# Communication from Representatives of
The Goldman Sachs Group, Inc.
June 12, 2012

Summary: Representatives of The Goldman Sachs Group, Inc. ("Goldman Sachs") met with representatives of the Federal Reserve on May 10, 2012, regarding the proposed rule to implement the single counterparty credit limit established under section 165(e) of the Dodd-Frank Wall Street Reform and Consumer Protection Act of 2010. A summary of that meeting is available on the Federal Reserve's public website. On June 12, 2012, Goldman Sachs submitted the attached letter summarizing the concerns with and alternatives to the proposed rule its representatives raised at the May 10 meeting.

Attachment

Goldman
Sachs
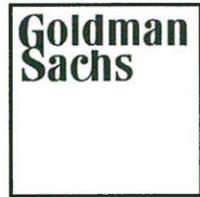
June 12, 2012

Scott G. Alvarez, Esq.
General Counsel
Board of Governors of the Federal Reserve System
Federal Reserve Building
20th Street & Constitution Avenue
Washington, D.C. 20551

Mark Van Der Weide, Esq.
Senior Associate Director
Division of Banking Supervision and Regulation
Federal Reserve Building
20th Street & Constitution Avenue
Washington, D.C. 20551

Re: Enhanced Prudential Standards Under Dodd-Frank Section 165(e) –
Single Counterparty Credit Limits

Dear Messrs. Alvarez and Van Der Weide:

We very much appreciate the time you spent with us on May 10, giving us an opportunity to discuss some of our concerns regarding the calculation of single counterparty credit limits (SCCL). We addressed these concerns in detail in the comment letter dated April 30, 2012 (the Comment Letter) that The Goldman Sachs Group, Inc. submitted concerning the Notice of Proposed Rulemaking implementing Sections 165 and 166 of the Dodd-Frank Wall Street Reform and Consumer Protection Act. The subject matter is complex. Accordingly, we would like to submit a brief letter summarizing the principal issues we discussed on May 10.

1.   TriOptima and our TriOptima-style netting analysis

TriOptima[1] is a for-profit company that provides bilateral and multilateral portfolio netting services for over-the-counter interest rate, credit and commodity derivatives products, and for some cleared products. The goal is to create

---

[1] Additional detail on TriOptima can be found on the company's website: www.trioptima.com.

for each participant a new portfolio with substantially the same economic characteristics, but with a lower gross notional value and a smaller number of trades.

In each TriOptima netting round, two or more broker-dealers or other financial institutions submit portfolios of trades in a specific asset class along with mark-to-market values for the positions in the portfolios. TriOptima matches the portfolios to find offsetting trades that may be eligible for netting and returns the full list to the participants. Participants review the potential matches and set the parameters that they are willing to accept on trade termination to determine which matched trades can be netted. These parameters may include the degree of acceptable change in counterparty risk and market risk and levels of cash payments to be made or received. The wider the parameters, the higher the number of trades that can ultimately be netted in each round. Once participants have accepted the final TriOptima proposal, the redundant transactions are legally terminated.

Major derivatives dealers routinely engage in netting through TriOptima and in fact committed to regulators in 2011 to engage in this type of portfolio compression. This commitment was made in response to strong encouragement from the OTC Derivatives Supervisors Group, an interagency group of regulators including the Federal Reserve Bank of New York and the CFTC.

The TriOptima process itself is not a means of calculating SCCL exposures; nor do we think it can be used as such. We discussed it in our letter only to illustrate the significant degree of legally binding netting that could occur within existing portfolios, and the extent to which ignoring netting (as the Current Exposure Methodology does) overstates actual counterparty exposures.

Our letter illustrated this by discussing the results of a TriOptima-*style* netting simulation of a typical broker-dealer portfolio. We netted credit and interest-rate derivatives portfolios using the methodology described in Appendix A. Our analysis of 50 typical counterparty portfolios indicates that using gross rather than net portfolios overstates the counterparty credit exposure by roughly 40% to 50%. Given an overstatement of this magnitude we can see that consideration of netting would significantly reduce estimated exposures. We ran this analysis on a bilateral basis; a multilateral procedure, such as TriOptima uses, would result in an even higher reduction in notional exposures.

2. Variation margin and rollover risk

As we discussed in our letter, the Current Exposure Methodology (CEM) required in the Proposed Rules does not give sufficient credit for variation margin, which mitigates risk and shortens the risk window associated with a trade. This not only overstates the level of credit exposures, but has systemic implications as well, by incentivizing firms to substitute rollover risk for counterparty risk (as explained below).

CEM was designed for standard bank portfolios, which are dominated by loans and where the primary structure of risk is a diversified set of long positions held to maturity. In these portfolios, a position that expires simply goes away, and for these trades shorter-term contracts are less risky than long-term ones, as reflected in the CEM methodology.

In broker-dealer portfolios, trades are often put on as a hedge to other positions. For these trades, if a bank shortens the tenor of a hedge to reduce counterparty exposure, the hedge disappears on expiration – but the risk it is hedging may not. Without the hedge, risk in the overall portfolio goes up, which requires the bank to implement a new hedge. This new hedge may or may not be available at a reasonable price. In a stressed market with declining liquidity, banks seeking to reduce risk may instead find that rollover risk – the risk that a replacement hedge might

not be available at a reasonable price – rises rapidly. If hedges have rolled off and substitutes are unavailable, banks may choose to reduce risk by selling assets, which would further depress prices. Thus, from a financial stability perspective, long-term (tenor matched) hedges are often preferable to short-term hedges.

The inter-dealer market has addressed the trade-off between counterparty risk and rollover risk through the aggressive use of variation margining. Frequent marking to market and the exchange of collateral reduces the effective tenor of the trade, and thus the risk window, to the period between the last posting of collateral and the date a trade is closed out if the counterparty fails to meet collateral calls. This is typically in the range of five to ten business days. Giving full credit for variation margin in the calculation of counterparty limits would bring the tenor of the exposure in line with the true economic exposure, and would do so in a simple and transparent way.

We recognize that variation margining is not perfect. In practice, the failure to post margin does not always lead to the closing of the trade, especially in case of collateral disputes. To address this problem, it would be reasonable to give full credit for variation margin but to require banks to report meaningful collateral disputes and lags in the posting of margin. These reports would also provide a useful supervisory tool for understanding liquidity and the quality of valuations during periods of stress.

3. Dealer positions and directionality

CEM was developed to calculate capital requirements for standard bank portfolios, which as we noted above are dominated by gross long positions. Diversification in these portfolios can reduce overall exposure, but the diversification benefits are typically highly sensitive to model specifications and correlation matrices.

As we discussed above, broker-dealer portfolios are different. Long and short positions can offset each other more directly, in some cases even (or nearly) on a one-for-one basis. Moreover, the diversification benefits in these broker-dealer portfolios are less sensitive to problems like differences in correlation matrices. While model sensitivities do exist in broker-dealer portfolios, they turn principally on issues like sensitivity to volatility and appropriate classifications. Timely provision of appropriate variation margin can counter the risks inherent in broker-dealer portfolios' sensitivity to volatility.

A simple example can illustrate this. A bank portfolio might be long the credit of both Ford and Chrysler. The degree of portfolio diversification would be small and meaningfully affected by the correlation matrices and model assumptions. Alternatively, a broker-dealer portfolio might be long the credit of Ford and short the credit of Chrysler. The broker-dealer's hedge would not be perfect, but it would be a significant offset. The Internal Model Methodology (IMM) would recognize and give some credit to this offset, but CEM would not (and therefore provides poor incentives in portfolio construction).

4. Advantages in a "Mirror IMM" approach to calculating credit exposures

One of the major challenges associated with ensuring regulatory capital and risk model equivalency across banks (both within a country and across multiple jurisdictions) is the question of consistency in models and valuations. Regulators can address this problem through the implementation of Section 165 by requiring banks to use a "Mirror IMM" analysis. This approach could offer an effective way to monitor the strength and accuracy of banks' internal models and the rigor of their mark-to-market procedures.

Under the Mirror IMM approach, each bank would model not only its exposure to each counterparty but also each counterparty's exposure to *it*. That is, Bank A would model its exposure to Bank B as well as Bank B's exposure to Bank A. Bank B would do the same. This would allow the Federal Reserve to compare two independent measures of Bank A's exposure to Bank B, and vice versa.

Bank A could conduct a Mirror IMM analysis of Bank B's exposure to it in the same way that Bank A calculates its own exposures to Bank B – by deriving and aggregating the Current Exposure (CE) and modeled Potential Future Exposure (PFE) of all of Bank B's transactions with Bank A. CE to a counterparty is equal to the net present value of positions (based on pricing models and marks), after netting and collateral. PFE is the estimated future exposure to a counterparty, which is modeled by simulating how risk factors may affect the components of the CE in the future.

Ideally, Mirror IMM analyses would result in comparable overall estimates of exposure for large and well-diversified portfolios, if both are modeled properly and consistently. At the micro level, Mirror IMM would give regulators a more granular look at differences in modeling, assumptions and valuation. Examples of potential differences could include:

- Valuation differences (the largest differences would likely reflect the use of mark-to-market or hold-to-maturity accounting)
- Collateral enforceability and netting assumptions
- Modeling differences (e.g., time horizons, close-out assumptions)
- Transaction population differences (if there are issues relating to unconfirmed trades)

The most significant advantage of Mirror IMM might be found at the macro level, for example if a horizontal review reveals that one or two banks are consistently producing low exposure estimates to all of their counterparts. Any significant or persistent discrepancies would suggest that a further regulatory review of those banks' internal models would be appropriate.

Mirror IMM analysis is likely to be a challenging exercise for banks, particularly in the set-up stages. Therefore it may be appropriate to require it only for exposures between the largest financial firms ("major covered companies" in the Proposed Rules).

5. Stressed IMM approach to calculating credit exposures

Internal models measure future potential risk at pre-defined confidence intervals, such as 95% or 99%. To produce this "stress tested" measure, banks simulate many future possible paths of the value of counterparty portfolios by randomly varying relevant risk factors. Stress testing often shows that potential portfolio outcomes are not normally distributed, but rather exhibit "fat tails," or a higher probability of an extreme outcome. Thus, lower confidence interval measures of risk can significantly understate the potential risk of the portfolio under extreme stress.

For purposes of calculating single counterparty exposures under Section 165, regulators might choose to apply a more conservative standard than that used for other IMM applications. The IMM measure of potential future risk can be adjusted in a variety of ways that can result in a more conservative measure. For instance, IMM could be scaled up by a factor (such as 25%), which would result in an estimated higher confidence interval result. Or IMM could be calculated using a higher confidence interval when selecting which "path" to choose from the many thousand simulated paths derived from the stress testing. Alternatively, when generating the future potential paths,

IMM could refer to a market data set drawn from a period of financial distress, which would reflect greater volatility and more extreme market moves. The Federal Reserve could also require banks to use specified and standardized stress scenarios, as it currently does with the CCAR tests.

Any of these methodologies would produce a more conservative outcome, while still preserving the many benefits of IMM, including consistency with regulatory capital and internal capital models, incentives for optimal risk management practices and continued focus on (and where necessary, improvement in) internal models.

<div align="center">

*　　　　　*　　　　　*

</div>

Again, we appreciate the opportunity to expand on the comments in our Comment Letter. Please feel free to contact us at (212) 902-1000 with any questions.

Sincerely,

Craig W. Broderick
Chief Risk Officer
The Goldman Sachs Group, Inc.

Steve H. Strongin
Head of Global Investment Research
The Goldman Sachs Group, Inc.

Appendix A: TriOptima-style netting analysis conducted by Goldman Sachs on a typical dealer portfolio

We held the **Net to Gross Ratio** constant in this analysis.

Credit netting methodology:
- Single-name CDS and LCDS are netted by protection buyer legal entity, counterparty legal entity, CSA, reference obligation entity and maturity bucket
  - Maturity buckets are <6m, 6m-1y, 1y-3y, 3y-5y, 5y-7y, 7y-10y, >10y
- CDS Index is netted by protection buyer legal entity, counterparty legal entity, CSA, index series and maturity date
- Standard CDS index tranches are netted by protection buyer legal entity, counterparty legal entity, CSA, index series, maturity date, attachment point and exhaustion point

Interest rate product netting methodology:
- Interest rate and cross-currency rate swaps are bucketed and netted separately
- Swaps and forward rate agreements are netted according to their bucketed "risk" in addition to counterparty legal entity and CSA
- For swaps, "risk" is calculated:
  - Estimated as Notional x Years To Maturity
  - Allocated and netted by maturity buckets of $\leq$1yr, 1yr-2y, 2yr-3y, 3y-5y, 5y-7y, 7y-10y, 10y-15y, 15y-20y, 20y-30y, 30y+ buckets, by currency
- Netted "risk" is then divided by Years to Maturity in each bucket to obtain a netted notional
  - Years to Maturity is taken to be the upper bound of the bucket, with 50 years used for the 30y+ bucket