

APPENDIX 1

ISDA

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July 31st, 2003

Dear Mr Caruana,

The International Swaps and Derivatives Association (ISDA) and The Bond Market Association (TBMA, and together with ISDA, the Associations) appreciate the opportunity to comment on the Third Consultative Paper (CP3) issued by the Basel Committee on Banking Supervision on the New Capital Accord. Giving due consideration to the tight schedule that the Committee has set itself for finalising the Accord, the Associations concentrate solely on the key issues identified by their memberships in the following comment letter. The treatment of securitisation transactions is being reviewed in a separate letter.

ISDA refers the Committee to its QIS3 commentary¹⁰ for an analysis of further but less significant concerns arising from the Capital Accord review. Our specific comments regarding the capital treatment of operational risk (Section 2.V of CP3) and the minimum requirements under the IRB approach (section 2.III.H of CP3) are attached for reference at Appendix 1 and Appendix 2 respectively.

¹⁰ ISDA's commentary on the QIS3 Technical Guidance, dated December 20th, 2002, www.isda.org

The Associations believe that the following core issues would benefit from clarification and re-working in the final Accord :

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We hope that the comments below will assist the Committee in shaping the final capital rules.

1. **Capital treatment of credit derivatives**

a- Restructuring :

The Associations applaud the proposed change brought to the treatment of restructuring risk arising from the use of certain credit default swaps (CDS). The new approach is better aligned with risks borne by protection buyers, who are exposed to restructuring risk only where they have no control over the occurrence of restructuring events. Importantly however, even where such control is not demonstrated to exist, having acquired credit protection in the form of a CDS excluding restructuring does offer some degree of protection. We welcome the Committee's attempt at measuring this quantum of protection via a discount applied to full capital relief.

The discount should be a function of the relative incidence of restructuring events vis-a-vis other forms of default events, as well as of any discrepancy between loss given restructuring and loss given default.

- The Associations do not possess independent information on the incidence of restructuring, but have collated the following data from relevant rating agencies' studies.

As shown in a recent report published by Fitch Ratings¹¹, restructuring events are relatively rare. The Fitch Report analyses defaults called in the context of synthetic CDOs between 2000 and 2003, representing 112 credit events recorded on 28 reference entities, including Argentina, WorldCom and Enron.

Fitch find that only 3.3% of these events were called under the "restructuring" clause of the ISDA 1999 Credit Derivative Definitions, noting however that a greater proportion of these events could, in principle, have qualified as restructuring events. This percentage could be as high as 15% based on further discussion with the authors.

Additional information on the frequency of restructuring events is found in studies conducted by Standard and Poor's¹² and R&I Information, Inc, a Japanese rating agency.

Standard and Poor's find that, over 2001-2002, 3 out of 16 credit events reported in static CDOs in Europe were restructurings, against 4 out of 30 in the US. The percentage of

¹¹ Credit Events in Global Synthetic CDOs : 2000-2003, Fitch Ratings, May 12, 2003

¹² Credit Event Data- What we observed on the front- US and Europe, presentation given by Standard and Poor's at the Second Annual CDO Conference

restructurings in Japan was assessed by R & I Information at around 28% of all credit events recorded between 1978 and 2001.

In the light of the information above, the Associations would suggest that the Basel Committee retain a 20% ballpark figure for the frequency of restructuring. This percentage is broadly consistent with that used by firms to price restructuring basis risk¹³, and stands above our members' assessment of the frequency of restructuring events in transactions hedged by credit default swaps.

- Information on the severity of restructuring events is extremely scarce. It can conceptually be argued that restructuring should result in improved recovery compared to straight bankruptcy. On these grounds, retaining a loss given restructuring percentage of 40% under Foundation IRB would appear reasonable, vis-à-vis the 45% LGD applied to senior unsecured facilities. A 60% recovery rate is furthermore consistent with the figures found by S&P in the study mentioned above. ISDA is pooling loss given default data jointly with the Risk Management Association, with a view to producing estimates of loss given default by asset category, type of security, and event type. This will enable us to produce loss given restructuring data in future. However, the database being relatively new, it is unlikely that any usable statistic will be available before several years.

Feeding the frequency and severity factors above into the IRB function, one obtains a discount factor of approximately 35% [the discount is defined as the percentage by which the full capital charge should be multiplied in order to produce a capital charge for restructuring risk only]. The Associations would recommend that the regulators retain this discount factor under Foundation IRB. Firms treated under Advanced IRB should have the ability to measure the discount themselves, subject to supervisory review.

b- Credit default swap add-ons :

The proposed add-ons are viewed by our membership as overly conservative and inconsistent with firms' internal assessment of counterparty exposure on CDS contracts.

CDS add-ons for protection sellers :

The Associations accept that it is appropriate to apply a capital charge to sold credit options (paragraph 675 of CP3) where all or part of the total option premium remains unpaid, for instance because the premium is payable in instalments. The option seller is in this instance exposed to a possible tightening of spreads resulting in positive exposure to the option buyer. The seller's exposure is however, and most importantly, capped at the net present value of future premia.

The Committee links the application of add-ons to the inclusion of the CDS contract within the scope of a netting agreement. We accept that a variation in the [generally negative] value of the CDS for the seller carries the risk of increasing the seller's net exposure to the buyer. However, this is true of all written options, and has not to date justified the application of add-ons on these transactions. The Associations recommend that netting be discussed and resolved for credit derivatives, as for other OTC derivatives,

¹³ For example, What is the value of the restructuring credit event, Goldman Sachs, May 13, 2003

as part of our on-going dialogue with the Committee on the treatment of counterparty risk (see section 2 below).

CDS add-ons for protection buyers :

As per Annex 5 to ISDA's commentary on the QIS3 Technical Guidance, the Associations question the size of the add-on retained for protection buyers hedging qualifying underlyings. ISDA found that an add-on of 3% was more appropriate than 5%. We also advocated introducing a maturity dimension to the calculation of the add-ons in this proposal.

CDS add-ons in first to default structures :

Paragraph 676 of CP3 indicates that for first to default transactions add-ons should be determined by the lowest credit quality underlying in the basket. This treatment is inconsistent with that retained for specific risk purposes, whereby protection must be recorded against the least risky asset in the basket. We strongly recommend that the same asset be used for the purpose of setting specific and counterparty risk charges. Specific risk offsets should be recognised, and counterparty risk charges calculated, against one asset in the basket, at the discretion of the protection buyer. We would expect the riskiest asset to be elected in most cases.

c- Substitution :

The Associations continue to view the application of the substitution principle to measuring double default risk as unjustifiably onerous and hope that it will be possible to reconsider its appropriateness before the Accord is finalised. We note that in a recent research paper¹⁴, the Federal Reserve Board acknowledges the conservativeness of substitution and suggests a more risk sensitive treatment of double default risk. The Associations will comment separately on this paper. The Associations' latest submission on double default related issues is attached at Appendix 3 for further background.

d- Specific risk offsets :

As already stated in ISDA's response to CP2, the Associations feel that, rather than approximating the benefit of hedging by applying an arbitrary 80% specific risk offset, credit risk positions should be represented as Floating Rate Notes (FRNs). Both the underlying and the CDS would be translated into FRN equivalents according to their sensitivity to credit spread variations. A change in credit spreads in the underlying would immediately lead to a readjustment in the default swap's and the underlying's MTM, creating a net specific risk position, which would then attract a capital charge. Details of this approach can be found in ISDA's response on CP2, Annex 5¹⁵ and are appended at Appendix 4. It is disappointing that the Committee has not explained why

¹⁴ Treatment of Double-Default and Double-Recovery Effects for Hedged Exposures under Pillar 1 of the Proposed New Basel Capital Accord, June 2003

¹⁵ ISDA's response to the Basel Committee on Banking Supervision's consultation on the New Capital Accord, May 2001, www.isda.org

the 80% offset limit is appropriate and our proposal, unacceptable. A response from the Committee on this point would be most appreciated.

e- Operational requirements applied to CDSs :

While we support the principle that the protection offered by a credit derivative to the protection purchaser should be unconditional, the Associations believe that it is important to preserve the integrity of the close-out netting effected by a Master Agreement by including all transactions under that Master Agreement within its scope. Practically, a protection buyer's performance under a Master Agreement will dictate the form in which credit risk mitigation is achieved. Two situations should be distinguished for this purpose:

- (i) the protection buyer does not default under the Master Agreement, in which instance protection acquired in the form of a credit derivative instrument covered by the Master Agreement results in compensation by the protection seller, under the conditions set out in the confirmation agreed upon by the parties;
- (ii) the protection buyer defaults under the Master Agreement, resulting in termination and close-out netting between all transactions covered by the Master Agreement, including any purchased credit derivative protection. The mechanics of termination under a Master Agreement entail the loss of credit risk protection, offset however by payment to the protection buyer of an amount equal to the cost of replacement of the credit derivative contract.

The Associations are concerned that some regulators may view the loss of protection mentioned at (ii) above as breaching the “unconditionality” principle, despite the possibility for the protection buyer to replace the contract at no cost. It would be paradoxical if, as a result of this interpretation, counterparty credit risk (that is, the protection buyer's credit risk on the protection seller) in relation to credit derivatives trades was increased because such trades could not be included within a close-out netting arrangement.

We therefore strongly advocate the amendment of paragraph 160 of CP3, to the effect that credit derivatives can explicitly be documented under Master Agreements while still being deemed to provide unconditional and irrevocable protection for regulatory purposes.

Similarly, the procedural requirements generally included in credit derivative documentation (e.g. requirement for any applicable grace period to have elapsed, requirement that non-payment be objectively verified etc) should not be deemed to contradict the “unconditionality” and “irrevocability” principles, since they do not render the protection conditional on the protection provider's willingness to pay.

2. Counterparty risk

a- Use of VaR for repo-style transactions :

The Associations welcome the adoption by the Committee of the sampling methodology recommended in their letter of November 8, 2002, in connection with the backtesting of VAR models. We would further like to emphasize the need for allowing flexibility around the sampling methodology used by each firm. Some firms might, for instance, wish to define the test sample on a quarterly basis, and not re-adjust it daily. We believe that quarterly re-adjustment can provide a

sufficiently accurate picture of the firms' counterparty risk exposure, subject to supervisory review.

The Associations continue to question the size of the multipliers proposed in paragraph 151 of CP3. As previously expressed in a letter, dated March 19, 2003, from the Associations to the CRM Sub-group, these multipliers are technically unjustifiable and so penal as to deter firms from utilizing the VaR approach. We append our March 2003 letter to the present commentary for background at Appendix 5.

We further believe that requiring an enforceable netting agreement for the application of VaR-based models to repo-style transactions prevents financial institutions from taking full account of portfolio diversification effects. Even in the absence of netting, portfolio diversification mitigates risk, since it is unlikely that all transactions will move concurrently against a financial institution. Given that portfolio effects occur separately from netting benefits, and that models are generally able to differentiate between these effects, the Associations find the distinction established between nettable and non-nettable transactions unjustified. It would furthermore be inefficient to have to run two separate systems to arrive at potential exposure (e.g. : having VaR for nettable transactions and a haircut methodology for the rest).

b- Treatment of potential exposures associated with OTC derivatives :

We welcome the Committee's decision to review the treatment of potential exposures arising from OTC derivative transactions once the Accord has been finalised. However, we would appreciate clarification of the Models Task Force (MTF)'s time schedule on this project, as the overview paper published by the Committee seems to indicate a start date of 2007. We had understood from previous contacts with the MTF that the project would be launched in 2004. It is critical that this area is considered as soon as possible to ensure that any modifications can be brought at the same time as the Accord is implemented. This will prevent the practical problems of firms needing to make a number of successive changes to their systems. In addition, it will mean that the first iteration of the New Accord will include considerable advances in risk sensitivity, not just in risk weightings used, but also in the measurement of exposure.

The Associations wish to emphasize once more that a review of the counterparty risk treatment of derivatives should entail a parallel review of the treatment of securities financing transactions (SFTs) to ensure uniform capital treatment of these transactions. Like many OTC derivative trades, repo and securities lending transactions involve the transfer of collateral, and are utilized by market participants for many of the same purposes. As such, these transactions are increasingly managed together with OTC derivatives, including under cross product netting agreements, and should be subject to a consistent capital treatment by the Basel Committee. In addition to providing a conceptually consistent treatment for similar transactions, uniform capital treatment of these transactions will provide a further incentive for institutions to engage in cross product netting.

Considering the need for a parallel review of SFTs, it is vital that the timing of the review is considered with some urgency. The Associations are more than willing to resume the dialogue initiated by ISDA in 2001 with the MTF on this topic.

The Associations, jointly with LIBA, have prepared detailed recommendations regarding these issues, drawing upon recent research conducted by the Federal Reserve Board¹⁶. We hope that this document, published in June (“Counterparty Risk Treatment of OTC Derivatives and Securities Financing Transactions”, available on the Associations’ websites), will form a solid basis for the continuation of our dialogue with the MTF.

We are hopeful that a new approach can be identified soon, but would like to stress with the Committee the need for allowing firms time to adapt their systems in view of a change of approach. If a new measure of exposure was agreed upon close to implementation date for the New Accord, we would like firms to be able to benefit from a transitional adaptation period in order to bring their systems up to date. This may require delaying the implementation of the provisions of the New Accord concerning repo-style transactions, as it would be inefficient for firms to have to apply a set of rules for a few months to then move on to a new standard.

c- Miscellaneous comments :

The Associations believe that securities financing transactions entered into in connection with prime brokerage activities, such as margin loans, should be subject to the same capital requirements and rules as repo-style transactions. Prime brokerage securities financing activities are generally subject to the same risk management practices as repo activity, such as daily marking to market of exposures and are subject to daily re-margining. In particular, the Associations believe that the Committee should clarify that capital requirements for prime brokerage securities financing activities that have these characteristics can be calculated using a counterparty VaR-type measure, similar to that permitted for repo-style transactions.

Footnote 34 to Paragraph 116 (a): It is our understanding, based on informal discussions with members of the Basel CRM Group, that footnote 34 is intended only to apply to a limited set of non-repo style loan transactions. While footnote 34 may currently imply such limited scope given the existence of few, if any, repo transactions where instruments are held by a third –party bank in a non-custodial capacity, for the avoidance of doubt, we would propose that the first clause of footnote 34 be further clarified as follows: “When cash on deposit, certificates of deposit or comparable instruments issued by the lending bank are held as collateral at a third-party bank in a non-custodial capacity in connection with non-repo style loan transactions,”

Paragraphs 106, 138: Currently, it is contemplated that repo-style transactions with daily marking to market and daily re-margining will be eligible to receive haircuts based on a 5-business day holding period. Under most repo and securities lending transactions, positions are marked to market daily, based on the prior day’s values or closing prices. Re-margining occurs if there is a margin deficit or margin excess. Generally, satisfaction of margin calls in respect of margin deficits (or return of margin in the case of margin excess) may occur the same day (if the call is made by a certain cut-off time) or next day. We believe that this market practice is generally what is referred to as daily marking to market and daily re-margining. The Associations request that these paragraphs be clarified to reflect the same language formulation as used when referring to repo-style transactions in paragraph 141, that repo-style transactions are “subject to” daily re-margining.

Para 320 : The Associations note that paragraph 320 allows banks to recognise guarantees, but not collateral obtained on equity positions treated under the market based

¹⁶ Regulatory capital for counterparty risk : A response to ISDA’s proposal, by Michael S. Gibson, Federal Reserve Board

approach. We fail to understand why collateral, where provided by a party not correlated with the equity issuer, would constitute an unsuitable form of mitigation. We would be grateful for clarification of the Committee's intentions in this respect.

Para 292: The Associations appreciate the Basel Committee's allowing firms to adjust their maturity for short-term exposures. However, it is unclear from the current drafting of this paragraph whether the capital treatment of "fails" is contemplated. This paragraph appears to imply that fails (defined as the failure to delivery securities on settlement date) should attract a capital charge. It could even, more broadly, be interpreted to mean that securities transactions would on *trade* date (instead of settlement date) incur additional capital requirements until they are settled.

The Associations would appreciate clarification on how settlement failures are to be treated under CP3. If settlement failures are to be addressed, we strongly believe that the Accord should address "fails", and not potential pre-settlement risk. Given that the majority of fails occur as a result of operational issues, the Associations believe that risks arising from such operational fails are largely addressed within the Accord through the capital treatment for operational risk. Such operational fails generally resolve themselves within a short period of time and do not result in credit loss. Fails should not be subject to additional capital requirements until after a reasonable grace period has elapsed. This treatment would be consistent with current regulatory approaches in the EU¹⁷ and the US for broker-dealers under regulations set out by the Securities and Exchange Commission¹⁸.

3. Maturity

The Associations believe that the treatment of maturity warrants further consideration in the Accord. We formulate detailed proposals below in the hope that CP3 can be amended to more accurately reflect finance theory and banks' practice.

a. Maturity adjustment below one year :

The Committee offers to remove the one year maturity floor for certain short term exposures (paragraph 291).

The Associations support the view that for some facilities, for which banks can demonstrate that they actively monitor the financial condition of the borrower and that they can cancel the facility upon deterioration of its quality, applying a maturity adjustment below one year is wholly justifiable. Importantly, the maturity adjustment should be available for **all** exposures of less than a year of maturity, and not just for those of a remaining maturity of less than three months.

We do not find however that using the maturity formula embedded in the IRB function is appropriate for this purpose.

¹⁷ Annex II of Council Directive 93/6/EEC of 15 March 1993 on the capital adequacy of investment firms and credit institutions

¹⁸ See, e.g. SEC Rule 15c3-1 ("Net Capital Rule"), which generally requires broker-dealers to hold capital for fails remaining outstanding beyond a certain grace period

Conceptually, for transactions with more than one year of remaining maturity, the maturity adjustment reflects the additional amount of capital required to offset **migration risk**, i.e. the probability that credit quality will decline before expiry.

By definition, migration risk is only relevant for assets of a maturity exceeding the modelling horizon of 1 year. Below 1 year, banks are exposed only to **default risk**. Employing the same maturity adjustment formula to address two conceptually distinct forms of risk is at best questionable.

Practically, the formula provides little recognition of short dated risk, as shown in the following table:

PD	Current capital adjustment (1D*)
0,03%	0,399
0,05%	0,508
0,10%	0,622
0,20%	0,709
0,40%	0,776
0,50%	0,795
0,70%	0,820
1,00%	0,844
2,00%	0,884
3,00%	0,903
5,00%	0,924
10,00%	0,948
15,00%	0,959
20,00%	0,966

[* Based on 220 business days]

The capital reduction offered by the IRB maturity adjustment does not exceed 60%, and for poor quality assets, 10%, where the maturity of the exposure shrinks down from a year to just 1 day. This amount of capital relief vastly underestimates that measured by banks internally.

The Associations, having reviewed the methodologies employed by member firms for charging capital on short dated exposures, recommend removing the maturity adjustment for exposures of less than a year of remaining life, and instead, adjusting the probability of default assigned to these exposures.

- The first step consists in deriving probabilities of default under one year based on the obligor's 1 year PD, using logarithmic interpolation:

$$PD_n = 1 - (1 - PD_1)^n$$

where PD_n is PD at horizon n, n is the fraction of 1 year corresponding to horizon n, and PD_1 is the one-year PD. By defining short dated PDs as proposed above, one implicitly assumes that the lender can terminate the facility at the relevant horizon [the shorter of term or credit quality review]. Specifically, no roll-over assumption is made concerning the facility being rated. It is

however possible to show that risk weights determined assuming systematic roll-over, where default occurs purely as a “surprise event” [downgrades would not result in default due to the constant monitoring of exposures, a paradigm that best reflects default risk arising from traded exposures] are similar to those derived using the interpolation above¹⁹.

• Exposures receive an IRB capital charge based on the short term probability of default determined above. Worthy of note is the fact that the correlation factor in the IRB function is not modified to reflect the short term PD; this is because empirical correlation has not been shown to increase with a decrease in maturity.

This approach naturally results in immaterial capital charges for very short dated exposures. Because default risk does not reduce to zero for credit risky facilities, however short dated they may be, the Associations propose to add a degree of conservativeness to the methodology described above, and have identified two alternative means of achieving this purpose :

- (i) *The simplest approach would involve imposing a maturity floor of one month on all transactions. The resulting capital adjustment factors [the capital adjustment factor is the ratio between the proposed charge and the Foundation IRB (1 year) capital charge] would be as follows, for set maturities of 1 month, three months and six months.*

Capital adjustment factor					
	Maturity	1M	3M	6M	1Y
PD					
	0.03	12.76%	32.44%	57.21%	1
	0.05	13.20%	33.00%	57.87%	1
	0.1	13.90%	34.05%	58.84%	1
	0.2	14.69%	35.21%	59.90%	1
	0.4	15.58%	36.48%	61.02%	1
	0.5	15.86%	36.89%	61.39%	1
	0.7	16.28%	37.48%	61.92%	1
	1	16.70%	38.07%	62.44%	1
	2	17.36%	39.01%	63.28%	1
	3	17.69%	39.49%	63.73%	1
	5	18.27%	40.37%	64.56%	1
	10	19.99%	42.91%	66.88%	1
	15	21.71%	45.39%	69.08%	1
	20	23.34%	47.70%	71.09%	1

The Associations are providing the table above purely for illustrative purposes, considering that the maturity adjustment can be derived on a continuous basis using the formula presented above.

- (ii) *One could alternatively correct the loss percentile embedded in the IRB function to ensure that it was consistent with a 99.9%, 1 year*

¹⁹ The Associations would be pleased to share this research with the Committee should this be of interest. The risk weights obtained are comparable to those derived using a one month maturity floor [table on page 9].

solvency standard. Practically, the n days percentile would be set as follows:

$$C_n = C_1 ^ n$$

where C_n is the confidence interval at horizon n, n is the fraction of 1 year corresponding to horizon n, and C_1 is the one-year required confidence interval. For example, the confidence interval for a 3-month transaction would be $99,9\% ^ (1/4) = 99,975\%$.

The capital adjustment factors produced by this methodology are more conservative than those proposed in the previous table :

1-year PD	Proposed capital adjustment (1D)	Proposed capital adjustment (3M)	Proposed capital adjustment (6M)
0.03%	13.60%	60.15%	77.36%
0.05%	13.51%	59.36%	76.99%
0.10%	13.07%	58.63%	76.50%
0.20%	12.39%	57.85%	75.97%
0.40%	11.72%	56.98%	75.39%
0.50%	11.26%	56.64%	75.16%
0.70%	10.77%	56.03%	74.78%
1.00%	10.24%	55.27%	74.29%
2.00%	8.79%	53.44%	73.12%
3.00%	7.98%	52.37%	72.44%
5.00%	7.29%	51.60%	72.03%
10.00%	7.30%	52.63%	73.02%
15.00%	7.76%	54.41%	74.50%
20.00%	8.25%	56.22%	75.97%
Confidence interval: 99.999545% 99.975% 99.950%			

The Associations would welcome an opportunity to discuss the options above in detail with the Models Task Force.

b. Calculation of effective maturity adjustment for repo and derivatives :

The Committee proposes to determine the maturity of repo and OTC derivatives subject to netting agreements by using the notional weighted average maturity of the transactions (paragraphs 290 and 293 of CP3).

The Associations have studied the dependence of variations in OTC derivatives prices on maturity as part of their on-going work on counterparty risk, and found that dependence exists but is small. Maturity theoretically impacts on the value of OTC derivatives by influencing discount spreads. However, research has shown that a change in the credit quality of one of the parties in the contract has a negligible impact on the swap rate. The relative insensitivity of swap rates to

credit ratings can be attributed to the nature of the swap, which can be alternatively an asset or a liability to either party. Systematic, market-wide spread changes have a small impact on swap prices because they affect both sides of the swap : both counterparties re-mark credit risk at new spreads and the net effect on the swap price is small. In this sense, maturity adjustments for derivatives should be an order of magnitude lower than maturity adjustments for loans. Repos present similar features and should be treated accordingly. The Federal Reserve Board's analysis of ISDA's original proposal on counterparty risk²⁰ wholly supports this view. Quoting from the FRB paper: "It would be incorrect to apply the Basel II maturity adjustment for corporate loans to counterparty credit exposures on OTC derivatives. Unlike loans, the value of OTC derivatives is typically insensitive to credit downgrades short of default" (page 10).

In the light of the above, the Associations would recommend postulating a standard maturity of one year for OTC derivatives trades, and 6 months for repo transactions (as per the proposed average Foundation IRB maturity defined at paragraph 288). Short dated trades should benefit from the maturity adjustment below one year discussed at 3.a. above.

c. Treatment of maturity mismatches :

The Associations continue to question why, for firms using maturity adjustments, the Committee employs the standardised linear scaling factor approach to charge capital on maturity mismatches. Forward credit risk arising from a maturity mismatch should be capitalised using the IRB maturity adjustment.

It should also be clarified in paragraph 174 that the maturity mismatch adjustment factor Pa cumulates with the maturity of the underlying, whether standardised (2.5 years) or calculated using the effective maturity formula.

4. Pillar 2

The consistency and quality of the new capital regime will depend crucially on supervisory practice. The industry believes that convergence and transparency of supervisory practice are essential to the success of the new regime.

a. Convergence of supervisory practice

The Associations support the overall purpose of Pillar 2 and recognise the importance of supervisory review.

Lead supervision :

ISDA has commented, in a letter to Nicholas Le Pan²¹, Chairman of the Accord Implementation Group (AIG), on the need to avoid duplication of supervisory reviews for firms active in more than one jurisdiction. We in particular advocated the designation of lead supervisors, in keeping with a practice already established in the EU. The Associations would strongly support the recognition of lead supervision in the Accord.

²⁰ As before, Regulatory capital for counterparty credit risk : A response to ISDA's proposal, Michael S. Gibson.

²¹ Letter to Nicholas Le Pan, dated 24 May 2002, www.isda.org

The lead supervisor should in principle be the home country regulator. The home country will in most cases be the main place of business, determined based on the share of total assets accounted for in each jurisdiction where the group is active. Where this is not the case, an agreement should be sought among the relevant regulators with a view to selecting the lead, taking into account, as appropriate, the views of the firm concerned, but also having regard to the location of “mind and management” of the group.

The lead supervisor should have responsibility for the global supervision of a consolidated group. In some instances, and particularly where resource constraints apply, it may be necessary to delegate parts of the supervisory process to host country regulators. This accentuates the need for adopting a consistent approach to Pillar 2 supervision across the G-10. Importantly, duplication of model (internal ratings, loss given default, operational risk losses or otherwise) reviews should be avoided, notably where modelling is a centralised function and where the pools of data used to calibrate the models span several jurisdictions. The Associations recognise that certain definitions in the proposed Pillar 1 framework are country sensitive, for example the definition of default. It would therefore make sense that regulatory validation of such factors should rely upon expert input from the host country regulator.

We furthermore believe that the recognition of lead supervision would create a strong incentive for regulators to (i) ensure that a common answer is brought to similar implementation issues by the various G10 participants; and (ii) harmonise their approach to supervision, including by encouraging joint training of their staff and exchanges of staff.

Purpose of supervision :

Of paramount importance is the need to achieve a common understanding of the purpose of Pillar 2. It seems to us that Pillar 2 is to be used for three distinct purposes :

- (i) Assess firms’ eligibility under the intermediate and/or advanced credit, market and operational risk approaches;
- (ii) Assess the adequacy of Pillar 1 assumptions with respect to risks not directly capitalised under Pillar 1. Additional capital may be required as a result of this part of the review.
- (iii) Evaluate the adequacy of firms’ internal capital assessment.

We would like to offer the following comments in respect of each of the points above :

- (i) Eligibility under intermediate/advanced approaches : a number of issues arise in relation to this part of the supervisory review, for instance the determination of materiality thresholds for applying partial use, the definition of IRB validation criteria, etc. It is essential that regulators identify these issues and discuss them within the relevant Basel Working Groups (the AIG and the RMG) with a view to adopting common definitions. Otherwise, there would be a significant risk of similar firms being subject to different hurdles by their respective supervisors. ISDA stands ready to assist the Basel Working Groups in this process. We have recently released an Internal Ratings Validation Survey, launched jointly with the Risk Management Association and the British Bankers’ Association, with a view to informing the AIG on the diversity of approaches employed by member firms.
- (ii) Evaluation of risks not directly capitalised under Pillar 1 : a distinction must be drawn between those risks approximated and those utterly disregarded under Pillar 1.

For instance, correlation risk is not ignored under Pillar 1, but approximated by postulating a set of “average” constant correlation factors under the IRB function. Similarly, legal risk arising from the use of credit risk mitigation techniques is not excluded from scope: firms are required to verify the legal soundness of transactional documentation before recognising risk mitigation. Legal risk is also covered explicitly in the operational risk charge.

By contrast, some forms of risk are excluded from the proposed framework ; interest rate risk in the banking book and concentration risk are prime examples.

ISDA believes that the emphasis of supervisory review should depend on the type of risk under review :

-for risks already capitalised under Pillar 1, supervisors should simply validate that the conditions required for application of the relevant Pillar 1 treatment are met. For instance, where a firm uses credit derivatives, the supervisor should verify that the operational requirements for recognition of mitigation are complied with. Lack of compliance should result in a warning being sent to the firm that capital relief might be confiscated unless corrective measures are adopted within a reasonable time frame.

-for concentration risk and interest rate risk in the banking book, there is a case for considering the application of additional capital requirements where the risk concerned is material. In assessing the rationale for applying supplementary charges, due account should be taken of requirements already imposed under national or international regulations distinct from the Accord. Large exposures, for instance, give rise to additional capital requirements under the Large Exposures Directive in the EU. Pillar 2 charges for concentration risk should not duplicate existing requirements. A review of such existing rules should be performed, at the international level, to ensure that the most appropriate and consistent approach is adopted to treating the risk under consideration.

The Committee also requires that strategic risk be assessed and actively managed. The implication is that firms should endeavour to measure this risk more accurately and capitalise it. The Associations question this line of thinking. Strategic choices made by management entail costs and may result in unexpected losses [hence impacting on Pillar 1 capital], but are primarily expected to produce income and profits. Because the proposed regulatory framework mostly ignores earnings, it is impossible for it to incorporate strategic risk ex ante in any meaningful way. It would be highly inappropriate for regulators to interfere in the elaboration of banks’ strategies by imposing Pillar 2 capital requirements for strategic risk.

- (iii) Evaluation of the adequacy of firms’ internal capital assessment : it is essential that supervisors, prior to evaluating firms’ internal capital assessments, understand the differences between the firms’ internal modelling and the regulatory capital model.

The magnitude of these differences depends on the type of risk under consideration : for market and operational risk, where significant reliance can be placed on the firms’ own modelling to derive regulatory capital, the discrepancy between internal and regulatory capital can be minimal and will overwhelmingly depend on the horizon and confidence interval retained by the firm. For credit risk, a vast number of

parameters have been standardised by the regulators, and a direct comparison between internal capital assessments and regulatory capital is much more arduous: internal capital excludes expected loss, where regulatory capital generally includes it; LGD and EAD estimates will typically differ between Foundation IRB and the firm's internal model; modelling of default correlation and maturity is standardised in the IRB function, but more refined in internal models; concentration risk is ignored in the New Accord but accounted for in internal models; some firms model changes in asset values linked to spread variations, whereas regulators ignore them, and so forth. Understanding the detail of calibration discrepancies between firms' own credit risk models and the New Accord is essential if supervisors are to reconcile regulatory and internal capital measures.

It seems unclear to the Associations what conclusions might be drawn from the comparison above in terms of regulatory capital adequacy. A firm might, for instance, use a lower default correlation assumption than is implied in the IRB function; this obviously should not imply that the internal assumption needs scaling upwards. Conversely, some firms will aim for a more stringent loss percentile than the Capital Accord's, and may hold internal capital in excess of their Pillar 1 regulatory capital. This should not result in additional capitalisation under Pillar 2. While the Associations hope that the supervisors' desire to achieve a better understanding of economic capital modelling indicates their willingness to move towards recognising these models in the future, we would be concerned if it constituted an attempt at systematically bumping up Pillar 1 capital. The Committee's intentions would merit clarification in the New Capital Accord.

Capital allocation across business lines and asset types is another area where marked differences are likely to arise between internal models and the regulatory model. Such discrepancies exist under the current Accord, and will continue to exist, although to a lesser extent, under the New Accord. Only by placing more reliance on firms' own modelling of portfolio credit risk (and notably, excluding EL from the scope of regulatory capital), can the Basel Committee bring internal and regulatory capital estimates into closer agreement. Capital allocation is likely to be heavily influenced by the contribution of each facility to the overall loss profile at the confidence interval retained by the firm. This will crucially depend on the correlation of the asset loss profile with that of the rest of the portfolio. The Associations question how the supervisors intend to assess the adequacy of correlation estimates used by firms. We strongly oppose the principle of applying additional Pillar 2 requirements to cater for misallocation of capital (para 714 of CP3), where the regulatory model itself does not demonstrably result in a sensible allocation of capital.

Finally, stress tests feature prominently in CP3, at paragraphs 396 (general stress testing regime), 397 – 399 (specific testing for mild recession) and Pillar II, paragraphs 708 (general requirement to consider unforeseen events in assessing capital adequacy) and 724 (requirement to hold capital covering the stress tests in paragraphs 396 – 399).

The Associations agree that stress testing is an important technique in a risk manager's toolkit, and forms part of a robust capital planning and management regime at any large institution.

However, we have severe reservations about the detailed prescription contained in paragraph 398. Such prescription contradicts the purpose of supervisory review to achieve a tailored understanding of the individual position and risks assumed by each institution, working in conjunction with internal risk management. The prescription in paragraph 398 does not come close to a complete specification of the stress testing regime and therefore does not ensure consistency between institutions (an objective that is not attainable in this area, even if desirable), yet it imposes an artificial framework which banks and their supervisors are likely to find a distraction from the genuine considerations needed to successfully manage capital.

We do not believe it can be appropriate for supervisors to issue guidance about the construction and execution of stress tests as suggested at paragraph 399. As noted above, the Associations believe that the fundamental purpose of Pillar II is to enable oversight tailored to each institution. We believe that supervisors will find the expectation that they issue uniform guidance not only contradicts this purpose, but is also extremely burdensome.

We are fundamentally opposed at the conceptual level to the specific stress test set out at paragraphs 397 – 399 and the expectation, expressed in paragraph 724, that banks automatically hold capital covering the results of this test.

The central notion, expressed at paragraph 399, appears to be that of a rating system that would result in no change to capital during or after a mild recession, in other words, a rating system that produced the same PD for each obligor over time regardless of the external economic circumstances. If a bank has a rating system that is not of this supposed type, it will, in the structure set up by paragraphs 397 – 399 and 724, always and at all times be expected to hold more capital than the IRB minimum requirements.

The Associations find the rating system implicitly described here wholly unacceptable. It implies that a rating assigned to an obligor upon origination should not change as economic conditions change. This in turn implies that (i) either the quality of each obligor's rating will gradually deteriorate over time as it becomes stale and eventually completely useless; (ii) or the bank is expected to be able to foresee all the possible economic circumstances that will arise over the life of the exposure, and assign the initial rating accordingly. Clearly, such a system is not sensible at a basic level. All estimates associated with risk management activity, including ratings, are based only on information or judgment available up to the current time, and are therefore subject to update and change including potential deterioration as new information becomes available, quite regardless of their structure or design. Therefore, all risk sensitive rating systems will be adversely affected by unexpected periods of zero growth or recessionary downturn.

The Associations believe that a key intention in developing this provision is to mitigate any potential procyclical variation of capital by introducing a buffer of capital that would be available to cover additional requirements arising during or after an economic stress. However, the stress test set out at paragraph 397 is in practice merely an additional minimum capital requirement.

The Associations believe that adequate protection against procyclicality can only be achieved with a flexible and proportionate approach to capital planning by each individual bank including, where appropriate and available, maintenance of a modest buffer of capital. The stress test at paragraph 397 will not indicate the size of any such buffer and, unless it is deliberately manipulated, will simply indicate a requirement to hold a buffer at all times. An essential ingredient of capital planning is the ability to materially reduce the buffer when needed, but, as

the stress test will never be able to provide a justification for such reduction, it will in any case fall to supervisory judgement to ignore the results of the stress test when it is in the best interests of the bank or the banking system to do so. This process would clearly be simplified with no adverse effect by eliminating the stress test at paragraph 397 and associated capital requirement at paragraph 724.

b. Supervisory disclosure

The Associations strongly support the Committee's proposal that supervisors should disclose national standards. We however would also find useful the disclosure of aggregate statistics on the impact of national implementation. It would notably be helpful to know what proportion of firms have achieved the more sophisticated approaches (Credit Risk IRB, Model recognition for Market Risk and AMA for operational risk), the average capital required under the supervisory review process and recognised ECAs in each jurisdiction.

This information could inform debate on any material divergences in implementation, to the extent that they may threaten the competitiveness of some financial institutions or require that policy be amended to foster greater convergence in supervisory practice.

APPENDIX 2

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3 November 2003,

The International Swaps and Derivatives Association, the London Investment Banking Association and the International Association of Credit Portfolio Managers (together, the Associations) welcome the opportunity to comment on the Federal Reserve Board (FRB) White Paper on the Treatment of Double Default and Double Recovery Effects for Hedged Exposures under Pillar I of the New Basel Capital Accord (in the following, the White Paper).

The lack of account taken of double default and double recovery effects in the proposed Basel II solvency standards is a crucial concern for the Associations, and we applaud the initiative taken by the Federal Reserve Board in this regard.

As already emphasized in the Associations' responses to the Basel Committee consultation papers on the New Capital Accord, continuing to apply the so-called substitution approach is fundamentally flawed: the capital charges produced by this approach are extremely onerous and bear no resemblance to the amount of economic capital internally allocated by firms against the exposures concerned. Such is the

discrepancy that firms may be discouraged from purchasing much needed credit risk protection, resulting in unsuitable risk management decisions being made. At a macro economic level, the substitution approach acts as a constraint on the development of liquidity in the credit derivatives market.

The Associations however remain convinced that the regulators see benefit in the wider availability of liquid credit risk mitigation instruments, such as credit defaults swaps, and do not wish to prevent their use by imposing inappropriate regulatory capital requirements. The White Paper is the absolute proof of the interest and appeal that such instruments present for a major regulator.

The Associations understand that the White Paper is produced in the context of the implementation of the New Capital Accord in the US. We would however strongly recommend its review by the Basel Committee, as (i) it is not anchored in specifically US market practice, and includes recommendations in our opinion valid in all jurisdictions; (ii) it would be damaging to the harmonious development of the credit derivative market if the capital treatment of these products in the US diverged from that retained in other G-10 countries.

The FRB has raised a number of concerns in the White Paper and called for industry feedback on certain issues. The Associations wish to offer input on the following topics :

- A-Scope of approach
- B-The ASRF model : principles and calibration
- C-Concentration Risk
- D-Use Test
- E-Wrong way risk
- F-Capital Arbitrage

We have undertaken a survey of market practices, appended to this letter (Appendix 1), to better inform our commentary, particularly on the calibration of the ASRF model and the use test.

A- Scope of approach

All banking activity giving rise to two name risk should in principle be treated consistently for capital purposes : credit derivatives, risk participations in standby letters of credit, confirmed letters of credit, risk participations in unfunded revolving credits, rediscounted bankers' acceptances or parental guarantees are examples of instances where a bank is exposed to two name risk (see Appendix 2 for detail).

The capital treatment applied to these exposures should reflect double default and double recovery effects. These may be internalised in the rating assigned to the hedge exposure, or modelled explicitly. The regulatory requirement will depend on whether internalisation in the form of a hedged asset rating is recognised. The ASRF model proposed by the FRB is an explicit model where no account is taken of the hedge in the probability of default

attributed to the underlying obligor. The Associations provide under “D-Use test” below an assessment of the prevalence of internalisation for various types of hedges.

B- The ASRF model : principles and calibration

The Associations wholly support the methodology employed to produce the proposed ASRF charges. We accept that this methodology, founded on conditional joint default probabilities, is more closely aligned with the IRB function than the approach ISDA had recommended in October 2001²².

The Associations also note that, in the central scenario retained in the White Paper (Conclusion, page 31), the amount of capital relief implied by the ASRF model is, on average, higher than that achieved under our original proposal. This, ex post, serves to demonstrate the extreme conservatism of ISDA's suggested approach.

We understand, given the magnitude of the capital savings implied, the FRB's inclination for a prudent calibration of the ASRF model. The ASRF function should be parameterised in a realistic and cautious manner, avoiding excess complexity, as well as inconsistency with bank practice.

The FRB specifically invites feedback from industry on three key parameters of the ASRF formula : ρ_{og} , the specific asset return correlation between the protection provider and the underlying issuer; ρ_g , the average asset return correlation for protection providers, and the joint loss given default between the underlying obligor and the protection provider.

1- Parameter ρ_{og} :

Of the 21 respondents to the survey, 13 employ an economic capital model where double default effects are represented in a relatively sophisticated manner. A majority of these firms set ρ_{og} equal to the base case identified in the White Paper $-(\rho_o \times \rho_g)^{0.5}$. 3 respondents, all of whom calibrate ρ_{og} more conservatively, were able to provide an indication of the values they would assign to it: for one of them, the parameter takes values ranging from mildly negative to maximum depending on the pair of obligors, with an average of 25%. Another firm uses a uniform 45% calibration. The last one sets ρ_{og} equal to base case plus 20%.

In seeking a suitable value for the parameter ρ_{og} , we believe it is more intuitive to consider the *conditional* correlation implied by an input value of ρ_{og} . This is the remaining correlation between obligor and guarantor conditional on a realised 99.9% worst case value of the ASRF systematic variable. As identified in the white paper, the conditional correlation is given by

²² ISDA letter to Oliver Page, Chairman of the Capital Group, on the regulatory capital treatment of hedged exposures and joint default risk, October 3, 2001.

$$r_{og}(\text{Conditional}) = \frac{r_{og} - r_o^{1/2} r_g^{1/2}}{(1 - r_o)^{1/2} (1 - r_g)^{1/2}}$$

This correlation can be intuitively described as the asset price correlation between obligor and guarantor due to factors connecting these entities which are not part of the general correlation between obligors implied by the single factor underlying the IRB approach. For example, in the case of two closely connected entities one could simply take :

$$r_{og}(\text{Conditional}) = 1$$

which corresponds to the rather unintuitive setting

$$r_{og} = r_o^{1/2} r_g^{1/2} + (1 - r_o)^{1/2} (1 - r_g)^{1/2}$$

(this is strictly less than one unless ρ_o and ρ_g are the same).

Determination of a suitable range for $r_{og}(\text{Conditional})$ is still judgmental, but we feel it corresponds slightly more closely than r_{og} to an intuitive picture of the situation.

In the absence of wrong way risk, we suggest a parameterisation :

$$r_{og}(\text{Conditional}) = 30\%$$

Giving the formula :

$$r_{og} = r_o^{1/2} r_g^{1/2} + 0.3(1 - r_o)^{1/2} (1 - r_g)^{1/2}$$

We note that although this looks complicated, it is the simple 30% conditional value, not the more complex unconditional correlation, that enters the ASRF model formulae and we suggest accordingly that the formulae be simply restated to refer to the conditional correlation, $r_{og}(\text{Conditional})$, rather than the unconditional value r_{og} . For reference, the unconditional correlations equivalent to this choice are as shown, for a range of values of ρ_o and ρ_g :

	0%	5%	10%	15%	20%	24%
0%	30%	29%	28%	28%	27%	26%
5%	29%	34%	35%	36%	36%	36%
10%	28%	35%	37%	38%	40%	40%
15%	28%	36%	38%	41%	42%	43%
20%	27%	36%	40%	42%	44%	45%
24%	26%	36%	40%	43%	45%	47%

The values of r_{og} indicated in the table above are generally conservative compared to those used internally by firms.

2- Parameter ρ_g :

The Associations believe that calibrating ρ_g more conservatively than is implied by the IRB function (ρ_{irb}) would be doubly inconsistent:

- (i) Firstly, with the correlation parameter employed to determine the credit risk capital charge applied to direct exposures to the guarantor. It appears wholly unjustified to use the IRB correlation factor (ρ_{irb}) to derive the capital charge attributable to a loan to a counterparty, whilst applying a higher correlation factor (ρ_g) in determining the charge applied to an exposure guaranteed by this same counterparty. The member firms we surveyed use the same correlation factor in both cases in their economic capital models.
- It is also worth noting that using a conservative $\rho_g (> \rho_{irb})$ parameter has the adverse effect of producing ASRF capital charges exceeding the substitution charge (calculated based on ρ_{irb}), for underlying assets of poor credit quality.
- The following table shows that for underlying obligors of a low credit quality, calibrating factors ρ_g and ρ_{og} at 50%, as proposed in the central scenario retained by the FRB in its conclusions, would produce capital charges exceeding the substitution charge.

COMPARISON BETWEEN SUBSTITUTION AND ASRF [$\rho_{HOG}=\rho_{HOG}=50\%$]

Guarantor PD	Obligor PD							
	0.03%	0.10%	0.50%	1%	2%	5%	10%	50%
0.03%	-0.54%	-0.45%	-0.21%	-0.05%	0.14%	0.43%	0.68%	1.72%
0.10%	-0.46%	-1.18%	-0.63%	-0.27%	0.16%	0.87%	1.55%	4.39%
0.50%	-0.29%	-0.76%	-2.32%	-1.45%	-0.41%	1.41%	3.39%	12.47%
1%	-0.20%	-0.54%	-1.69%	-2.45%	-1.07%	1.38%	4.22%	17.86%

Highlighting marks instances where ASRF charges exceed substitution charges

This outcome would be highly counter-intuitive and questionable.

- (ii) Secondly, with the Basel Committee’s decision to not differentiate asset return correlations by industry or region. Arguably, a guarantee sought by an Asian bank from a US bank would be less correlated with the protection buyer’s portfolio than the same guarantee purchased by a US bank. Incorporating this degree of fineness in the IRB framework is impossible, however. Only by relying on firms’ own portfolio models would the regulators be able to reflect such subtle effects.
- A number of survey respondents note that correlation estimates used in their economic capital models depend on industry sector, and are higher for financial institutions than for other corporates (typically, ranging between 20% and 40%). However, should the Committee wish to refine its approach in this area, it should also review the correlation parameters used for other types of exposures.

In view of the above, **the Associations caution against retaining a more conservative calibration for ρ_g than the relevant IRB asset return correlation. Where conservatism can be added to reflect a degree of “systematic” wrong way risk is in relation to parameter ρ_{og} , as suggested above.**

3- Joint Loss Given Default :

Respondents generally ascribe the LGD of the guarantor (ignoring recourse on the underlying obligor) or (which in practice often amounts to the same result) the minimum LGD between the obligor and the guarantor - $\min(LGO_o, LGD_g)$ - to a hedged exposure. The latter approach is technically equivalent to adopting a substitution approach to recovery rates. Only the most sophisticated firms seek to model joint recovery in a more accurate and less conservative fashion.

For conservativeness and simplicity, the Associations would recommend that joint LGD be set equal to $\min(LGD_o, LGD_g)$ for a hedged exposure. We however would emphasise the need for regulators to review internal practices closer to the New Accord's implementation date, with a view to appraising developments in the modelling of joint recovery by firms. In particular, firms treated under the Advanced IRB approach should be able to receive recognition for their joint recovery estimates.

C- Concentration risk

1- Concentration in the credit derivatives market :

We have commented on market concentration in a previous letter dated April 4th, 2003. We acknowledge that the number of protection sellers in credit derivatives markets is limited, and that a few firms are responsible for a substantial proportion of CDS trading. A report published by Fitch Ratings on March 10th, 2003²³ confirms that counterparty risk is concentrated among the top 10 global banks and broker dealers.

It is important to note that concentration is, among other causes, a corollary of the regulatory treatment of unfunded forms of credit risk protection. By virtue of the substitution rule, only protection acquired from sellers whose risk weight is lower than that of the underlying issuer results in capital relief. Under the current Basel framework, this has meant that only financial institutions (and in some jurisdictions, highly rated corporates) could sell protection. The New Accord will restrict the number of eligible sellers by subjecting them to a minimum rating requirement. This rating limitation is wholly out of line with firms' assessment of double default risk : a BBB rated protection seller can perfectly mitigate credit risk arising from an A rated exposure, provided that the underlying obligor and the seller are not strongly correlated in default. By recognising precisely this characteristic, the ASRF model has the potential to create new opportunities for protection sellers, and be conducive of greater diversification in future.

In addition, the impact of market concentration is mitigated by several factors:

²³ Global Credit Derivatives : Risk Management or Risk ?, March 2003

- (i) Credit derivatives give rise to no more concentration risk than other financial derivatives²⁴, repos, or interbank loans. Treating them more harshly than these other products is difficult to justify.
- (ii) Credit derivatives are generally documented under Master Agreements permitting the netting of exposures. The net amounts are often collateralised. These risk mitigating features, along with the high credit rating of firms active in this market, considerably reduce the magnitude of counterparty risk.
- (iii) Finally, should large exposures arise from credit derivatives positions, these would be capitalised separately by firms under the Large Exposures regimes in place in most G-10 jurisdictions.

In our view, adopting a more realistic treatment of double default risk will result in greater liquidity, and therefore encourage the entry of new participants in the credit derivatives market, leading to increased diversification.

2- Concentration risk under the New Accord :

Credit default swaps can be, and are often used to reduce credit risk concentration in banks' books. Because concentration risk is not captured under Pillar 1 of the proposed New Accord, regulators purely and simply ignore the full extent of hedging achieved via CDSs where setting a firm's minimum capital requirement. The ASRF model is insensitive to concentration risk, and hence, does not encourage firms to "disproportionately" increase their use of credit risk mitigants.

ISDA acknowledges the existence of concentration risk. We have tended to view Pillar 2 as a more appropriate vessel for addressing supervisory concerns arising from the lumpiness of portfolios, because regulators have refused to rely on firms' own assessment of granularity under Pillar 1. We hope that in future, the Committee will consider the benefits of placing more reliance on firms' internal credit portfolio modelling, which would result in concentration risk impacting minimum capital requirements. Meanwhile, the ASRF model offers a suitable and reasonable way forward.

It is also implied in the White Paper that firms may substitute concentrated exposures to borrowers with equally concentrated exposures to protection sellers. For reasons detailed above, we view this concern as generally questionable.

D- Use test :

The Associations have sought to assess the impact of double default on the pricing of hedges, as well as on the risk management of hedged exposures.

²⁴ ISDA is currently surveying its Board member firms, which include the major dealers internationally, regarding (1) the extent of their derivatives credit exposure to other dealers and (2) how they manage the resulting risk.

1- Market prices :

Survey respondents concur in finding no relationship between the market price of single name CDSs and the degree of default correlation between the underlying obligor and the protection seller. Indeed, CDS prices show little sensitivity even to the credit quality of the seller, which respondents attribute to the high creditworthiness of dealers in the CDS market. Four firms mention collateralisation as being a cause for lack of price sensitivity. A minority of respondents note that adjustments may be made by the trading desk on an ad hoc basis depending on the specifics of the transaction.

On the contrary, the pricing of basket CDSs takes account of correlation between the seller of protection and the assets in the basket. Similarly, firms comment that in the case of financial guarantees (including risk participations and standby letters of credit), spread or fees charged would normally be reflective of double default effects.

Several firms believe that ultimately even vanilla CDS prices will reflect double default and double recovery effects. A number of factors will contribute to this outcome: (i) more market participants, representing a broader range of credit quality ; (ii) a more liquid market, where differences in pricing of the underlying risk may not obscure counterparty risk adjustments any more; (iii) better quality and more easily available information (PD, LGD and correlation); (iv) the further development of quantitative modelling approaches.

2- Risk management :

(i) Impact of double default on ratings :

A majority of survey respondents reflect the existence of CDS protection in the LGD or EAD assigned to the underlying obligor. In contrast, firms would normally alter the rating (or PD) of the exposure where a parental guarantee was provided (typically by substituting the rating/PD of the parent for that of the subsidiary if the former was higher). A majority would also reflect third party guarantees negotiated at inception in the rating/PD assigned to the underlying exposure.

Where a rating or joint PD is assigned to a hedged exposure, the Associations would advocate recognition of this rating/PD by the regulators. A parallel can be drawn here with the treatment of securitisation tranches, where the degree of correlation in the portfolio collateralising the tranches is acknowledged indirectly, via reliance on the tranches' external rating. **If ratings cannot be recognised, then an explicit model of two-name risk must be used to reflect double default/recovery effects.**

(ii) Impact of double default on credit limits :

Respondents, with one exception, do not reflect double default effects in the credit limit assigned against the underlying obligor : they view the underlying position as hedged (taking due account of basis risk) and the size of the hedge is calculated without taking account of double default.

One firm accounts for the impact of double default in setting limits on trading book positions hedged by CDSs.

(iii) *Impact of double default on banking book economic capital :*

Six firms totally ignore double default effects within their economic capital model or do not have an economic capital model.

Two respondents use a crude approach, whereby wrong way risk results in the substitution approach being used, and the absence thereof in full credit risk offset.

For the remaining 13 respondents, the economic capital treatment of a hedged exposure depends on whether the hedge impacts on the rating/PD of the obligor.

If so, double default correlation influences economic capital only through its effect on the rating/PD (only one firm systematically reflects double default in the rating of the exposure, including where it is hedged by credit derivatives), assigned to the hedged exposure.

If not, respondents adopt one of the two following approaches :

- 7 firms treat hedged exposures as offset in the banking book, taking due account of any existing basis risk (owing for instance to maturity mismatches or recovery rate discrepancies between bonds and loans). Double default risk solely impacts the evaluation of the firm's exposure to the seller of protection, as well as the economic capital assigned against this exposure.

- The other firms assign capital against double default risk in the banking book.

The joint occurrence of default between obligors in the portfolio (see B.2. above for greater detail) is usually modelled based upon equity return correlations, often approximated by using factor models (reflecting the industry and place of business of the obligors, as well as exposure size). Spread correlation is used by a few firms.

In summary, double default effects have an impact on a majority of the respondents' economic capital calculations. Substitution is not the approach of choice.

E- Wrong way risk

Of the 21 respondents, 4 do not recognise or explicitly capitalise wrong way risk. The rest have internal policies in place outlining possible causes for such risk.

Three firms specifically forbid buying protection from related counterparties; the others simply outline where a substitution approach to risk is adequate. Discriminating criteria are legal [existence of a legal connection or control between the obligors] and economic [e.g. : same place of business].

Firms increasingly consider wrong way risk as one particular state on the continuum of pairwise default correlations and ensure that the appropriate correlation/rating is fed into

the economic capital model they use, or that excess risk is mitigated (e.g. through collateralisation).

F- Capital arbitrage

Under the New Accord, we understand that regulators will only recognise banking book hedges booked in the trading book if the resulting trading book positions are themselves hedged by a third party (paragraph 664 of CP3).

In this context, we would question the grounds upon which the White Paper implies that arbitrage would occur in the trading book. It should be possible for a firm to hedge a banking book exposure in accordance with paragraph 664 mentioned above, whilst actively trading credit risk on the same name in the trading book. Traded credit risk arises over a much shorter period of time, and includes a much larger spread risk component, than banking book credit risk. For this reason, ISDA views the differential treatment of credit risk in both books as justified. Ideally of course, it should be possible to treat credit risk along a continuum, ensuring that the same model was used across the banking/trading book boundary, and varying the key parameters (time horizon, migration risk, pure spread volatility risk). This would however require that valuation principles in the banking book change to reflect fair valuing, which we do not think is achievable in the short term.

APPENDIX ONE

Fed White Paper on Double Default and Double Recovery

Questionnaire to ISDA-LIBA-IACPM member firms

The Federal Reserve Board (FRB) identifies a number of issues in a recent research paper on the Treatment of Double Default and Double Recovery Effects for Hedged Exposures [June 2003]. One specific concern, which the following questionnaire is intended to address, is whether firms reflect double default and double recovery effects in the risk management and pricing methodologies applied to credit default swaps. The FRB also queries the recognition by firms of wrong way risk (arising where risks to the reference obligor are highly correlated with those to the protection buyer).

Regulators as a general rule seek to avoid anticipating on market practice, and would hesitate to reform the capital treatment of hedged exposures if it appeared that firms did not internally take account of double default/recovery effects and wrong way risk.

The following questionnaire is intended to allow ISDA to form a view on firms' practice. Responses will be kept in the strictest confidentiality.

We would be grateful if respondents could provide as much detail as possible in their answers to the following questions.

A- PRICING OF CREDIT DEFAULT SWAPS :

- (i) Do double default effects impact on the pricing of credit default swaps? Please explain how.
- (ii) Do double recovery effects impact on the pricing of credit default swaps? Please explain how.

Respondents should provide a brief description of their CDS pricing model.

B-RISK MANAGEMENT OF CREDIT DEFAULT SWAPS :

How do double default and double recovery effects impact on (i) the credit rating assigned to a hedged exposure ? (ii) the credit limits imposed on the protection provider ? the underlying issuer ? (iii) the economic capital allocated against the hedged exposure ?

(i) Credit rating :

Please specify which component of the rating (probability of default, loss given default) is influenced by which effect (double default, double recovery), as well as which measure of risk the rating itself is based upon [e.g., for facility ratings : expected loss or economic capital]. Also detail how each of the components of the rating would be modified by the existence of a CDS hedge.

(ii) Limits and economic capital :

Please indicate if double default and recovery effects impact on credit limits/economic capital in a manner distinct from their influence on credit ratings. If so, please provide detail.

In particular, does your firm use an asset return correlation parameter for the guarantor/protection provider [factor ρ_g in the Fed research paper], which is distinct from that assigned to a direct exposure [e.g. loan] to the guarantor ?

In your economic capital model, are financial institutions' asset returns more correlated with your portfolio than the average corporate's ?

Does your firm assess the degree of specific asset return correlation between the guarantor/protection provider and the underlying asset issuer [factor ρ_{og} in the Fed paper] ? Do you find that your estimate for ρ_{og} is distinct from the base case identified in the Fed paper [$(\rho_o \times \rho_g)^{0.5}$] ? If yes, is it substantially higher ? What would be the worst value used by your firm for ρ_{og} ? When would it apply

(iii) Wrong way exposures :

Does your firm differentiate between wrong way exposures (in the context of credit derivatives, hedged exposures where the value of the exposure is positively correlated with the likelihood of default of the protection provider; e.g. instances where the protection provider is legally connected with the underlying issuer) and other exposures ? How is the distinction operated ? What are the distinguishing criteria used ? Are they codified ?

APPENDIX TWO

To: Norah Barger
Federal Reserve Bank of New York

From: Philip Chamberlain, Portfolio Management Division, The Bank of New York

Subject: Scope of Guarantees Relevant to Basel II

Date: September 26, 2003

In discussion of the Fed's double-default paper with Emmanuelle Sebtou of ISDA some time ago, I mentioned that the scope of double-default in bank portfolios (a.k.a. two-name paper) is far broader than the credit derivative book. She asked me to specify some corners of the traditional book where third-party guarantees would likely be subject to the same analysis as a credit default swap or similar instrument.

Four instances came quickly to mind. In each class of transactions, the pricing of the transaction necessarily reflects double default risk analysis, as you will see. It may be that an examination of one or more of them might address the concern expressed on page 31 of the double default paper, that "the staff has been unable to quantify pecuniary effects from double default and double recovery effects."

1. Risk participations in standby letters of credit. A "fronting" bank opens a large standby letter of credit in behalf of a bank group. Generally one bank does this, so that commercial paper or bond investors who rely on the letter of credit will see a single, easily recognized name in the market. The bank then sells risk participations to all the other banks in the bank group; the other banks fully accept their pro rate share of the credit risk in the letter of credit, but of course fund nothing at the outset. In the case of a draw on the letter of credit, the fronting bank calls on all the participants to fund their portions to reimburse the fronting bank.

The fronting bank is responsible for funding the letter of credit whether or not the participants send in their reimbursement. Therefore, the fronting bank has two-name paper with respect to all the participated portion of the L/C, which could easily be 90% of the entire credit. If the ultimate credit and the participating bank should both default (one on the reimbursement agreement, the other on the participation agreement) the fronting bank faces a credit loss.

There is considerable volume in this structure, some of it at typical term loan maturities, with most of the highly rated international banks taking part as fronting banks in behalf of prominent customers.

The pecuniary effect would be discerned here between the "fronting fee" charged in these transactions and the credit spread for similar unsecured extension of credit to the participating bank.

2. **Confirmed letters of credit.** In this credit classic, a bank well known to the beneficiary of a letter of credit confirms a letter of credit issued by (generally) a bank in another country well known to the party opening the letter of credit. The confirming bank (we are a confirming bank in a number of instances) accepts credit exposure to the ultimate credit and to the original letter of credit bank. To suffer a loss, both the ultimate credit and the letter of credit bank must default on their obligations, which are absolute under law. (The only other risk is of faulty documentation, which is an issue properly reserved for operational risk.)

The pecuniary effect would be discerned here between the “confirmation fee” charged to confirm these letters of credit and the credit spread for similar unsecured extension of credit to the bank that opened the letter of credit.

3. **Risk participations in unfunded revolving credits.** We regularly sell to other banks risk participations in unfunded revolving credit agreements with customers. The risk participant bank is not a member of the credit agreement bank group, but takes some of the risk and reward by participating in our commitment to the credit agreement. We as participating bank must fund the revolving credit if called upon, and then claim reimbursement from the participant under the participation agreement. We as participating bank have double-default exposure to all the participated risk. If the participant bank and the underlying credit both default, the participating bank has a credit loss, otherwise not.

The pecuniary effect would be discerned here between the primary lender’s retention of a portion or either fees or loan spread and the credit spread for similar unsecured extension of credit to the bank participant. The transaction’s terms may in this case be affected by the terms of other business transacted between the same two banks.

4. **Rediscounted bankers’ acceptances.** The original holder of a note essentially sells the note at a discount to the note maker’s bank. The bank then rediscounts the note to money market investors, who have both the bank and the original note maker as obligated to pay. (This technique is centuries old, I believe, and does not by tradition provide full documentation to the money market investor of the character of the underlying note. The two-name paper characteristic is undeniable, however, and the rates available to such paper are worth examining.)

The pecuniary effect would be discerned here between the average credit spread on the rediscounted BA and the credit spread for comparable maturity negotiable certificates of deposit issued by the same bank.

A final observation regarding the double default paper’s concern about measuring direct pecuniary effects to justify double default’s importance. We need to remind ourselves that the effect of double default on pricing, compared with pricing for the stronger of the two borrowers, is **always likely to be real but small**. It makes an already narrow credit

spread a trifle narrower. That means that double default has only a mild effect on expected loss.

By contrast, double default should have a large impact on capital, because it sharply reduces the likelihood of the outlier default event. Double-default is a refinement to expected loss; it is a major contributor to an economic capital calculation.

APPENDIX 3

Proposed discount factor for restructuring risk ISDA- TBMA

The purpose of the following note is to provide the Credit Risk Mitigation Sub-group with additional detail on how the 35% restructuring discount factor recommended in the joint ISDA/TBMA response to CP3²⁵ was calculated.

1- Definition of the restructuring discount factor :

The restructuring discount factor measures the percentage of the IRB capital charge attributable solely to restructuring risk, as opposed to other forms of default risk (e.g. : failure to pay, bankruptcy). A bank can be exposed to pure restructuring risk on exposures hedged by credit default swaps excluding restructuring triggers, and where the bank exerts no control over the occurrence of a restructuring event. Commonly used syndicated lending documentation provides lenders with a right to veto distressed restructurings, hence enabling their control over restructuring events. We acknowledge that, in some instances, firms may not avail themselves of their ability to veto. This would be a business decision made by the firm around the time of the restructuring and may lead to a restructuring loss being borne. However, regulatory capital should not be based on potential future business decisions, but on the existence of an option to avoid restructuring losses.

The discount factor is a function of (i) the probability of an exposure being restructured (denoted Pr in the following) and (ii) the severity of loss in restructuring (Sr).

In the context of the Foundation IRB approach, ISDA has sought to derive an average discount factor, applicable to all exposures.

Banks treated under the Advanced IRB approach would be capable of producing internal estimates of Pr and Sr and would therefore not need to use the average discount factor.

2- Calculation under the Foundation IRB approach:

The average discount factor was derived assuming that :

$Pr = 20\% \times Pd$, where Pd is the probability of default. Regulatory default events are identified in paragraphs 414 and 415 of CP3, and include distressed restructurings.

$Sr = 40\%$

The percentages above were derived from statistics assembled by member firms and rating agencies on the frequency and severity of restructuring events observed in the population of credit exposures currently hedged by credit derivatives. These are comprised mostly of corporate exposures.

²⁵ ISDA-TBMA comment letter on CP3, 31 July 2003, available on www.isda.org

Certain facilities, such as sovereign exposures, display a higher than average *Pr*. Because of the preponderance of restructuring risk over other forms of default risk in these facilities, protection buyers normally require that restructuring triggers be included in the credit default swaps they enter into. Pure restructuring risk is therefore rarely found. In the light of the above, where the reference obligor is a sovereign, we would recommend that the Committee only provide capital relief where protection bought covers restructuring losses.

In order to derive the discount factor, we substituted *Pr* and *Sr* for the probability of default and loss given default factors in the IRB function provided by the Basel Committee at paragraph 241 of CP3 : Restructuring Risk Weights were derived and contrasted with the Foundation IRB risk weights for large corporates:

Probability of default (%) A	Full IRB Risk Weight LGD=45% B	Probability of restructuring (%) =20% x A	Restructuring Risk Weight LGD=40% C	Discount factor =C/B
0.03	14.75%	0.006	5.31%	35.97%
0.05	20.03%	0.01	6.95%	34.70%
0.1	30.19%	0.02	10.33%	34.22%
0.2	44.83%	0.04	15.58%	34.76%
0.4	64.59%	0.08	23.53%	36.43%
0.5	72.00%	0.1	26.84%	37.27%
0.7	83.95%	0.14	32.60%	38.84%
1	97.44%	0.2	39.85%	40.90%
2	125.77%	0.4	57.42%	45.65%
3	145.21%	0.6	69.67%	47.97%
5	178.27%	1	86.62%	48.59%
10	250.22%	2	111.80%	44.68%
15	307.24%	3	129.08%	42.01%
20	352.49%	4	144.17%	40.90%

Note : the 0.03% floor was disapplied in the calculation of probabilities of restructuring

The discount factor represents the share of the total IRB credit risk charge owing purely to restructuring risk.

3- Application :

We provide below an illustrative calculation of the credit risk charge applied to a protection buyer remaining exposed to residual restructuring risk on the reference obligor. We assume that protection bought matches the maturity of the underlying asset.

The credit risk charge has two components : a residual restructuring risk charge (A) and a charge on the hedged component of the underlying asset (B). The latter is calculated according to the so-called substitution approach.

(A)Residual restructuring risk charge :

Reference asset's probability of default = 0.7%

Restructuring charge = 32.6% x 8% = 2.61% (highlighted in yellow in the table above)

(B) Charge applied on the hedged portion of the exposure :

Protection seller's probability of default = 0.2%. Under the substitution approach, in order for credit protection to be recognised, the protection seller's probability of default must be smaller than the reference obligor's probability of default excluding restructuring. This condition is verified in our example, since $0.2\% < 0.7\% \times 80\%$

Substitution charge = $44.83\% \times 8\% = 3.59\%$ (highlighted in green in the table)

Total charge applied to hedged asset = $2.61\% + 3.59\% = 6.2\%$, a small reduction on the 6.71% ($=83.95\% \times 8\%$) charge applicable to the unprotected exposure.

Because of the extreme conservativeness of the substitution approach, there will be instances where the sum of charges (A) and (B) above exceeds the charge applicable on the unprotected exposure. Paragraph 83 of CP3 implies de-recognition of protection in these cases.

Going forward :

The example calculation provided above highlights a major flaw in the Committee's approach to credit risk mitigation : the substitution approach not only results in abnormally high capital charges, but also considerably reduces the universe of acceptable protection sellers, particularly where only partial default risk is being hedged. This contributes to further concentration of dealing in the credit default swaps market.

Adopting a more risk sensitive and realistic approach to measuring double default risk is therefore highly desirable, not only because it will produce fairer capital requirements, but also because it would allow new entrants in the credit derivatives market, and foster greater liquidity.

The Associations strongly hope that the methodology presented in the Fed White Paper on double default and double recovery effects²⁶ can be considered by the Committee as an alternative to the substitution approach before the Accord is finalised.

²⁶ *Treatment of Double-Default and Double-Recovery Effects for Hedged Exposures under Pillar 1 of the Proposed New Basel Capital Accord, June 2003*

APPENDIX 4

ISDA'S REVIEW OF THE CREDIT DEFAULT SWAP ADD-ONS PROPOSED BY THE BASEL COMMITTEE

When ISDA suggested a new approach for measuring future exposure on OTC derivatives contracts in 2001²⁷, our proposals were focused on derivative contracts referencing interest rates, FX, equity indices and commodity prices. The circumstances under which our proposed Expected Positive Exposure (EPE) based methodology would be appropriate were as follows:

- Counterparty exposure should be uncorrelated with counterparty credit quality;
- Counterparties' market risk positions should be independent of one another on average, in a suitably defined sense.

Credit derivatives were voluntarily excluded from the scope of our proposal. They do not satisfy the first condition above: for a counterparty selling credit protection on an unsecured basis, the value of the portfolio and the credit quality of the counterparty may be adversely correlated. In this case it would be incorrect to use an unmodified expected exposure calculation to assess the capital required against counterparty risk.

The ISDA Counterparty Risk Working Group has since discussed how standardised add-ons may be derived for credit default swaps in the trading book and would like to outline in the following letter a simple modification to the EPE methodology suitable for producing these add-ons. For clarity we wish to emphasize that, despite focusing on standardised add-ons in this letter, we continue to advocate the regulatory recognition of internal market risk models used by banks for the purpose of measuring counterparty exposure.

We focus in the following solely on the treatment of protection buyers.

1- Credit default swap add-ons for uncollateralised credit default swaps

To take account of correlation between the protection seller and the underlying in the case of credit protection, the working group proposes to adopt add-ons reflective of the expected positive exposure on the underlying asset conditional on default by the protection seller. The methodology used to derive these add-ons is not only reflective of correlation, it is also consistent with modelling practices used in the field of derivatives risk management. The add-ons reflect the weighted sum of positive exposures across two possible events:

- joint default by the two obligors (protection seller and underlying asset issuer);
- default by the protection seller without default by the underlying asset issuer.

The joint default probability is computed using an asset correlation of 24%, set at the maximum of the range of [12%;24%] adopted by the Basel Committee for corporates in the IRB function.

A simplified one-period average exposure estimation model is provided in Annex I.

Add-ons obtained using this methodology feature in the table below, for a protection seller rated BBB and a time horizon of one year:

²⁷ Annex I to ISDA's response to CP2

ONE-YEAR AVERAGE EXPOSURE

		Maturity			
		1 yr	2 yrs	3 yrs	5yrs
Underlying Rating	AA	0.9%	1.0%	1.1%	1.3%
	A	2.1%	2.4%	2.6%	3.1%
	BBB	3.6%	4.2%	4.5%	5.3%
	BB	7.9%	7.9%	8.1%	8.2%
	B	11.5%	11.6%	11.7%	11.7%

In order to verify the conservativeness of these add-ons, the group compared them with add-ons reflecting worst case spread moves observed for assets spanning a range of ratings and maturities (see Annex II for details of the methodology followed). The add-ons proposed in the table above are more conservative than 95th percentile worst case based add-ons.

The main difference between the add-ons presented in the table above and those derived using worst case spreads lies in their reduced dependence upon maturity. This relative insensitivity to maturity reflects the predominance of the joint default scenario in deriving the add-ons : loss conditional on joint default is expressed as a percentage of notional and not tied to duration.

As can be seen, the proposed add-ons are not fundamentally different from those suggested by the Basel Committee. For below investment grade underlyings, a 10% add-on is reasonable. For above investment grade underlyings however, applying a 5% add-on is onerous. ISDA would recommend that the Committee consider employing an average 3% add-on instead.

2- Collateralised credit default swaps

For collateralised credit default swaps, the length of counterparty risk exposure is limited to the collateral liquidation period, which typically does not exceed 10 days.

Where collateral is provided in cash form and currency matched, exposure can only arise from a movement in the value of the underlying credit spread. ISDA suggests scaling down the add-ons above from one year to 10 days, as per the following table :

BBB counterparty, collateralization with 10 day cure period

		ONE-YEAR AVERAGE EXPOSURE			
		Maturity			
		1 yr	2 yrs	3 yrs	5yrs
Underlying Rating	AA	0.2%	0.2%	0.2%	0.2%
	A	0.4%	0.4%	0.4%	0.5%
	BBB	0.7%	0.7%	0.8%	0.8%
	BB	1.4%	1.4%	1.4%	1.4%
	B	2.1%	2.1%	2.1%	2.1%

For simplicity and consistency with our recommendation above, it would be possible to apply only two add-ons, one for investment grade underlyings, which could be set at 0.4%, and one for sub-investment grade underlyings, to be set at 2%.

Where collateral is provided in a form distinct from cash, we accept that haircuts apply on the collateral value, as per the QIS3 Technical Guidance. We hope however, that as and when the Models Task Force reconsiders the setting of OTC derivatives add-ons, it will be possible to review the approach taken to charging regulatory capital on collateralised derivatives.

3- Netting

Our original proposal for the capital treatment of OTC derivatives included a discussion of netting. In essence we proposed that where close out netting is applicable to the counterparty, then add-ons should be applied to the absolute amounts of net risk positions arising from the portfolio. This treatment was proposed in order to replace the outdated aggregation rules.

For credit risk, we propose to recognise the asymmetry between long and short positions by a more conservative netting arrangement, as follows:

- The credit spread add-on should be calculated as the sum of the add-ons applicable to protection bought;
- Netting should be available between credit derivatives and other derivatives entered into with the same counterparty, as appropriate under the legal documentation used. The netting formulae currently available under the Accord should apply.

This treatment is prudent, and is consistent with the proposed add-ons above. Note also that, because effectively add-ons are calculated at the transaction level and simply added together, it will be easy in this framework to include differentiated add-on levels according to the broad credit quality of the reference entity.

We hope that the Models Task Force will find the above useful, and will include credit default swaps within the scope of its overall review of counterparty risk at a later stage.

ANNEX I: Methodology

We need the following definitions

T	Time horizon of interest
p_c	Counterparty default probability over time horizon of interest
p_r	Reference name default probability over time horizon of interest
r	Asset correlation between counterparty and reference name
s	Credit spread return volatility

We compute :

$$M = \frac{N_{BV}(N^{-1}(p_c), N^{-1}(p_r), \mathbf{r}) - p_c p_r}{1 + N_{BV}(N^{-1}(p_c), N^{-1}(p_r), \mathbf{r}) - p_c - p_r}$$

where $N_{BV}(x, y, \mathbf{r})$ represents the cumulative bivariate normal density and N is the cumulative normal density. M is the shared component of the default probability – the joint default probability corrected for “coincidental” joint default. Decompose the individual default probabilities as:

$$p_c = p'_c + M \quad \text{and} \quad p_r = p'_r + M$$

Conditional exposure to the CDS is now computed by considering two scenarios;

- joint default with weight $w_j = M / p_c$;
- idiosyncratic default with weight $w_i = p'_c / p_c = 1 - w_j$.

In the case of joint default our exposure is

$$X_j = N(1 - R_r) / 2$$

Where N is the CDS notional and R_r is the reference bond recovery. The factor of two comes from the fact that on average half of the time the counterparty defaults after the reference name in this scenario so our exposure is decreased.

In the case of idiosyncratic default we compute average exposure using essentially the price of an at the money spread option:

$$X_i \sim 0.4 N p_c^{annual} \mathbf{s} \sqrt{T}$$

Finally, the total average exposure is an appropriately weighted sum:

$$X = X_i w_i + X_j w_j$$

ANNEX II

Methodology followed to obtain add-ons based on worst case spreads :

1-Data Analysis

The data consists of daily spreads of UK Bond yields over corresponding government low-coupon yields, for various tenors. These are broken-down by S&P rating (AAA,AA,A,BBB). The data runs from 2nd January 1997 to 29th May 2002 .

We have computed 1-year changes in yield spreads for all over-lapping periods, as well as the 95th percentile spread change.

2-Conversion into Add-ons

The add-ons produced are an approximation to the changes in net present value of the credit protection, as per the methodology below :

Let us consider a T-year CDS on a T-year bond with current yield (annual) = r and assume that we set the add-on equal to the change in CDS value due to a jump in spreads. If the new yield is q, the add-on can be shown to equal : Add-on = [B₀ – B₁], where

B₀ = current price of reference asset

B₁ = price of reference asset following the jump in spread

We need to compute this value in terms of the change in yield (q-r). We will assume that the bond is trading roughly at par, B₀ ≈ 100% (so coupon ≈ r) .

$$B_0 - B_1 = 1 - r \sum_{t=1}^T (1+q)^{-t} - (1+q)^{-T}$$
$$= \left[\frac{1 - (1+q)^{-T}}{q} \right] * (q - r)$$

The term in brackets is just the value of a T-year annuity discounted at the new risky yield.

The add-on can be determined on the basis of the formula above, taking worst case spread moves as an input.

3- 95th percentile worst case add-ons

CDS Potential Future Exposure Add-ons (bps)

	AAA	AA	A	BBB
1 year	18	25	32	53
2 year	42	64	85	127
3 year	74	117	159	223
4 year	113	184	255	339
5 year	159	265	371	477
> 5 yrs	247	389	530	707

APPENDIX 5

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Ms. Norah Barger
Chair, Credit Risk Mitigation Sub-group
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8 November 2002

Dear Norah,

Thank you very much for your letter of 9 July 2002 to ISDA, LIBA and TBMA ("The Associations"), following up on our meetings in London and New York this past summer. As an initial matter, The Associations and the Risk Management Association (RMA) again applaud the Credit Risk Mitigation (CRM) Sub-group's continued willingness to engage in a dialogue with the financial community regarding the impact of the Basel Accord on collateralized transactions. The purpose of the following letter is to continue our dialogue on counterparty risk issues, in the light of the Sub-group's 9 July 2002 letter. The Associations and RMA hope that the information contained below will assist the Basel Committee in finalising its approach to portfolio VaR backtesting.

Two issues were raised in your letter, which we address in turn below.

1. Resolution of differences between The Associations and RMA

The first issue relates to differences of views between The Associations and RMA in each of their responses to the CRM Sub-group's 17 April letter regarding the technical modalities of backtesting. Reviewing the submissions prepared by both groups, we find more similarities than differences between the two sets of comments.

Before addressing the few differences in detail below, and while we agree with the need for appropriate model validation to apply to VaR-based measures of counterparty exposure, both The Associations and RMA wish to reiterate that we do not support the principle of including in the Accord a backtesting regime, whether conducted on a group of sample counterparties or (as described in Section 2 below) whether conducted on a hypothetical portfolio. The creation of a backtesting regime will cause financial institutions to incur significant costs, and (as noted by the CRM Sub-group in its 17 April letter) is not necessarily appropriate in the context of measuring counterparty risk in collateralized transactions.

The Associations furthermore agree that, should backtesting apply, the approach adopted by the Committee should be subject to flexibility based on individual institutions' business situations and subject to ongoing dialogue with their respective supervisors.

Where the submissions differ is on the following items, which RMA and The Associations have reviewed and where we would like to put forward a constructive proposal to the CRM Sub-group :

- The proposed horizon for performing the backtest was one day in the Associations' letter versus 5 days in RMA's. The Associations and RMA have agreed that applying a one day test is preferable, considering the difficulties involved in producing "clean" 5 days P/L data, i.e. P/L excluding any further change in the exposure profile occurring within the 5 day test period. We would emphasize that supervisors currently rely on one day backtests for the purpose of implementing the Market Risk Amendment.
- The only other difference between the two submissions was in the selection of the sample of counterparties to which backtesting would apply. Following further consultation, The Associations and RMA would like to suggest the following sampling process :
 - o 20 counterparties are identified on an annual basis, of which 10 are the largest counterparties in the portfolio, and the remaining 10 are randomly selected. Financial institutions should be allowed to use their own measure of counterparty size in order to determine the identity of the 10 largest counterparties. Such measures might encompass Potential Exposure, VaR, or simply the average absolute value of the current mark to market of each portfolio over a given time period.
 - o For each day, and for each of the 20 counterparties, the financial institution compares the daily change in the counterparty's exposure (cleaned P/L) with the VaR calculated as of the previous close of business. The backtesting results would be reported on a quarterly basis. The Associations had noted in their letter that testing several counterparties on the same day, or indeed the same counterparty over several consecutive days, could invalidate the binomial significance test underpinning the multiplier. The binomial test assumes independence between the events tested (exception or no exception), and would hence be too harsh if correlation existed in the sample, resulting in unjustifiably high multipliers. Having reviewed this issue further in co-operation with RMA, The Associations have come to the view that for the purpose of attaining consistency of approach in the industry, our earlier objection could be dropped, although this would create a harsher test for financial institutions.
 - o An exception occurs where the P/L exceeds VaR.
 - o Because of the increased number of tests, the multiplier table proposed in The Associations' letter would have to be amended as follows:

Number of Exceptions	Significance	Multiplier
0	91.80	No action necessary
20	71.30	No action necessary
40	45.60	No action necessary
60	24.60	No action necessary
80	10.90	No action necessary
100	4.20	1.13
120	1.40	1.17
140	0.40	1.22
160	0.10	1.25
180	0.03	1.28
200	0.01	1.33

Setting multipliers above the levels indicated in this table is hard to justify technically if the assumptions underpinning Market Risk backtesting also apply for repo backtesting, as implied in the recently issued QIS 3 Technical Guidance. We would hence question how the multipliers mentioned in paragraph 144 of the Guidance were derived and would welcome further dialogue with the CRM Sub-group on this specific point. In particular, multiplying the counterparty risk charge by a factor of two where the green light threshold has been crossed as suggested in the Guidance creates an artificial cliff effect, which may well discourage firms from building the portfolio VaR models that they might otherwise have used. Such disincentive would run counter to the objective of the Accord to encourage and allow firms to align their risk based capital requirements more closely with the actual level of risk present in their portfolios. A more gradual scale of multipliers should therefore be contemplated (as per the table above).

2. Hypothetical portfolio testing

The second issue mentioned in your 9 July letter focused on the potential for use of hypothetical portfolio testing in the framework being prepared by the Basel Committee. Hypothetical portfolio testing represents a possible alternative to backtesting based on firms' actual portfolios. We would not favour including in the revised Accord provisions that would require both actual and hypothetical backtesting, though we recognize that some national regulators may wish to review the results of hypothetical backtests in the context of assessing model performance. The choice between real time backtesting and hypothetical portfolio testing should be the responsibility of regulated firms, and reflect the structure of their repo portfolio and existing risk management framework.

We provide as an appendix to this letter a description of how such backtesting could be carried out. Generally, we believe that the backtesting of hypothetical portfolios set out in the attached appendix could be performed by financial institutions once or twice a year for such institutions to periodically revalidate their model. In practice, each firm would work with their local supervisors, taking due account of the structure of such firm's repo portfolio and the main risk parameters relevant to it, to determine a suitable methodology to follow.

The Associations and RMA hope that the CRM Sub-group will find the above helpful and stand ready to continue to assist the CRM Sub-group in any way possible. In this regard, we would request a follow up meeting or call between the CRM Sub-group, The Associations and RMA to discuss in more detail the views conveyed in this letter. We will contact you in the near future to determine whether you are available for such meeting; in the meanwhile, please feel free to contact Emmanuelle Sebtou (+44-20-7330-3571 or esebtou@isda-eur.org), Katharine Seal (+44-20-7796-3606 or Katharine.seal@liba.org.uk), Omer Oztan (+1-212-440-9474 or ooztan@bondmarkets.com), or Tracy Coleman (+1-617-664-2546 or TAColeman@StateStreet.com).

Kind regards,

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Tracy Coleman
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ANNEX

DEFINITION OF TEST PORTFOLIOS

- A **base case test portfolio** is defined and created:
 - The base case test portfolio should have features that are representative of the typical desk portfolio with regard to the distribution of counterparty features and the features of the transactions of each counterparty.
 - Counterparty features include the risk rating and industry of each counterparty.
 - Each counterparty will have a portfolio of transactions with different characteristics:
 - a) One way or two way trading
 - Some counterparties have multiple two-way transactions, such as large interbank market makers.
 - Some counterparties have large one-way positions, such as a hedge funds.
 - b) Each counterparty's portfolio of transactions will have a distribution with respect to the industry, credit risk rating and time to maturity of the securities put up as collateral (repos/reverse repos) or borrowed/lent.
- Empirical evidence should be provided that the base case portfolio corresponds to a typical portfolio.
- **Other test portfolios** should be defined with respect to the base case test portfolio. The other test portfolios should have different types and degrees of risk concentration. The risk concentrations should include:
 - Concentration of counterparty risk, by risk rating or industry.
 - Concentration of risk features of underlying transactions, such as risk rating, industry or tenor of underlying securities.
 - Correlation concentration risk between features of counterparties and features of underlying collateral, such as a risk concentration in both the industry of the counterparty and the industry of collateral.
- Empirical evidence should be provided that risk concentrations in the “other test portfolios” represent extreme concentrations of risk, equal or greater than the concentration of risk the desk might occasionally have.

DATA REQUIREMENTS

The following data are needed:

- Times series of daily market prices for all the securities used as collateral in repo transactions or securities borrowed/lent in security borrowing/lending transactions.
- Time series of daily repo rates for each security.

TEST

- For each test portfolio compare the ex-ante VAR-like measurement to the ex-post hypothetical P/L. The hypothetical P/L is the daily change in the market value of the test portfolio due only to changes in market rates.
- Keep track of the number of exceptions over the year and, depending on the number of test portfolios created, ensure that the number of exceptions is consistent with a VAR-like measurement at the specified confidence level.

APPENDIX 6

ISDA's comments on Section 2.V of CP3- Operational risk

Scope of comments

ISDA's main comments regarding the rules on operational risk focus on the Advanced Measurement Approach (AMA), which is a major focus of industry development effort.

We note, however, the following points with regards to the overall framework for operational risk.

Operational risk framework

First, the incentives to progress to the AMA are still not clear or proven, particularly if financial groups were to face the management burden of each legal entity having to qualify for the AMA. (We discuss this issue further below – see “AMA Issues”, section “2”.) Moreover, for some types of firm, there will also be a systematic *dis*-incentive to move to the Standardised Approach, given that the beta factors for some business lines are higher than the alpha factor agreed for the Basic Indicator Approach. Equally, this level of beta means that some firms will feel a greater pressure to move to the AMA than others. Fundamentally, in presuming that firms generally ought to be on the AMA, the Accord has gradually but inexorably moved away from an earlier consensus point that firms should be free to adopt the approach that provides the most cost-effective means of risk management and to move to a more advanced method only when this delivers clear risk-management benefits for the firm. We consider this nexus of structural issues to constitute a weakness in the Accord.

Also with regard to the role of the AMA, it is publicly acknowledged that, in spite of considerable joint work by industry and supervisors since the time of the first consultation in 1999, the advanced-level rules for operational risk remain much less prescriptive than those covering credit or market risks. To a significant extent, this is inevitable and, given the need to structure a framework that truly reflects the diversity of current and evolving risk management practice, welcome. The net result, however, is that, in the field of operational risk more than in any other area of the Accord, the impact of the rules will depend on issues of implementation, particularly as regards the AMA. To a significant extent, these issues will inevitably be a matter for discussion between individual firms and their supervisors, as a fuller understanding of AMA practice develops. In these circumstances, the effectiveness of the Accord will depend on a credible, explicit commitment to international co-ordination of supervisory application of the operational risk rules, combined with transparency standards regarding AMA approval. ISDA considers such a formal commitment to be a necessary integral part of the rules.

We believe it is essential more generally to provide a clear commitment to revise any elements of the operational-risk rules that may prove sub-optimal, as experience of the framework and techniques for operational risk management develop.

AMA Issues

Overall, ISDA welcomes the continued progress on important issues and believes that further dialogue will help ensure the effectiveness of the regime for operational risk. We attach our earlier letter to the RMG by way of background discussion on the issues within the AMA on which our members have focused, namely:

1. General
2. Consolidation/Allocation
3. Correlation
4. Risk Mitigation
5. Soundness Standard

1. General

ISDA fully expects further evolution of methods for managing and estimating operational risk (with the strong likelihood of more creativity on the part of firms as and when more immediate compliance deadlines linked to the introduction of the new rules have passed). ISDA believes that the Risk Management Group conference on 'Leading edge issues in measurement of operational risk' in May 2003 demonstrated not only common ground between the main categories of approach but also a significant degree of diversity as to how techniques within an individual firm's overall approach may be combined and how the relative emphasis of such techniques may legitimately vary, over time as well as from firm to firm.

The current draft rules focus on four key elements of an advanced approach to operational risk: internal data, external data, scenario analysis and environment/control factors. Firms "must" use each of these (or satisfy equivalently worded constraints). ISDA believes that this sort of formulation places too much emphasis on the means, rather than the end objective, when (i) further new techniques may yet evolve and (ii) where, as stated above, there should properly be flexibility about the ways in which firms "use" techniques, including their relative emphasis.

We stress that we do not oppose the naming of these techniques in the rules. We see potential value in all of them and believe that is quite right that firms be expected to demonstrate to their supervisors a thoroughly considered evaluation of each of them and the information they yield. We simply discount any suggestion that they can be the subject of a fixed standard.

Specifically on "business environment and internal control factors" (paragraph 636), we note that what are commonly referred to as "Key risk indicators" are not generally viewed as a purely quantitative tool, if at all, and that the rules should avoid associating them with a "risk measurement framework" [ISDA's emphasis].

More generally, ISDA believes that a key objective in implementing the AMA rules will be to avoid unwarranted volatility in individual firms' capital requirements and that the AMA must accordingly be policed in a manner consistent with this objective. Rules that may be interpreted in a rigid way could only increase the chance of such volatility.

Taking all these considerations into account, we strongly suggest that the Risk Management Group revise the language along the lines that, in order to demonstrate compliance with AMA, firms should undertake a considered evaluation of the applicability of these four elements, and any others the firm considers relevant.

2. Consolidation/Allocation

ISDA continues to advocate the principle of regulatory acceptance of firms' allocation by jurisdiction of capital amounts calculated at group level. As outlined in our letter of May 20th, ISDA believes that this will be essential if the AMA is to be practicable.

The Risk Management Group has asked for more specific suggestions as to how such allocations could be determined and ISDA believes that:

- 1) distinct solutions developed by individual firms are likely to be developed and should be eligible for consideration;
- 2) in the meantime, a feasible and, crucially, verifiable solution exists in the form of gross income.

As and when other potential means of allocating capital are developed, it should be possible for firms to have these considered by their supervisors. In the meantime, ISDA members believe that there is greater risk-management benefit in focusing resources on the fundamental issue of determining, on a group-wide basis, an appropriate aggregate capital requirement.

It should, however, be noted that using gross income as the basis of allocation would not, for example, preclude the simultaneous use of key risk indicators and management judgement in identifying relative strengths or weaknesses in control among group entities, and that these other techniques could for example be used as an overlay or complement to the use of gross income. With any mechanism[s] of allocation, the key issue in allowing their use would be that their effectiveness in apportioning risk capital was periodically reviewed by the individual firm.

ISDA recognises that there will need to be a dialogue involving host-country supervisors in the case of systemically significant institutions. Home-country lead supervision should, however, remain the norm. This point is addressed in more detail in our letter of 20th May.

3. Correlation

Regarding correlation, ISDA warmly welcomes the progress made in adapting the requirements to the realities of operational risk management. What seems inconsistent with this, however, is the reference to correlation in paragraph 635 of the draft rules, relating to scenario analysis.

As with the issue of "correlation" more generally, we continue to believe that the term "dependency" more appropriately reflects the range of issues at stake here. The underlying issues appear to be the potential for multiple events arising from a common cause or the co-incidence of multiple events from distinct causes. The application of a "variance-covariance" approach to this set of issues is unlikely to yield risk-management benefit.

We take this opportunity to stress our belief that, consistent with our points above on allocation, it is appropriate for supervisors to recognise "implicit" correlations captured in group-wide AMAs, subject to reasonable checks on the credibility of such estimations.

4. Risk Mitigation

The limited recognition of risk mitigation, both within the AMA and across the range of operational risk approaches, constitutes a shortcoming that ISDA believes will need to be rectified. ISDA fully supports the development of appropriate criteria to ensure that risk mitigation is effective, but believes that this combined with supervisory review should be sufficient to allow proper recognition of a potentially useful technique, of benefit to individual firms and to the system as a whole.

In particular, ISDA believes there is a policy advantage to be gained in keeping the door open to alternatives to insurance, which could include capital-market structures that provide funded protection to firms, thereby overcoming potential concerns about speed of payment. It questions the policy advantage in excluding such techniques.

5. Soundness Standard

It seems to us highly likely that, simply by dint of being specifically mentioned, the 99.9% confidence level will, at some stage, become a “hard” standard, at least in some jurisdictions. In an environment where various types of AMA are contemplated as potentially meeting regulatory standards, this would clearly be inappropriate.

As with the AMA overall (see “1” above), we therefore believe that it would better reflect the apparent intention with regards to the soundness standard to stress the end-objective (soundness) rather than the means (99.9%). We appreciate that the RMG has already made helpful changes in this regard and offer this suggestion as something we believe to be the logical extension of that development. Specifically, we recommend to the RMG greater reliance on the language in paragraph 622 of the draft Accord, that requires of firms a standard that is “credible and appropriate” in estimating capital for operational risk.

On a related point, while it is right that a firm should be expected to collect data on material losses it seems to ISDA more appropriate that the exact threshold be a matter for the firm to determine and, as necessary, justify.

Conclusion

In the above, ISDA has focused on those specific areas where it believes the latest draft of the Accord can be improved. Clearly, much progress has been made, particularly as compared with the first stages of the consultation, in 1999. ISDA believes that the single biggest advance has been to explicitly recognise the need for a significant degree of flexibility to be built into the rules. Our view is that much will still depend on two, inter-related factors that should be recognised explicitly in the Accord:

Implementation, as mentioned above, requiring a formal co-ordination policy among supervisors;
Revision of the Accord’s operational risk framework, based on review of its overall effectiveness within 2 years of implementation.

As mentioned in the section on consolidation/allocation, the presumption that lead supervision will generally fall to the home country will be a pragmatic measure that we believe will aid implementation.

ISDA thanks the Basel Committee for the opportunity to comment on this important aspect of the capital framework.