby and Gabriel Rosenberg (Davis Polk & Wardwell LLP), Mary Chen-Eng (Deutsche Bank), Mark Holloway, Greg Hopper, Claudia Toni-Smith (Goldman Sachs & Co.), James Collins (JP Morgan), Ralph Mattone and Christy Schaffner (Nomura Securities International, Inc.), and Kyle Brandon, Jeremy Simon, and Craig Griffith (SIFMA).

sifma®

Invested in America

DISCUSSION MATERIALS

MEETING WITH THE SEC AND FINRA
WEDNESDAY, JUNE 15, 2011 – NEW YORK, NY

The Securities Industry and Financial Markets Association (SIFMA) prepared this material for discussion purposes only.

Overview

- Banks use a range of methodologies to compute initial margin
- Each methodology is used under specific circumstance
- We have developed simple, but realistic hypothetical versions of three common methodologies and applied them to sample portfolios of credit default swaps (CDS) in order to demonstrate the differences in margin that may be calculated
  - These methodologies are not meant to be used as regulatory requirements; they are provided for illustrative purposes only
  - Individual institutions may employ different assumptions than are made in these examples

Common Margin Methodologies

- VaR or potential exposure model
- Notionally-based tables
- Stress testing methods

The Securities Industry and Financial Markets Association (SIFMA) prepared this material for discussion purposes only; it does not represent a recommendation or proposal.

Representative Portfolios

As requested, we have run the simulations on four illustrative portfolios comprised of CDS; each is $10 million notional, plain vanilla, 5-year CDS purchased at par

- Portfolio 1: simple directional (buying protection on one reference name)
- Portfolio 2: simple non-directional (buying and selling protection on two different reference names)
- Portfolio 3: more complex directional (buying protection on six reference names, three investment grade, three non-investment grade)
- Portfolio 4: more complex non-directional (buying and selling protection in different 12 reference names, six investment grade, six non-investment grade)

	Buy @ 100 bps	Sell @ 100 bps	Buy @500 bps	Sell @ 500 bps	Total Trades
Portfolio 1	1				1
Portfolio 2	1	1			2
Portfolio 3	3		3		6
Portfolio 4	3	3	3	3	12

Credit Default Swap Mechanics

Assumed mechanics of illustrative examples:

- The Buyer buys a CDS (protection) from the Seller at 100 bps over LIBOR at par on $10 million notional on an underlying reference credit:
  - Price to enter into CDS is zero
  - Buyer pays 100 bps per year to Seller on $10 million notional for credit protection
- If the underlying reference credit defaults, Seller pays to Buyer the loss: (1-R) x $10 million, where R is the recovery rate of the underlying defaulted credit
- Banks simultaneously enter into many different CDS

The Securities Industry and Financial Markets Association (SIFMA) prepared this material for discussion purposes only; it does not represent a recommendation or proposal.

Margin Using a VaR Approach

- Use simple, representative VaR model; this model is not a recommendation but rather a simplified example for illustration only:
  - Assumptions used in our illustration:
    - Each spread has 100% volatility
    - Average correlation of 40%
    - Simulate spreads over 10-day period
    - Run 1000 simulations
- Assuming 95% confidence level

	Portfolio 1	Portfolio 2	Portfolio 3	Portfolio 4
95% Margin ($)	167,060	133,792	2,054,803	1,260,200

- Assuming a 99% confidence level

	Portfolio 1	Portfolio 2	Portfolio 3	Portfolio 4
99% Margin ($)	250,510	187,582	2,676,211	1,664,141

Margin Using A Notional Schedule Approach

- Linearized spread model
  - Percent change in spread over 10 days is approximately equal to **annual *volatility*** x ***the number of standard deviations*** x ***the square root of (10/255 days)***
    - Assume volatility is 100% so use 1 for volatility
    - 1.65 standard deviations corresponds to 95th percentile
    - The square root of 10/255 (10 days in 255 trading days per year) is approximately 1/5
    - (1 x 1.65)/5 = 33%
- To calculate the margin requirement:
  - Multiply spread by 33% to obtain spread change over 10 days at 95% confidence
  - Then multiply spread change by the tenor of the CDS
  - For example: 5-year CDS, 300 bps spread
    Margin requirement = 33% X 300 bps X 5 years= 5%
- For expositional purposes, we have simplified the margin table methodology
  - We linearized the log-normal spread model to make calculations simple and transparent
  - We approximated plain vanilla CDS pricing by multiplying spread changes times tenor of the CDS, without accounting for discounting
  - We used a simplified volatility assumption of 100%
  - This simplified methodology applies to CDS quoted with a running spread at par and cannot be used for CDS quoted in some other way, for CDS options, or for correlation products, even for expositional purposes

Margin Using A Notional Schedule Approach

Hypothetical Margin Table*					
	Tenor				
Spread	**1**	**3**	**5**	**7**	**10**
50	0.17%	0.50%	0.83%	1.16%	1.65%
100	0.33%	0.99%	1.65%	2.31%	3.30%
200	0.66%	1.98%	3.30%	4.62%	6.60%
300	0.99%	2.97%	4.95%	6.93%	9.90%
400	1.32%	3.96%	6.60%	9.24%	13.20%
500	1.65%	4.95%	8.25%	11.55%	16.50%
600	1.98%	5.94%	9.90%	13.86%	19.80%
700	2.31%	6.93%	11.55%	16.17%	23.10%
800	2.64%	7.92%	13.20%	18.48%	26.40%
900	2.97%	8.91%	14.85%	20.79%	29.70%
1000	3.30%	9.90%	16.50%	23.10%	33.00%

FINRA 4240 Table				
	Tenor			
Spread	**1**	**3**	**5 >7**	
0-100	1%	2%	4%	7%
100-300	2%	5%	7%	10%
300-500	5%	10%	15%	20%
500-700	10%	15%	20%	25%
>700	15%	25%	25%	30%

- The hypothetical margin table has a 5% requirement for a 300 bps 5-year CDS, implying an approximately 33% 10-day spread move, i.e., 100 bps spread over 5 years
- We compare to the widely known FINRA table, which has a 15% requirement for a 300 bps 5-year CDS, implying an approximately 100% 10-day spread move, i.e., 300 bps spread over 5 years

**This example is a simplified illustration of an approach to building a grid that has been made linear for ease of discussion, but in practice market risk is not linear; it is not a recommendation of a grid or an example of any existing grid. It is a hypothetical illustration for discussion purposes only.*

Margin Generated By Tables

Portfolio	Hypothetical Table	FINRA 4240 Table
Portfolio 1: Simple Directional	$165,000	$700,000
Portfolio 2: Simple Non-Directional	$247,500	$1,050,000
Portfolio 3: Complex Directional	$2,970,000	$6,600,000
Portfolio 4: Complex Non-Directional	$4,455,000	$9,900,000

- Hypothetical table calculated under the assumption that bank buys protections and spreads widen
- When bank sells protection, risks are asymmetric since spreads tend to widen more than they narrow
  - Banks accommodate this asymmetry by reducing requirements for sold protection
  - To facilitate comparison with the FINRA table, our example uses 50% of amounts derived under the Notional Schedule Approach when the Bank sells protection

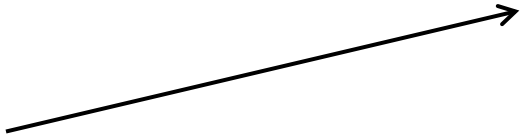
Stress Test Methodology

Develop a simple methodology to cover portfolio risk

- Scenario 1 (directional): apply 95% 10-day upward spread move to all trades
- Scenario 2 (directional): apply 95% 10-day downward move to all trades
- Scenario 3 (non-directional): For each buy-sell pair, apply ‘up spread’ move to buys and ‘down spread’ move to sells; take the maximum, of each pair; sum all results
- Methodology: Take maximum of the 3 scenarios
- Stress tests are widely used for CDS margin purposes

Quantitative Comparison of Methods

Portfolio	95% VaR	99% VaR	Hypothetical Table	FINRA 4240 Table	Stress Test
Simple Directional	$167,060	$250,510	$165,000	$700,000	$159,698
Simple Non-Directional	$133,792	$187,582	$247,500	$1,050,000	$159,698
Complex Directional	$2,054,803	$2,676,211	$2,970,000	$6,600,000	$2,483,864
Complex Non-Directional	$1,260,200	$1,664,141	$4,455,000	$9,900,000	$2,483,864



Diversification is penalized in table methods

Qualitative Comparison of Methods

- VaR/Potential Exposure (PE) models are the most risk sensitive
  - Firms may use PE models rather than VaR for margin purposes since they are already designed for counterparty credit calculations
  - Drawback for counterparties is that the calculations may not be reproducible, thus, counterparties cannot predict margin in advance
- Stress test methodologies can combine useful features of both the VaR/PE and table frameworks
  - Able to capture risks that may not be included in VaR, such as concentration risk
  - Although transparent, they may difficult for some counterparties to replicate
- Notional table methods solve the problem of predictability and transparency
  - Some counterparties may prefer the predictability of tables in spite of higher requirements
  - However, tables must be carefully calibrated since they do not account for diversification
  - Tables can be adjusted for counterparty credit quality

Methodology	Captures Diversification	Transparency to Customers	Ability for Customers to replicate
VaR or PE Models	High	Low	Low
Stress Tests	Medium	Medium	Medium
Notional Tables	Low	High	High

In Summary

- All margin methodologies have strengths and weaknesses, but models-based approaches typically provide the greatest degree of risk sensitivity and hence the most appropriate levels of margin
- Notional table methodologies have the advantage of transparency but are risk insensitive, particularly for large portfolios, and thus are not to be preferred where more than a handful of trades are margined
- A one-size fits all framework is usually not sufficient; banks will typically employ more than one margin framework