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Outstanding concerns with the Proposals regarding the capitalisation of exposures to CCPs

Dear Raquel and Maxine:

Thank you for advising us of the proposed timetable for implementing the RMMG's Proposals on the capitalisation of exposures to CCPs dated 21 July 2011 (the "Proposals"). In light of the severity of our concerns with the Proposals, we strongly urge the RMMG to formally request more time from the Basel Committee to engage with industry on these concerns and extend discussions on the Proposals until the unintended consequences are addressed and an appropriate Quantitative Impact Study ("QIS") can be completed.

ISDA and EACH, the European Association of CCP Clearing Houses, are keen to work with RMMG on the design and execution of an official QIS which captures the capital and liquidity implications of the Proposals under the assumption that large parts of the OTC derivatives business would be centrally cleared in the future.

In addition, we have developed an alternative capital treatment methodology for the default fund exposure based on an historical analysis and default scenarios as contemplated in the CPSS-IOSCO principles process[1]. We would welcome any opportunity to share this alternative with the RMMG.

As you are aware from our previous correspondence[2], we have the following fundamental concerns with the Proposals:

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[1] Provisionally, that it would be simultaneous default of two largest CMs.

[2] Previous correspondence in February 2011(ISDA, BBA, IFA and GFMA Response "Re: Basel Committee on Banking Supervision Consultative Document: Capitalization of bank exposures to central counterparties ("CCPs")", 4 February 2011) and April 2011 (ISDA letter "Clarifications on BCBS 190 Proposals regarding Indirect Access to OTC derivatives", 21 April 2011)

(a)   The Proposals will discourage the propagation of central clearing, in contrast to the policy objective stated by the G20.

(b)   The Proposals will result in a misallocation of capital and liquidity on a macroeconomic scale with strong pro-cyclical effects when market conditions become distressed.

(c)   The Proposals conflict with the envisaged CPSS-IOSCO risk management principles for financial market infrastructures, Dodd-Frank Act and the envisaged provisions of the E.U.'s Regulation on OTC derivatives, central counterparties and trade repositories ("EMIR").

The purpose of our proposed amendments is to align the regulatory capital requirement for centrally cleared derivatives relative to uncleared transactions with the relative economic risks involved. While we firmly believe that regulatory capital requirements for cleared transactions under the Proposals are excessive, we are also concerned about the distortions to economic activity these rules would cause if they were implemented. Accordingly, the remainder of this letter contains an elaboration of each of the fundamental concerns.

The Proposals will discourage the propagation of central clearing, in contrast to the policy objective stated by the G20

Greater clarity is required in respect of capital requirements for the CM to client leg of cleared transactions. If the clearing member ("CM") to client leg of the cleared trade continued to be charged as bilateral OTC, and subject to CVA, it is apparent that cleared trades will attract *higher* capital requirements than un-cleared, bilateral trades. This is because the trade leg between client and CM is subject to the same capital requirement as an identical bilateral OTC transaction[3], while the capital requirements for the trade leg between CM and CCP and for the CM's contribution to the CCP default fund are additive.

Accordingly, the current Proposals serve as a significant disincentive for CMs, which are regulated under Basel rules, to provide clearing services and will likely increase the cost of those services for clients. The Dodd-Frank Act and envisaged E.U regulation, requires clearing of clearable derivatives. The impact of the imposed rules will be to increase the cost of doing business for clients who trade clearable derivatives or drive clearing business to the non-banking sector. Such increased costs may also incentivise clients to use non-vanilla structures which are not clearable and thus less costly, use non-bank CMs or opt not to risk manage through derivatives and thus increasing risk in the non-financial economy.

As a separate but related point, the disincentive for banks being CMs could result in the role of CM being undertaken almost exclusively by non-bank organisations. Given that Best practice CCP risk management starts with stringent requirements to become a CM in terms of sufficient financial resources, robust operational capacity, and business expertise, this would have a negative impact on the ability of CCPs to fulfil the wider role and use allotted to them for OTC derivatives.

In light of the above, it is very important to understand what is expected in terms of the CM to client exposures in paragraphs 113 and Annex 4 Section II. Unfortunately, this is currently

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[3] We assume, for the purposes of clarity, the same amount of margin for cleared trades and bilateral trades. However, it is noted that typically bilateral trades do not have the same amount of margin).

unclear. Does "bilateral trade" refer to the back-to-back principal model used by LCH as opposed to agency model used by CME? Or are such trades not deemed to be bilateral OTC trades if the client is able to look to the CCP rather than the CM due to segregation and portability etc? If they are deemed bilateral it would appear *arbitrary* to favour the "agency" model of client clearing. This is because the Proposals mandate that CMs that act as agent do not have to capitalise for the client trade exposures as the client is trading with the CCP. However, as we have clarified previously[4], in the agency model the CM is still exposed to the client in an identical manner as the principal model via its guarantee to the CCP of the client's performance.

The key elements towards mitigating the discrimination of clearable products and of encouraging their increased use would be to:

(a)   Clarify the definition and treatment of "bilateral trade" so that the rules apply the same capital treatment for the principal model and agency model given that, notwithstanding the agency relationship between the client and CM, there is in practice no difference in credit risk exposure between the two models, given that both relate to the CM's exposure to the client. If it is intended that business undertaken whereby the client can look through to the CCP is not deemed bilateral for these purposes it would be useful to make this more explicit.

(b)   Shorten the Margin Period Of Risk ("MPOR") for cleared derivatives as MPOR is used in the following two cases in the Proposals:

i. CM-to-client leg (as applicable for client clearing)

ii. CCP calculation of the "hypothetical capital requirement"

This would simply recognise the economic reality that cleared products can be unwound much faster and with lower losses, if required, due to their higher liquidity and greater price transparency. In addition, since the majority of CCPs do not assume more than a two day close out for exchange-traded derivatives, it would not make sense to [use a far longer period in this context for CM trade exposures] and have CMs hold capital for a 10 day close out on the client leg. This is recognised in relevant client clearing documentation in the market, which provides the CM with much more powerful close out rights than they may receive under a typical ISDA bilateral master agreement (i.e., the lack of any provision for a grace period in the clearing agreements between client and CM.)

To ensure consistency of treatment, standardised and CEM methods should be adapted accordingly to mirror this shorter margin period of risk.

(c)   In the context of client clearing, the leg between the CM and the CCP (for client transactions) should not attract a capital charge at all where the CM loss in the case of a CCP default would be borne by the client via an enforceable agreement.

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[4] Refer ISDA letter to RMMG "Clarifications on BCBS 190 Proposals regarding Indirect Access to OTC derivatives", 21 April 2011.

The Proposals will result in a misallocation of capital and liquidity on a macroeconomic scale with strong pro-cyclical effects when market conditions become distressed

While ensuring that CCPs are "safe" is a critical regulatory goal, there are important economic costs to consider as well. The costs mainly come in two forms: economically inefficient amounts of high quality, liquid assets could be "trapped" in the clearing houses margin accounts and/or CCPs and their CMs could be required to hold excessive amounts of capital against their and their clearing clients' risk exposures

We firmly believe that both forms of cost will eventuate: Under the Proposals, CCPs will have the choice between three economically detrimental measures: 1) implement punitive margin requirements, 2) raise large amounts of equity, 3) require CMs to make large contributions to CCP default funds. This is the result of prescribing the Current Exposure Method ("CEM"), which may be an acceptable regulatory tool for small banks with small derivatives portfolios, but is inadequate for measuring the economic risk of a CCP where risks are not uni-directional.

Under the Proposals the so called "hypothetical capital" for CCPs to cover their exposure towards their CMs will be far higher than what the CCPs may actually need to cover their losses even in the worst of circumstances due to the risk insensitivity of the "current exposure method" which the Proposals compel CCPs to use. As noted previously[5], the CEM penalises large well-hedged portfolios versus smaller riskier ones. We consider this a highly undesirable incentive, and would strongly urge the RMMG to consider approaches which do not suffer from this drawback. In this regard, ISDA and EACH have both independently developed similar alternatives that focus on backtesting a CCP's resources against actual market moves. This ISDA alternative would also recognise that the charge is for an exposure to a "Qualifying CCP", who's default fund methodology, stress testing and size, are, by definition, compliant with the envisaged CPSS-IOSCO FMI principles. The best way forward is to have all three organizations work together to develop an optimal framework that provides the right incentives and is compliant with the CPSS-IOSCO FMI Principles.

In addition, the Proposals have strong pro-cyclical effects. For a CCP default fund to incur losses it is necessary that at least one CM defaults and the CCP realises losses which exceed the defaulting CM's initial margin and own default fund contribution while closing out the defaulting CM's positions. This is most likely to occur when market conditions are distressed and other CMs are under pressure as well. In this situation one would expect the CCP to have a stabilising influence on the market. However, under Proposals the opposite is likely to be the case since the regulatory capital requirement for CM on their depleted default fund contributions will increase precisely at the same time when they are trying to stem losses and reduce risk on their other positions. The reason for this pro-cyclical mechanism is that the risk weights on CM's default fund contributions are not capped.

Building on the previous point, the Proposals do not provide any guidance on what happens at the end of the waterfall. We consider there to be two scenarios: unlimited or limited CM liability. The Proposals do not provide adequate guidance in relation to either scenario.

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[5] ISDA, BBA, IFA and GFMA Response "Re: Basel Committee on Banking Supervision Consultative Document: Capitalization of bank exposures to central counterparties ("CCPs")", 4 February 2011

(a)   We might assume CMs have unlimited liability to replenish the default fund. However, the Proposals   have only dealt with prefunded default fund contributions, making no effort to provide guidance on quantifying unfunded but committed default fund contributions where CM liability is unlimited.

(b)   We might assume CMs have limited liability to replenish the default fund. However, there is no provision to cap capital allocated to the CMs based on the limits of their liability to replenish the default fund.

While the Proposals for default fund contributions largely fail at achieving the stated objective of being "risk sensitive", they are also inconsistent and provide for arbitrage opportunities. margin payments and default fund contributions are treated as substitutes in the calculation of the CCP's hypothetical capital calculation. However, CMs face lower regulatory capital requirements for margin collateral than for default fund contributions. Increasing initial margin requirements would however make clearing more expensive for clients and trap even more liquidity in the clearing system.

Accordingly, a second important element towards mitigating the discrimination of clearable products and of encouraging their increased use, would be to introduce a measure for the actual risk that CCPs are exposed to and to introduce risk weights for CMs' default fund exposures which are not pro-cyclical and can be reliably planned. This would effectively contribute to the economic goal of ensuring that the market for standardised, clearable products remains stable and liquid even under otherwise stressed market conditions.

The Proposals are inconsistent with the envisaged risk management CPSS-IOSCO principles and contradict provisions in the Dodd-Frank Act and the envisaged provisions of EMIR

There are inconsistencies between the conceptual approaches of the CCP regulators versus the Proposals to the same problem, which will provoke conflicts between the CCPs and their CMs. The CPSS-IOSCO principles, Dodd-Frank Act and EMIR prescribe the development and use by CCPs of risk-sensitive margin models, for example VaR-based methodologies, as a measure for CCPs of their counterparty exposure to CMs (which must be covered by initial margin payments) and stress tests to determine the adequate size of their default funds. However, the RMMG insists that CCPs determine counterparty exposure on the basis of the risk insensitive CEM methodology, which recognises the effect of hedging and margin collateral in a very rudimentary fashion. Encouraging CCPs to invest in the improvement of their risk systems and methodologies - and granting approval to use them subject to strict supervisory criteria - would be socially desirable, and is the approach our alternative model takes.

Accordingly, a third major element towards mitigating the discrimination of clearable products and of encouraging their increased use would be for bank regulators to agree a common set of standards with CCP regulators for allowing CCPs to use their own models in determining counterparty risk and sizing default fund requirements as a measure for how much risk capital is required to support the CCP's risk. Accordingly, members' collective regulatory capital requirement should be capped at this amount.

We are not advocating that standards should be relaxed or that CCPs should enter into a race to the bottom for lower margin or default fund requirements under the competitive forces of the market. However, we firmly believe that high risk management standards cannot be
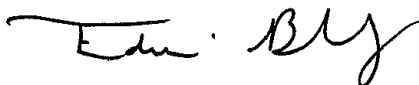
achieved by enforcing margin and capital requirements which are not sensitive to measures of actual risk.
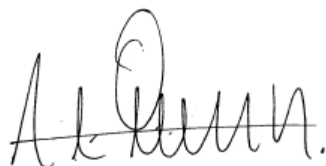
Conclusion

The public policy rationale for the RMMG's Proposals is to require banks to more appropriately capitalize their exposures to CCPs, including trade and default fund exposures. While this is an appropriate goal, and the Proposals make a start to the discussion, significantly more consultation, dialogue and open debate among affected parties remains necessary to refine the proposals to be efficient, effective and proportionate to the policy goals and to avoid the unintended consequences discussed above. As stated at the outset, effective reforms require the RMMG to continue an active dialogue with the industry, CPSS-IOSCO and other stakeholders.

We appreciate the opportunity to provide these comments. Should you require further information, please do not hesitate to contact the undersigned.

Sincerely,

Edwin Budding
Policy Officer, Risk and Financial Regulation
International Swaps and Derivatives Association, Inc.

Andres Portilla
Director, Regulatory Affairs
Institute of International Finance

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ISDA Research Notes

A Note on the Impossibility of Correctly Calibrating the Current Exposure Method for Large OTC Derivatives Portfolios

June 2011

Executive Summary

The capital charges for counterparty credit risk form an important part of the Basel Capital Accords. The Basel Committee permits firms to use a variety of methods to calculate regulatory capital on this risk class, including a simple approach – the constant exposure method or CEM – and a more sophisticated models-based approach known as EPE (for 'expected positive exposure').

Counterparty credit risk capital models estimate the potential future exposure ('PFE') of a portfolio of derivatives with a counterparty based on whatever margining scheme applies. The CEM approximates this PFE using a constant percentage of notional, with the portfolio capital charge being the sum of the percentages which apply to each instrument. The CEM therefore recognizes no diversification benefit. In contrast, EPE approaches model the entire future of the net portfolio and thus provide much more accurate estimates for portfolios with more than a handful of instruments. The inaccuracy of the CEM is hardly surprising as it was intended only for smaller portfolios and less sophisticated firms.

More recently the Basel Committee has proposed that the CEM be used as a method for determining the adequacy of financial resources available to an OTC derivatives central counterparty ('CCP'). Since cleared portfolios are very large and very well-hedged, it might be imagined that the CEM is not well suited to this task. This paper confirms that suspicion. In particular we show that the use of the CEM to estimate the riskiness of CCP default fund contributions leads to a significant overstatement of risk. Further, we show that the CEM cannot be simply recalibrated to provide a more risk sensitive approach. Thus an approach which provides more accurate estimates for typical CCPs is to be preferred.

Introduction

The constant exposure method, or CEM, was introduced as a simple approach for approximating the potential future exposure of OTC derivatives. Crucially, it is the simplest of the approaches permitted for the Basel Committee for this purpose, and thus intended only for:

- Less sophisticated banks, and

- Small portfolios of derivatives containing no more than a handful of instruments.

Latterly the Basel Committee has proposed using the CEM to estimate the riskiness of default fund contributions made to central counterparties ('CCP'). The proposal specifically envisages using the CEM to calculate a 'hypothetical capital' that a CCP would be required to have, and comparing the CCP's prefunded financial resources with that hypothetical capital. If the resources are not more than the hypothetical capital, the Committee proposes a penal capital treatment of default fund contributions.

Cleared OTC derivatives portfolios are very different from those that the CEM was designed to deal with. Clearing member house portfolios are typically very large, and often very well hedged. Thus, given that the CEM was not designed for this type of portfolio, there might be concern that the CEM does not produce a meaningful estimate of hypothetical capital. In this paper we show first that that concern is justified – the CEM indeed dramatically over-estimates hypothetical capital. Our second result is less obvious: we show further that the CEM cannot be recalibrated to calculate hypothetical capital accurately for typical cleared portfolios. This is because it fails to recognise the inherent risk diversification benefit in large portfolios.

I. Methodology

We study the behaviour of the CEM by looking at a large number of OTC derivatives portfolios incorporating a range of interest rate and FX derivatives across multiple currencies and tenors. We calculate capital using the sophisticated approach permitted in Basel 2 – portfolio based expected positive exposure, or EPE – and using the CEM.

A large number of portfolios were generated randomly based on an extensive set of instruments. This provided a wide range of both directional and well-hedged portfolios for the analysis. The methodology for portfolio construction is detailed in Appendix One.

For each portfolio, we examined the relationship between CEM and EPE-based exposure at default in each of three situations:

- Unmargined.

- Daily variation-margined, with a 10-day period of risk.

- Daily variation-margined, with a 10-day period of risk and initial margin required to cover a 1-day, 5-day or a 10-day move at 99% confidence level.

II.   Diversification

The CEM capital charge for one transaction is a percentage of notional, with the percentage varying by transaction type and maturity. The CEM charge for a portfolio of more than one transaction is the sum of the CEMs for each individual transaction.

In contrast, the EPE of portfolio of transactions is not the sum of the EPEs of individual transactions, but rather a property of the net risk of portfolio. Diversification works to reduce EPE, but not to reduce CEM.

A simple measure of diversification is therefore as the ratio of the maximum unmargined EPE of the portfolio over the 1st year to the sum of the EPEs of each instrument in the portfolio. The smaller this number is, the more diverse the portfolio is. Figure One shows the distribution of diversification amongst the generated portfolios, with 95% of the chosen portfolios have a diversification ratio of less than 10%. This is typical of cleared dealer portfolios.
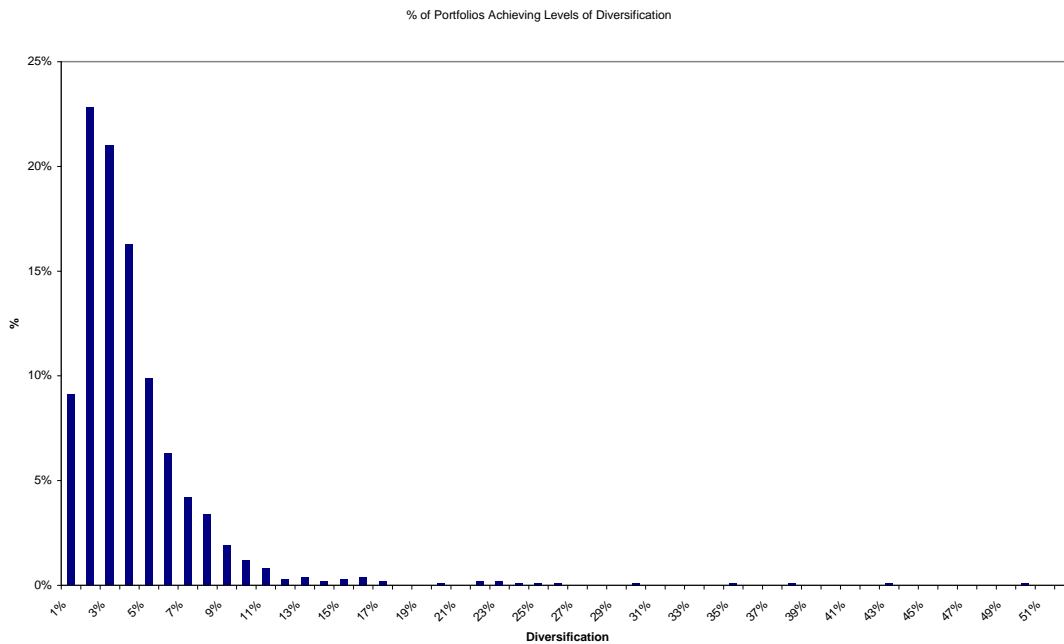
% of Portfolios Achieving Levels of Diversification

Figure One: Distribution of Diversification

To give some insight into this diversification measure, we also plot it (in Figure Two) against number of trades. As might be expected, smaller portfolios are less diverse. Once a portfolio reaches 1,000 trades, it is likely to have a diversification ratio of less than 10% even if it is rather directional. The average diversification level for large portfolios in our analysis is 4%.

Note that typical clearing member portfolios at interest rate derivatives CCPs are currently tens or hundreds of thousands of transactions, so they are likely to have diversification ratios close to the 4% average.
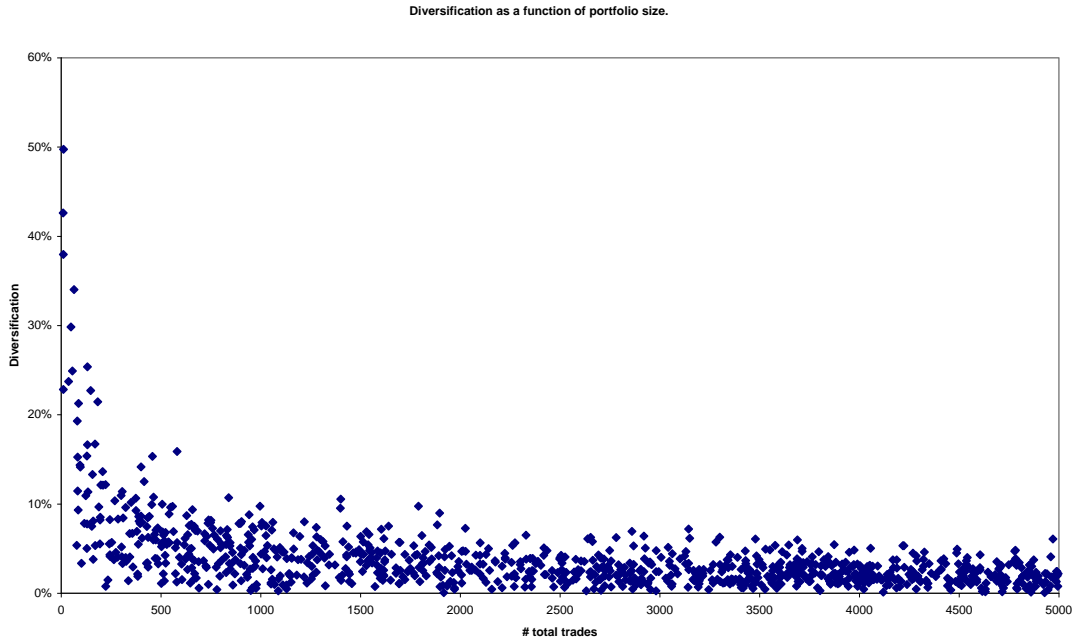
Diversification as a function of portfolio size.

Figure Two : Diversification as a function of total portfolio size.

III. How good an estimate of capital is CEM?

In order to examine the performance of the CEM as a capital measure, we calculate the ratio of the correct EPE-based capital estimate to the CEM capital. Figure Three plots this for unmargined trades as a function of diversification.
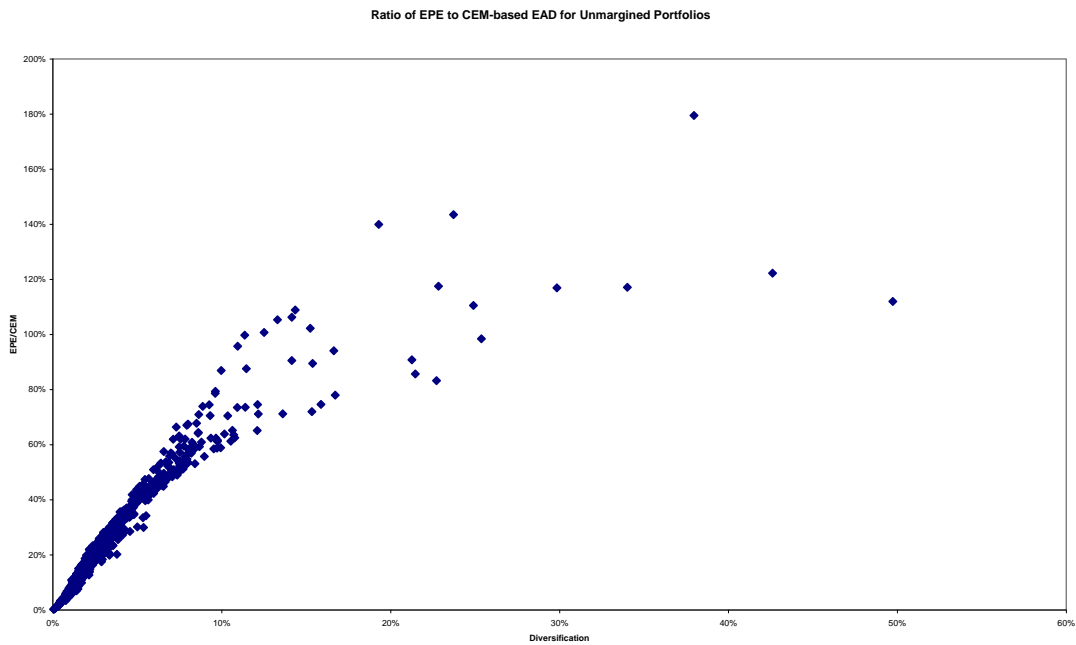
Ratio of EPE to CEM-based EAD for Unmargined Portfolios

Figure Three: Ratio of EPE to CEM-based EAD for Unmargined Portfolios

Here we see that for less diverse portfolios to the right of the plot, the CEM performs reasonably, but as soon as the portfolio diversification measure is 15% or less:

- The EPE/CEM ratio is less than one, i.e. the CEM over estimates capital; and

- The ratio is a strong function of diversification, i.e. the CEM is more wrong for more diverse portfolios.

For very diverse portfolios with a ratio of 1% or less, the EPE/CEM ratio tends to zero; it seems that there is no bound on how wrong the CEM can be for unmargined portfolios.

The dependence of EPE/CEM on diversifications means that the CEM cannot be recalibrated to produce better answers: how wrong it is is itself a function of portfolio diversification.

Figure Five shows the analysis for margined portfolios with no initial margin. Here we see that the CEM always over-estimates capital, and again that how much it over-estimates capital by is a strong function of diversification.
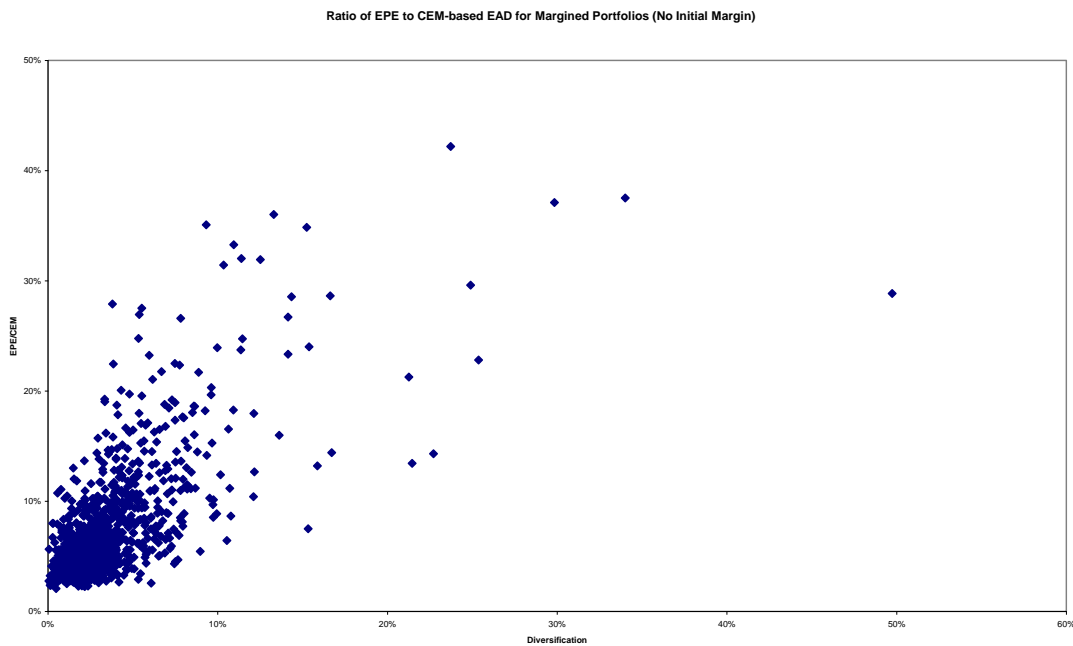

Figure Four : Ratio of EPE to CEM-based EAD for Margined Portfolios (No Initial Margin)

The remaining charts examine the ratio when initial margin is present. We look at initial margin levels calculated from the 1-day, 5-day and 10-day 99% portfolio exposure (calculating this from the same distributions that drive the EPE-based measure).
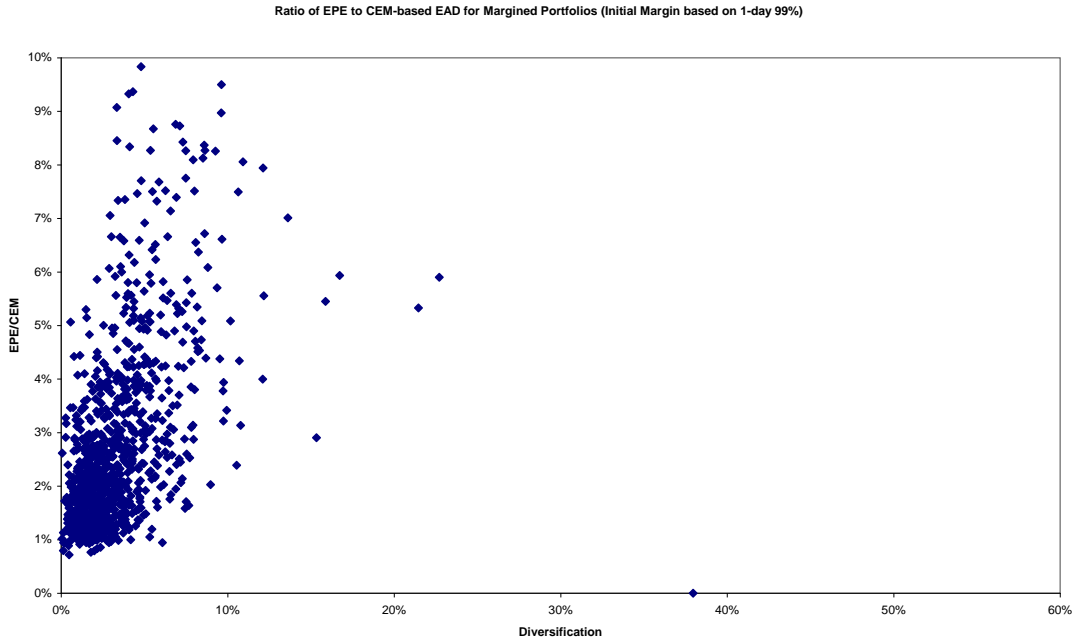
Figure Five : Ratio of EPE to CEM-based EAD for Margined Portfolios (IM based on 1-day 99%)
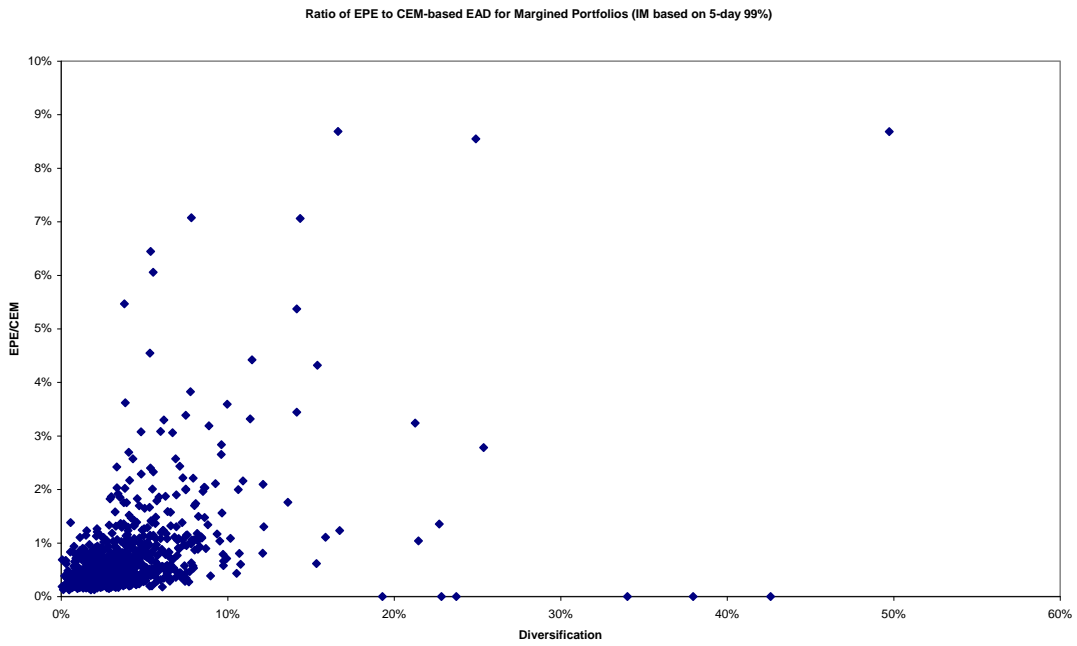
Figure Six : Ratio of EPE to CEM-based EAD for Margined Portfolios (IM based on 5-day 99%)
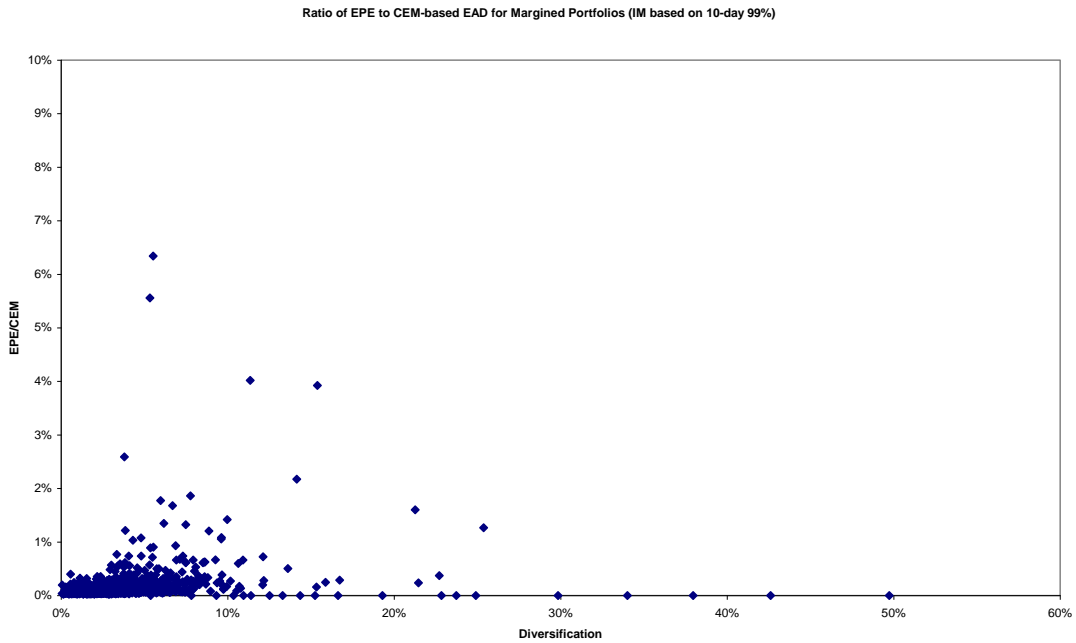
Figure Seven : Ratio of EPE to CEM-based EAD for Margined Portfolios (IM based on 10-day 99%)

A similar picture emerges here.

- The CEM grossly over-estimates capital, sometimes by a factor of a hundred or more;

- How wrong it is depends on portfolio diversification.

IV. Conclusions

Our analysis shows that CEM-based capital estimates are dramatically over-stated for large OTC derivatives portfolios. Moreover no simple recalibration is possible without incorporating an additional dimension of diversification. The CEM is therefore not an appropriate tool for calculating CCP hypothetical capital.

V. Appendix I: Transaction Generation

The following trade types were included in this analysis:

- Interest rate swaps.

    - Notionals: USD 100MM to 1Bn, in 100MM steps converted at spot to relevant currency.

    - Currencies: USD, GBP, EUR, CHF, JPY, NOK, SEK, NZD, AUD and CAD.

    - Tenors: 1y, 2y, 5y, 7y, 10y, 12y, 15y, 20y, 25y, 30y

    - Moneyness: at-the-money with +/-5% and +/-10% relative increments.

    - Frequencies: Semi/Semi.

- Cross-currency swaps.

    - Notionals: USD 100MM to 500MM, in 100MM steps converted at spot to relevant currency.

    - Currencies, in groups with all cross-currencies represented:

    - (CHF, EUR, GBP, JPY, USD), (EUR, BRL), (EUR, RUB), (USD, BRL), (USD, RUB).

    - Tenors: 2y, 5y, 10y

    - Moneyness: at spot, with +/- 5% and +/-10% relative increments.

    - Type: Fixed/Fixed.

- Interest Rate Options

    - Notionals: USD 20, 50 and 100MM converted at spot to relevant currency.

    - Currencies: USD, GBP, EUR, CHF, JPY, NOK, SEK, NZD, AUD and CAD.

    - Tenors: 2y, 5y and 10y.

    - Moneyness: at-the-money with +/-5% and +/-10% relative increments.

    - Type: Cap and Floor

Uniformly distributed weightings achieve combinations of long/short positions. Given the above, there are 2,020 possible combinations, from which we derive 1,000 portfolios of 5,000 transactions. This leads to multiple 'picks' of the same position. From a transaction perspective, this may lead to a reduction in the actual number of different types of transaction and the individual weighting gets some redistribution away from uniform. These combinations then provide a mixture of diverse and directional portfolios.