

**ISDA'S RESPONSE TO THE BASEL COMMITTEE ON
BANKING SUPERVISION'S CONSULTATION ON
THE NEW CAPITAL ACCORD**

May 2001

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INTRODUCTION :

ISDA has taken a keen interest in the review of the Capital Accord from 1998, when we published a report¹ highlighting the flaws in the current solvency standards for banks. We have since participated in the consultation process launched by the Basel Committee to re-shape the Accord, in an effort involving a broad cross section of our membership.

We have appreciated the opportunities given to us to comment on the proposals made by the Committee and its various Working Groups and Task Forces, as well as the continuing dialogue engaged at a technical level with a number of these Groups.

The following document outlines our views on the Second Basel Consultation Paper. Although detailed and technical in nature, it does not address the whole series of issues raised in the Consultation Paper. This partly reflects our membership's credit risk management preferences (our comments on the Standardised Approach are minimal) and the size of their trading book activities.

ISDA is involved in initiatives which we hope will facilitate the implementation of the new Basel framework and advance the current debate on credit risk portfolio modelling. These include :

- (i) Guidelines on internal ratings validation;
- (ii) Pooling of Loss Given Default data (jointly with the Risk Management Association – RMA- and the British Bankers' Association);
- (iii) Sponsoring research on credit risk portfolio modelling : a study of the correlation between default and loss rates has been commissioned from New York University (Ed Altman), jointly with member banks and RMA.

We hope that the comments contained below will assist the Committee in crafting the New Accord and would welcome further discussion with the supervisors. We would also wish to suggest that the final Committee's paper be disclosed to the industry approximately one month before its publication in order to allow for a quick review of its contents.

¹ Credit Risk and Regulatory Capital, March 1998, available from www.isda.org

EXECUTIVE SUMMARY

ISDA welcomes the new proposals published by the Basel Committee and expresses its gratitude to the various BIS Working Groups for having taken account of views expressed by the industry, and particularly the ISDA membership.

The new Consultation Paper goes a long way towards meeting essential objectives of regulation in defining an approach to setting banks' capital requirements which is risk sensitive, granular and flexible.

- (i) **Risk sensitivity** : As stressed in ISDA's response to the first Basel Committee's Consultation Document², the principal failing of the 1988 Capital Accord was its lack of sensitivity to the main risk drivers recognised by banks, particularly in the area of credit risk measurement. ISDA considers that the Basel Committee, by relying on banks' internal ratings and by disentangling the impact of the many individual risk drivers (probability of default, loss given default, exposure at default, maturity) on banks' capital, has designed a risk sensitive capital framework. Importantly, this framework is more transparent than the current Accord, as regulators disclose the key parameters of the calculation, including the target loss percentile and average asset return correlation assumption retained. Risk sensitivity is also found in the eligibility of a broader variety of collateral types, itself reflective of greater regulatory reliance on banks' risk management. ISDA particularly welcomes the recognition of banks' own collateral haircut estimates.
- (ii) **Granularity** : We emphasized the need for the Basel Committee to retain a sufficient number of probability buckets in its approach to credit risk. The Committee has exceeded our wishes, by determining banks' credit risk capital as a continuous function of the risk drivers. This will ensure that any, even small, variation in one of these factors will result in a change in the amount of regulatory capital charged against the exposure.
- (iii) **Flexibility** : Finally, it was essential for the ISDA membership that the new Accord showed flexibility, to reflect the varying degree of precision observed in banks' risk management systems. We are pleased with the Committee's proposals in this area; Pillar 1 capital is effectively defined through stages from the less sophisticated to the most sophisticated institutions, leaving banks' increasing freedom to use their own risk estimates, for both credit and operational risk. Furthermore, it is possible for banks not yet fully qualified for entry into the foundation internal ratings based (IRB) approach to avail themselves of this approach from 2004 onwards, should they commit to meeting the full requirements within an appropriately defined time frame.

ISDA, however, perceives a number of deficiencies in the current proposals, which it hopes can be corrected during and, if necessary, after the consultation period. These fall into three main categories :

- (i) **Undue conservatism** : One substantial flaw in the proposals lies in the introduction of capital floors. These are mentioned in relation to the main risk types (operational and credit) and in neither case, are suitably justified. Specifying a floor hampers flexibility, by adding significant costs onto firms, which might be sufficient to discourage evolution from one step in the regulatory spectrum to the next.
- (ii) **Arbitrariness** : The new proposals contain a number of examples of charges or approaches which are not satisfactorily substantiated. One major example is the size of the operational risk charge, arbitrarily proposed as being 20% of global banks' regulatory capital. The percentage retained does not, as implied in the Consultation Paper, reflect the pro-rata of banks' economic capital set aside against operational risk. Moreover, ISDA would point out that (i) only a few institutions perform these calculations; (ii) there is substantial variability around the

² "A New Capital Adequacy Framework, Comments on a Consultative Paper issued by the Basel Committee on Banking Supervision in June 1999", February 2000, available on www.isda.org

average; (iii) loss data available at present is insufficient to derive a meaningful industry-wide figure.

Another area of concern for ISDA is the introduction of a legal charge for credit risk mitigation instruments, in spite of the efforts made by a number of industry bodies, including ourselves, to ensure that collateral and credit derivatives documentation is enforceable and effective. ISDA is also concerned by the fact that credit default swaps receive a legal risk charge of 15%, where bank guarantees are exempt. It is not reasonable or desirable for the Basel Committee to lend a premium to the less standardised/ less liquid side of a market, in the precise instance, the market for unfunded³ credit risk protection.

Finally, we would question the calibration of the Internal Ratings Based function, which currently reflects adjustments assuming a systematic 50% under-estimation of probabilities of default, as well as lack of Tier 1 capital. We would argue that such adjustments are unnecessary, as they do not reflect practice at normally well managed institutions, and should therefore, rather than being introduced in Pillar 1, be applied under Pillar 2 of the new Basel framework.

- (iii) **Complexity** : Parts of the Basel Committee's proposals are overly complex, particularly the disclosure requirements listed under Pillar 3. We would recommend that the Committee seeks to devise simpler and more effective reporting requirements.

Our comments are structured as follows :

-Section I - Conceptual framework : Section I includes our detailed proposals in the field of counterparty risk, as well as general comments on some of the key assumptions underpinning the new capital adequacy framework (definition of regulatory capital, valuation methodology, additivity of charges across risk types, trading/banking book boundary);

-Section II – Internal Ratings : Section II focuses on the calibration of the IRB function, as well as the granularity adjustment. It includes specific proposals for the treatment of equity and project finance;

-Section III – Credit Risk Mitigation : Section III reviews the treatment of credit risk mitigation instruments, particularly the appropriateness of the W factor, as well as the approach retained to capturing joint default risk. Our comments on these topics were developed jointly with the British Bankers' Association (BBA) and the London Investment Banking Association (LIBA).

-Section IV- Operational Risk Section IV proposes an approach intended to achieve the shared objective of risk sensitivity in introducing a charge for operational risk.

-Section V- Pillar III - Market discipline Section V reviews the disclosure requirements and includes recommendations for a reorientation of the current approach. It includes our findings on a survey of information requirements among end-users of annual accounts, conducted jointly with the BBA and LIBA.

ISDA has furthermore identified areas where follow-up work is necessary, and is looking forward to sharing its findings with the supervisors in due course:

- (i) **Calibration**: we are currently running a simplified calibration study jointly with the European Banking Federation, and will report on our findings in the summer of 2001.
- (ii) **Specific risk in the trading book** : additional work is required to define exactly how the changes envisaged to the treatment of credit risk in the banking book might impact on the way in which the standardised specific risk charge is formulated in the trading book.
- (iii) **Granularity adjustment** : ISDA is reviewing the formula proposed for the granularity adjustment.
- (iv) **Treatment of equity investments** : a survey of banks' modelling practices is envisaged for the summer of 2001.

³ i.e. non collateralised forms of protection

SECTION I – CONCEPTUAL FRAMEWORK

On the conceptual framework underpinning the proposals contained in the Consultation Paper, ISDA would like to offer the following comments :

- 1- Definition of capital;
- 2- Valuation paradigm;
- 3- Overall calibration of the charge;
- 4- Cross risk diversification;
- 5- Banking / Trading book boundary;
- 6- Counterparty risk;
- 7- Consolidation;
- 8- Implementation of the new proposals.

1- DEFINITION OF CAPITAL ; GENERAL PROVISIONS

The Basel Committee has adopted a definition of regulatory capital encompassing both expected and unexpected loss (EL and UL), in contrast with banks' internal practices, where economic capital is assigned against UL only. Retaining a framework where EL provisioning was reviewed under Pillar 2 would have been more consistent with industry standards. ISDA strongly recommended in its first response to the Basel Committee that UL should form the basis for setting banks' capital requirements. We would however concede that a definition covering both EL and UL is conceptually defensible in the light of the current discrepancy in the definition of expected loss for risk management and provisioning purposes and lack of a generally accepted accounting and tax treatment for general provisions. It should be emphasized that, when and if a harmonised definition of EL were adopted in future, the regulatory capital requirements should be re-focused on UL. In order to facilitate this potential re-focusing, it would be helpful if the UL and EL components in the proposed capital charges were clearly separated. We would also suggest that for assets/activities where losses occur routinely, like retail assets or, for operational risk purposes, transaction processing, the Basel Committee excludes EL from the scope of Pillar 1, and reviews provisioning adequacy as part of Pillar 2. This is because for those types of activities/assets, expected loss is normally priced in the margin applied. Hence, a core level of income, reflecting the amount that is almost certain to be achieved and which can be validated against historical track record, should be taken into account against EL.

In the light of the above, the principle of maintaining a 50%/50% minimum split between Tier 1 and Tier 2 capital is not substantiated⁴, particularly if the Committee intends to offset a possible lack of loss absorbing capital by systematically increasing the banks' credit risk charge (as is proposed- see section II.2 below). Lack of Tier 1 capital should be addressed as part of the supervisory process.

Finally, it is important to ensure that the cap currently placed on general provisions in the composition of Tier 2 capital is removed. Expected loss (EL) might well in practice exceed 1.25% of risk weighted assets. Since general provisions are a commonly used form of protection against EL⁵, truncating them for capital purposes is unjustified.

2- VALUATION PARADIGM

ISDA's understanding is that the Basel Committee's proposals assume the use of accrual accounting in the banking book.

Although a majority of institutions continue to account for their exposures on an accrual basis, an increasing number of firms mark to market (MTM) (or mark to model) as part of their internal risk

⁴ The proposed 50% Tier 1/50% Tier 2 split for deductions from capital would need to be amended accordingly.

⁵ Subject to accounting constraints in some countries. It is essential that the Basel Committee addresses these issues quickly with the relevant Accounting Bodies to ensure that inconsistencies and restrictions in the accounting definitions of general provisions are dealt with.

measurement process. The Joint Working Group of Standard Setters in their recent draft standard on Financial Instruments and similar items⁶ mentions the possibility of further expanding the scope of fair value accounting.

ISDA believes that a move to fair value accounting would necessitate a substantial review of the capital adequacy framework described in the Consultation Paper, particularly with respect to the treatment of interest rate risk and the definition of credit risk.

We note that the Committee itself is implying the use of MTM in relation to collateral (the collateral haircut calculation includes a correction for volatility of the underlying exposure). We do not believe that this approach will yield meaningful results in a framework that remains calibrated upon the existing accrual based capital requirements (see Section III.3 below for our comments on the collateral haircut calculation).

3- CALIBRATION OF THE CAPITAL CHARGE

The Committee is proposing to benchmark the new capital charge against the global amount of regulatory capital currently held in the banking system.

A more valid objective should be to ensure that the charges implied for unexpected loss in the new framework are not disproportionately high compared to the banks' internal economic capital calculations. This is what we referred to as the need to align regulatory and economic capital in our first response to the Committee. If such alignment was impossible, incentives for regulatory arbitrage would continue to exist.

Calibration of the Internal Ratings Based (IRB) charge:

Having compared the Basel Committee's proposals with its own calculations⁷, ISDA is concerned by the fact that the regulatory capital numbers (deflated for EL) seem to be twice as high as those obtained by firms using their internal models, based on the same set of assumptions (100% LGD, 99.5th percentile, 3 year average maturity).

Having analysed the differential between the Committee's and our own numbers, we find that the main part of the gap is explained by the inclusion of a 1.5 multiplier in the IRB function proposed. The rationale for applying any such multiplier is highly questionable (see our detailed comments under Section II). Calibrating the capital charge to 99.5th percentile loss (as implied in the IRB function) delivers the right form of incentive for banks, while ensuring that the capital charge applied is effectively a minimum requirement (the implication being that a bank is expected to remain investment grade). Multiplying the 99.5th loss by 1.5 raises the capital standard to a level broadly equivalent to a single "A" rating, a hurdle which a number of banks might not be able to overcome, and certainly inconsistent with the recognised need for setting truly minimum requirements.

We hope that the new impact study launched by the Basel Committee will offer additional proof of the need to remove the multiplier from the IRB function, leading to a reduction in the function's scaling factor by a third.

ISDA is conducting a simplified calibration study jointly with the European Banking Federation and will report to the Committee on its results in the summer of 2001. Information obtained from a limited number of banks to date confirms that the current credit risk capital requirements are in general lower than those under the proposed IRB approach.

Furthermore, it can be shown (see Section II below for further detail) that the relative calibration of the standardised versus the IRB approach may discourage banks from moving towards internal ratings. A concentration of relatively poor quality loans on the books of the less sophisticated banks may result.

⁶ ISDA will be commenting separately on these proposals.

⁷ ISDA's index matrix, re-estimated at 99.5th percentile.

Calibration of the operational risk charge (see Section IV below) :

It remains a concern if the operational risk element is crudely calibrated, reducing the risk sensitivity of this element and by extension that of the overall capital charge. More specifically, the choice of 20% of current regulatory capital as a benchmark risks significantly overcharging some banks, seriously reducing incentives to lower levels of operational risk.

As the addition of a 20% operational risk charge has not been offset by a reduction in credit risk capital, it appears that regulatory capital under the new regime will for many banks be higher than under the current requirements.

4- CROSS RISK DIVERSIFICATION

The Basel Committee is defining banks' regulatory capital as the sum of operational, credit and market risk charges, defined independently from each other. This approach ignores any potential benefit accruing from cross risk diversification.

A number of institutions are researching diversification effects across the main risk types, and ISDA would urge the Committee to recognise proven diversification effects, subject to strict validation requirements. The aggregated capital formula could for this purpose be expressed as the sum of the underlying risk charges, multiplied by a diversification factor, set at 1 initially, but capable of being brought down to a level more consistent with observed correlation across market/credit/operational loss patterns.

There are strong grounds to believe that a substantial amount of cross risk diversification exists :

- Even where the risk factors are positively correlated (e.g. in an economic downturn accompanied both by a rise in interest rates and increased default rates), the degree of correlation will rarely be perfect;

- Furthermore, low or, in some instances, negative correlation exists⁸. For instance, operational risk is essentially uncorrelated with the economic variables that drive returns for market and credit risk. Similarly, long FX positions have zero correlation with credit losses.

As firms integrate risk management functions and develop global loss distributions, encompassing all risk types, ISDA would hope that cross risk diversification becomes a factor in the setting of banks' regulatory capital, through the recognition of the firms' internal models.

5- BANKING/TRADING BOOK BOUNDARY

ISDA welcomes the broadening of the trading book eligibility criteria. This will encourage banks to begin the development of a disciplined marking to market process for credit assets. We note, however, that some of the requirements for obtaining trading book treatment would thwart this incentive. In particular, the requirement that loans be "free of any restrictive covenant on their tradability or ability to be hedged completely" is too onerous (para 567). Virtually all loan agreements require that both the borrower and the agent consent to any assignment, although the consent cannot be unreasonably withheld. In addition, loan agreements generally specify minimum amounts that can be assigned. We recommend that standards for eligibility reflect market practices in the loan market.

As it relates to the calculation of the specific risk capital charges for positions hedged by credit derivatives, the Committee's consultation paper needs some modification. For instance, the requirement that there be an "exact match in terms of reference asset, maturity, and currency to the underlying exposure" (para 584) does not reflect current practices or documentation in the credit

⁸ One implication of the Merton model is that changes in credit spreads and changes in default free interest rates are negatively correlated. Empirical evidence has been found to substantiate this finding [see in particular "The intersection of Market and Credit Risk" by Robert A. Jarrow and Stuart M. Turnbull, September 1998]. Testing conducted at banks shows that positions where fixed interest rates are received are negatively correlated with credit losses.

derivative market. Most credit derivatives traded have a definition of obligation which is typically all senior unsecured Borrowed Money and have as deliverable obligation all senior unsecured Bonds and Loans. Offset should be permitted for these broad definitions provided that the asset being hedged would fall within the broad definition.

In the light of the new proposals for the treatment of credit risk in the banking book, we believe that the standardised treatment of specific risk should be amended, beyond the changes suggested in the Consultation Paper, to include :

- a maturity dimension in the setting of the capital requirement (essential if forward credit risk is to be appropriately captured);
- the possibility to use internal ratings.

It was not possible to develop our thinking on this issue in the time frame available for providing comments to the Committee, but we hope to be able to submit further proposals in the course of 2001.

6- COUNTERPARTY RISK

ISDA has concerns regarding the application of rules based on the use of accrual accounting in the banking book to trading book exposures. The assumptions regarding the calibration of credit risk requirements in the banking book may not be appropriate for trading book exposures which are typically shorter-term in nature, more liquid and marked to market. This means that trading book counterparty risk issues need to be separately considered, and not just subject to a read-across from the banking book.

In this light, ISDA welcomes the positive tone adopted by the Committee with regard to the modelling of Potential Future Exposure for OTC derivatives. We have set up a specific Working Group for the purpose of reviewing the counterparty risk treatment of these products. The main objective of the group has been to identify a measure of exposure that is consistent with the approach taken for loans, and quantify the average exposure on OTC derivatives based on this measure. The group also believes that banks should be allowed to use their internal VaR- type modelling techniques for calculating OTC derivative exposures, in consistency with the approach recommended by the Committee for collateral haircuts. Our conclusions are presented at Annex 1.

Capital requirements for securities financing transactions are analysed in detail at Annex 2 (joint ISDA-LIBA-BBA study).

7- CONSOLIDATION

ISDA would like to recommend that banks have the possibility to consolidate their insurance subsidiaries. Insurance activities, although distinct from banking, carry a number of common features which in our view should warrant the ability to consolidate. The European Commission, in its draft financial conglomerates directive, is proposing a framework enabling the consolidation of insurance companies within a financial group. Full consolidation is also an issue actively discussed in the Joint Forum.

We further do not believe that deductions from capital should impact Tier 1 and Tier 2 capital based on a 50/50 pro-rata. This is partly because we do not view the minimum 50% Tier 1 floor as justified (see I.1. above). However, even if the minimum size requirement for Tier 1 remained extant, it would not logically follow that deductions from capital should be 50% from Tier 1 and 50% from Tier 2.⁹ Firms should be permitted to allocate the deduction freely between Tier 1 and Tier 2, provided the floor requirement remains met.

8- IMPLEMENTATION OF THE NEW FRAMEWORK

Substantial flexibility has been built by the Basel Committee into the assessment of institutions' eligibility for entry into the more advanced stages of the credit and operational risk frameworks (e.g. the Internal Rating Based approach), the appreciation of banks' definition of default etc. While ISDA

⁹ A firm with excess Tier 1 capital may still meet the 50% floor requirement, even where deducting capital principally from Tier 1.

welcomes this flexibility, we are concerned that it might lead to the emergence of dual regulatory standards. We would therefore urge the Basel Committee to closely review the implementation of the new Capital Adequacy framework across the G-10 and to promote the adoption of common standards. The Committee should also be encouraged to show transparency, by reporting publicly on how the new rules have been implemented in different countries, provided that this does not slow down implementation of the new Accord.

SECTION II- INTERNAL RATINGS BASED CAPITAL REQUIREMENTS

ISDA is generally pleased with the Committee's proposals in this field :

- (i) We support the establishment of a continuous function for deriving credit risk capital charges; the Merton framework is employed by a majority of large internationally active banks to model corporate portfolio losses, and hence is the natural choice for setting credit risk charges against corporate assets. For retail exposures, no consensus has emerged in the market as to which functional approach should prevail. However, for consistency, ISDA would not object to the use of a Merton type approach, provided that the function was calibrated to deliver charges commensurate with the risk embedded in retail activities.
- (ii) The loss percentile (99.5th) retained is reasonable. Importantly, this percentile should be kept constant throughout the economic cycle. If capital needs vary to reflect the state of the economy, then banks will typically hold a buffer of additional capital above and beyond minimum requirements. This buffer will cover pro-cyclicality, as well as diversification and liquidity effects. Its adequacy should be reviewed by supervisors as part of Pillar 2 of the capital framework.
- (iii) The asset return correlation assumptions underpinning the proposed corporate and retail credit risk charges (respectively 20% and 8%) are consistent with banks' experience. ISDA would wish to emphasize that in a Merton (CreditMetrics or KMV) type framework, macro-economic downturns do not impact on asset returns correlations, but on the transition matrix being used. It is therefore appropriate to postulate one average correlation per asset type, without adjusting it through the cycle.
- (iv) We welcome the proposed inclusion of maturity as a risk driver, although the sensitivity of the proposed capital charge to maturity might be slightly overstated (see II-2 below).
- (v) The standard LGD estimates retained as part of the foundation IRB approach appear realistic¹⁰. As far as EAD is concerned, we would suggest that committed lines receive a consistent treatment across the standardised and foundation IRB approach. The conversion factors suggested by the Committee in the standardised approach would seem appropriate¹¹, although introducing more continuity around the one year threshold would be advisable.
- (vi) We in principle support the high degree of flexibility provided for in the assessment of banks' eligibility for entry into the IRB approach, subject to comments listed under II.1. below.

Our main causes for concern at this stage are the criteria for entry into the advanced approach (II.1.); the calibration of the IRB function, both in the absolute and relatively to the standardised approach (II.2.), as well as the inclusion of a floor on the advanced IRB charge (II.2.). Our proposals on granularity, as well as for the treatment of equity and project finance are outlined at II.3. and II.4. below.

1- IRB ENTRY REQUIREMENTS

ISDA supports the idea that banks should meet some qualification requirements in order to be able to use the internal ratings approach. Such requirements would help ensure that only the most capable firms are able to take advantage of more sophisticated techniques and would help level the playing field among those eligible banks. Many of the requirements in the proposals seem sensible –and do reflect banks' current practice in general. Accordingly, the comments below focus only on issues or questions we have with the draft requirements [references to relevant paragraphs in the Committee's paper are provided throughout].

¹⁰ With some exceptions, particularly in relation to securitisation structures (see Section III. 3 below)

¹¹ See in particular "Loan Equivalents for Revolving Credits and Advised Lines" by Michel Araten and Michael P. Jacobs, JPMorgan Chase & Co, March 2001

Consolidated supervision

Para 159 -- It is essential that regulators co-operate amongst themselves to minimize the costs of potentially contradictory capital and validation requirements. This is a particular issue for financial groups operating cross-border. If in some jurisdictions, the IRB approach was unavailable, then it would be necessary to disapply the principle according to which no capital relief can be granted for intra-group transactions where some business units are treated under IRB and others, under the standardised approach. Groups involved in mergers may be faced with a similar situation, where segments of the group use the IRB approach, while others do not, or at least not yet. Furthermore, there are instances where cost benefit analysis shows that developing an internal rating system for a segment of the books is uneconomic. Supervisors should not systematically require that an internal ratings system be developed, unless evidence of cherry picking can be found.

Rating grade structure

para 240 -- The Basel Committee should be somewhat less specific in establishing minimum requirements for rating grades. We think the Committee should ensure through the supervisory process that the distinction between investment grades and non-investment grades sufficiently reflects the bank's risk profile. The IRB function itself provides a natural incentive for banks to develop a granular approach to rating their exposures.

para 242 -- The Committee should eliminate the requirement that no more than 30% of gross exposures can be in any one risk grade. This should be addressed in Pillar 2, where 30% could be used as guidance. An implication of the requirement, as drafted, is that banks should lower their underwriting standards if they have a concentration of assets in a high quality risk grade. A good internal model should be capable of differentiating amongst exposures. The composition of the firm's portfolio should be a choice for management.

Coverage of ratings

para 244 -- Instead of the requirement that each borrower must be assigned a rating before any loan is originated, banks should be required to have policies around ratings coverage and the treatment of unrated exposures. It might not be functionally possible to assign a rating in all cases before a borrowing takes place (e.g. certain overdraft facilities).

Assignment of ratings

para 246 -- The requirement that reviews or re-ratings are conducted at least annually should be guidance. Banks should have the flexibility to have a less frequent review for certain credits, e.g. low risk or where new information is not yet available.

para 247 -- The Committee should eliminate the requirements to act within 90 days of receiving new information about a borrower or within 30 days for a weaker credit. When to act on information should be left to management discretion and discussed as part of the supervisory process as appropriate.

Oversight by the Board of Directors

para 248 -- Although the Board of Directors clearly has responsibility for periodically reviewing the major risks run by the bank¹², the requirement that it approves all material aspects of the rating and PD estimation process (also LGDs and EADs as specified in later paragraphs) is intrusive and out of step with the role Boards typically perform. The approval process for the ratings system should be left to management discretion.

para 249 -- The frequency and type of reporting should be left to the discretion of the relevant senior managers, risk managers, and business managers. The level and the change in the amount of economic capital consumed by the credit business may be far more useful to the Board as a summary measure than the list in the proposal.

¹² Framework for Internal Control Systems in Banking Organisations, Basel Committee, September 1998

Internal and external audit

para 253 -- Requirement for annual review of ratings system by Audit should be made more flexible. Again, guidance is preferable to a requirement (similar view on review of PD estimates in paragraph 275).

Risk assessment

paras 262-263 -- There is some contradiction between the required one-year horizon (point-in-time approach) and the statements in para 262 that reference a "through the cycle" approach. (See also para 270 where there is a contradiction between the first and second sentences.) We suggest that the Committee expect banks to estimate one-year PDs after considering available material information that reflects the financial condition of the borrower and the bank's assessment of the borrower's ability to perform according to contractual terms.

para 265 -- It should not be required that transfer risk is considered in the borrower rating, as this contradicts the principle of a separation between borrower risk and facility risk.

para 283 -- It is reasonable to require a five-year historical observation period for PD estimates for corporate assets. At the same time, we believe banks should retain flexibility to weight observations to reflect their prevailing credit view or changes in the portfolio. Moreover, to help preserve a level playing field, banks should not be required to use longer observation periods if the data are available.

For retail assets, five years will be too long, as most scoring systems are re-calibrated every two to three years ; consumer credit scorecards provided by external vendors (such as Beacon score) are usually replaced every three to four years, in order to reflect changing market conditions and consumer behaviour. We would hence suggest that a two year observation period is more appropriate. Moreover, due to the almost continuous improvement of retail scorecards, it would be unreasonable to expect that the entire portfolio should be re-scored. The use of samples rather than the entire portfolio should sensibly be accommodated.

para 285 -- Grandfathering or transition guidelines are likely to be required for the data collection and storage requirements in this paragraph. These are particularly onerous, and for some, bear little relation with internal ratings validation. We would suggest streamlining the list, in order to make it more effective, or including it as guidance.

Use of internal ratings

para 291 -- Default probabilities used for capital purposes may not be the same as those used for pricing purposes given different views of the relevant time horizon and the methodology used to derive the default probabilities for specific instruments. For example, some banks use the term structure of "risk-neutral" default probabilities for corporate asset pricing purposes and not the one-year PD.

para 292 -- The requirement that setting of limits and lending authority must be linked to ratings should be guidance. It is reasonable to base certain limits or authorities e.g. on notionals or economic capital calculations.

para 295 -- Banks do not necessarily mark all of their portfolios to market or to model for profitability reporting purposes. The requirement to tie PDs to general profitability analysis should be guidance only.

paras 297-298 -- If the portfolio is largely unchanged in terms of overall risk assessment, it may not be necessary to stress it every six months. Stresses targeted at certain classes of exposures or portfolios are likely to be more valuable in this context.

Internal validation

paras 302-305 -- Despite general concerns about being able to truly validate credit models, annual testing of model outputs against actual outcomes seems reasonable. The key issue will be how

validation is addressed through the supervisory process. Supervisors must be willing to accept reasonable results as opposed to certainty.

Minimum requirements for the advanced IRB approach

para 342 – The Committee proposes to require that LGD and EAD estimates be based on seven years of data, in contrast to PD estimates which can be based on five years. ISDA believes that LGDs and EADs should also be based on a five-year observation period.

para 361 -- LGD stresses are meant to be conducted every six months and should address, among other things, "the correlation in estimates of PD and LGD across exposures." We do not understand why banks are required to stress test correlations in this context where they cannot provide correlation estimates for the purposes of calculating Pillar 1 capital requirements in the first place.

para 388 -- It does not make sense to set limits for EADs; the requirement should be removed.

para 392 -- EAD link to general profitability analysis should be removed from Pillar 1.

para 394 -- EAD observation period should be consistent with PD and LGD. (See comment on para 342).

Reference definition of default

paras 272 and 466 -- ISDA supports the reference definition of default adopted by the Committee for corporate assets. We would note that total consistency is not necessary between the IRB definition of default and the list of credit events covered under guarantees/ credit derivatives contracts. Where the IRB definition of default needs to flexibly reflect banks' risk management practice, hence encompass instances where risk managers might anticipate a credit event, a guarantee or credit derivative contract cannot be triggered by a subjective judgement made by the protection buyer. In most instances however, difficulties anticipated on an exposure will lead to default, hence trigger potential hedges. The difference in definition between the underlying and the hedge hence boils down to one of timing.

The reference definition of default adopted for corporate exposures is only partially applicable in the retail world : where, for corporate exposures, default is defined at obligor level, it is in fact analysed at transaction level for retail¹³. We therefore believe that the definition of default adopted for retail should be amended to cover one or more of the first three events listed, however with regard to a particular obligation rather than obligor, as well as obligor bankruptcy. Furthermore, the 90 days past due rule should be interpreted flexibly in relation to some retail products, particularly overdrafts, unsecured personal lending and credit cards¹⁴.

More broadly, of the four events described in the Committee's paper only some may be relevant for certain types of exposures¹⁵. Banks should be allowed to flexibly interpret the reference definition to reflect the nature of their exposures, as well as the manner in which these exposures are managed. On this latter point, it is important to note that the type of credit risk protection acquired against an asset might retro-act on the type of default events which should be monitored ; if protection bought excludes re-structuring for instance, then it is likely that the asset will not be re-structured, in turn rendering useless the monitoring of this credit event.

The main purpose of the reference definition of default in our view is to guide banks in their data collection process, by identifying which events should be tracked, hence ensuring that they build sound and reasonably consistent databases of which probabilities of default and loss given default data may be derived.

¹³Experience has shown that an individual might default on his credit card payments, rarely on his mortgage.

¹⁴Nor is it fully applicable where the counterparty is simply late in meeting its obligation.

¹⁵For instance, banks' defaults are characterized by distinct events (removal of authorisation, provision of liquidity support by the Central Bank).

Segmentation of retail exposures

paras 443-447 -- The division of exposures into homogeneous segments is an important part of the risk management of retail assets. Each segment should be as homogenous as possible with respect to the credit characteristics of the assets within it. However, each segment must also contain a sufficient number of assets to allow statistical estimation of default probability, severity, and exposure at default. There is a tension between achieving homogeneity, which would naturally tend to increase the number of segments, and having statistical significance, which would tend to restrict the number of segments.

The suggested segmentation in the Committee's Consultation Paper may not be appropriate for all portfolios. The most ideal segmentation is likely to differ between products, countries, and even between banks within the same jurisdiction. The key test is that the characteristics chosen by the bank should be those used internally to manage the business. Each institution should be free to choose the segmentation it deems most appropriate, and specific segments should not be made compulsory. The institution should justify its chosen scheme (on the basis of performance) to the regulators in the supervisory review process.

The key point is that, whilst a bank should be free to choose its own segmentation, it must be capable of mapping each of these segments to a probability of default, LGD, and an EAD. This mapping will ensure that capital levels are consistent over time, across products, across jurisdictions, and across individual banks.

Not allowing an institution to choose its own segmentation would lead to a number of problems:

- The most appropriate variable to distinguish borrower quality may well change over time. For example, an application score may be appropriate for the initial few months, after which a behavioural score may be a better estimate of default probability.
- New products are being continually developed. It is important that the proposals are able to accommodate such market developments.
- The "tension" described above implies that a bank should optimise its choice of segments by using those which are most discriminating. However, if compulsory segments are set which are less discriminating, then banks will either have to use a sub-optimal segmentation, or have unduly small populations in some parts of the overall segmentation.
- Assets which do not have the requisite attributes may lead to these assets being unfairly penalised. For example, assets originated prior to the introduction of scorecards may be unscored. However, because they are "old" assets they are likely to have performed for an extended period, and therefore be of high quality. A more flexible segmentation scheme would allow for these assets, where it can be established (e.g. from delinquency rates) that they are of higher quality, to be treated favourably.

2- IRB FUNCTIONS FOR RETAIL AND CORPORATES

Calibration of the IRB function

Absolute calibration :

As stated under Section I.3., and although ISDA fully supports the conceptual framework underpinning the function selected by the Committee, we view the resulting capital charges as too high compared to banks' economic capital, and to their current credit risk capital requirements. We understand that the 1.5 multiplier embedded in the IRB function has two purposes :

- (i) hedge against a possible 50% measurement error in PD estimates (+20%) ;
- (ii) adjust for a possible lack of loss-absorbing capital (+30%).

ISDA views these adjustments as unjustified :

- (i) A systematic 50% underestimation ought to in practice disqualify a rating system for IRB eligibility purposes, pointing to Pillar 2 being the appropriate channel for assessing the impact on capital requirements of PD measurement errors¹⁶. It is also contestable to assume that banks' internal ratings will be lenient, where no similar

¹⁶ It should be noted that banks' internal rating systems are generally conservative : for instance, where a rating is borderline, the asset is often downgraded by one notch

assumption is made for external ratings as part of the standardised approach. It should further be noted that the estimation error is high where the observed/calibrated default probability is low, hence for good rating grades; an overall constant factor will penalise sub-investment grade companies, where PD estimation error is comparatively small. Also, banks would not have the proper incentive to improve the accuracy of a rating system if a 50% error were presumed.

- (ii) There is no rationale for over-charging the entire industry by 30% just for the purpose of addressing a possible lack of loss absorbing capital at some institutions. Supervisors should review the adequacy of Tier 1 capital as part of Pillar 2 of the New Accord.

Calibration relative to the standardised approach :

In the light of the above, ISDA would argue that the 1.5 multiplier embedded in the IRB function should be removed. This is all the more necessary that there is currently no incentive to progress from the standardised approach to the IRB approach. A substantial proportion of banks' books is invested in below investment grade assets, which receive a higher charge under IRB, and the costs of meeting the IRB entry criteria are significant.

Even if the IRB function was scaled back, the standardised approach might deliver lower charges for some banks, particularly institutions with massive unrated or below investment grade corporate portfolios. This might discourage good risk management practice and could result in significant risk transfers from IRB banks to institutions treated under the standardised approach, resulting in a concentration of the riskiest assets on the balance sheet of some of the less sophisticated firms. ISDA would hope that such adverse effects can be averted through Pillar 2 supervision.

Specific risk provisioning

The LGD assumptions in the foundation IRB charge are such that they might deter specific provisioning. In order to restore the incentive for banks to provision, ISDA would suggest that the exposure net of specific provision is assigned a corrected LGD equal to :

$$\text{Max}((\text{foundation LGD (50\% or 75\%)} - \% \text{ of exposure provisioned}) / (1 - \% \text{ of exposure provisioned}), 0)$$

This ensures that the amount of capital is not increased when a provision is made, except where the provision exceeds the foundation LGD.

It should further be clarified in the New Accord that the proposed capital charges apply to the notional net of any specific provisions. For undrawn commitments, the EAD (or, in the standardised approach, the balance sheet equivalent) is relevant, rather than the notional amount.

Floor on advanced IRB

ISDA does not understand the rationale for imposing a 90% floor on the advanced IRB charge. Not only will the floor calculation impose material costs on banks, but the risk of seeing a substantial decrease in regulatory capital follow a move to the advanced approach seems tenuous. In practice, average internal LGD figures (and indeed rating agencies' average experience) revolve around 40%, yielding credit risk requirements within the 90% floor ballpark. It further seems of little relevance to impose a floor during the two years following the date of implementation of the New Accord, considering that few firms are likely to qualify for treatment under advanced IRB as early as 2004-2005.

Floor on PD measure

The relevance of the 3 basis points floor on PDs is not well substantiated. Regulators should let banks use the information they have available (pooled, history) to derive probabilities of default for each of the rating grades (if relevant) they use. There is no rationale for forcing floors upon these probabilities, particularly at the "good quality" end of the spectrum, where the default probability is by definition small.

Maturity

Maturity adjustment :

It is essential that banks are given an option to use maturity as a risk driver in the setting of their credit risk capital requirements, including as part of the foundation IRB approach.

The MTM-based maturity adjustment proposed does not clearly disentangle EL and UL, whereas in a Merton type framework, only UL is impacted by maturity. We would wish for clarification to be brought on this point by the Committee. It would also be useful for maturity adjustments to be available for assets of a maturity below one year (as available for inter-bank exposures under the standardised approach). Maturity buckets corresponding to one, three and six months could be developed for this purpose.

Although the maturity adjustment otherwise presents a shape consistent with our earlier findings¹⁷, the precise impact of maturity on banks' economic capital is a function of the transition matrix/ re-pricing approach used. For this reason, we would suggest that under the advanced approach, banks be allowed to use their own empirical adjustment for maturity.

Definition of maturity :

For assets where a statistically predictable flow of pre-payments is known to occur, and where behavioural maturity is not correlated with credit quality (e.g. some fixed rate assets, asset backed securities) we would recommend that the Committee uses behavioural, rather than contractual maturity as an input in the capital calculation.

Standard maturity assumption :

Finally, the three year maturity assumption postulated for banks not using maturity adjustments is economically inappropriate. Using "Average economic maturity"¹⁸ would seem a more reasonable principle, provided that full account is taken of expected pre-payments¹⁹.

Retail function and SMEs

Definition of retail :

ISDA supports the Committee's approach to setting the boundary between retail and corporate assets; the test ought to be based on the assets' characteristics (diversified, small exposures) and the approach taken to their risk management, rather than the type of corporate. Exposures to Small and Medium Sized Enterprises (SMEs) which cannot be classified as retail should furthermore be differentiated from claims on large corporates, as they are in practice more diversified. In the framework proposed by the Committee, an intermediary layer can easily be incorporated, by founding the capital charge for SMEs on the Merton formula calibrated using an average asset return correlation of 14%²⁰. The definition of what constitutes an SME may vary slightly from bank to bank and should be reviewed as part of the supervisory process. Banks however tend to use similar determining factors in assigning corporates to the SME category: these would typically include the size of the company (total assets and number of employees), the amount borrowed, the availability of behavioural scoring and the ownership structure.

Calibration :

ISDA, in consistency with the findings of the EBF-ISDA Retail Portfolio Study (September 2000) accepts that credit risk charges for retail should be broadly 50% of those set for corporates, although purely where capital is set to cover UL. In the light of our earlier comments on the definition of regulatory capital (section I.1.), we would suggest that the IRB function used for retail assets is re-focused on UL, and re-calibrated to attain the 50% ratio on this basis.

We have further considered whether applying a lower than 100% risk weight was legitimate for retail assets under the standardised approach :

¹⁷ See ISDA's response to the first Basel Committee's Consultation Paper on capital adequacy.

¹⁸ Weighted average of behavioural/contractual (as appropriate) maturities

¹⁹ It should be noted that in order to maintain consistency between the standardised and the IRB approaches, ideally the standardised approach should be calibrated based on an average taken of "Average economic maturities" across banks subject to the New Accord.

²⁰ Research conducted by one bank on losses spanning 1996-2000 supports this correlation assumption.

- If the proposed definition of capital (EL plus UL) is used, then 100% is appropriate, since average default experience for retail assets is broadly consistent with a 2% yearly default probability, which under IRB receives a risk weight of around 100%.
- If for retail assets capital charges are focused on UL, then introducing a specific 70% capital bucket for retail would be justified in the standardised approach.

Treatment of sovereigns

It is common practice to assign different default probabilities for debt issued by a sovereign, depending on whether it is denominated in the domestic currency or not. It would be useful if the Committee could clarify whether this practice will be recognised in the IRB approach. It would also be sensible to treat sovereign risk identically across the standardised and IRB approaches, ensuring in particular that if a 0% risk weight applies in the standardised approach, it translates to the IRB approach.

Treatment of assets not classified as claims

Under the IRB approach, the Basel Committee should specify which risk weights should be applied to items to which no PD can be assigned, particularly gold bullion held in own vaults (currently 0% risk weighted), fixed assets (100% risk weighted) or cash items in the course of collection (20% risk weighted under the 1988 Capital Accord).

3- GRANULARITY ADJUSTMENT

ISDA accepts the rationale and general form of the granularity adjustment. It is theoretically sound to adjust capital at the portfolio level for the non-additive unsystematic component of risk, and we view this as a further step towards recognition of credit risk portfolio modelling. ISDA would like to see publication of the explicit details behind the calibration of the granularity adjustment, and notes that the paper referenced in the IRB supporting document does not contain these details. However the calculations required by the adjustment and the overall level of the adjustment relative to base capital seem broadly appropriate, subject to review of the underlying calibration.

It should be emphasised that while the granularity adjustment represents a reasonable attempt to capture unsystematic risk, this is only one of the respects in which the proposed IRB risk weights may fail to capture the specifics of a portfolio. In particular no adjustment to reduce capital will be offered to banks whose international character implies a lower average asset correlation than the global average embedded in the IRB baseline risk weights.

ISDA views the presentation of the granularity adjustment equations as overly complex. In particular, it is not a necessity to present the calculations at the rating grade level, with subsequent aggregation to the portfolio level. The adjustment depends only on default probabilities, exposures at default and losses given default; it does not intrinsically depend on which ranges of default probabilities correspond to each grade. This would be more clearly reflected if references to rating buckets were removed from the equations. Additionally, the equations with the sole exception of the granularity scaling factor, should depend only on the absolute loss given default, which is the product of exposure at default and percentage loss given default, and not on these quantities separately. Presentation in terms of the absolute loss given default would further simplify the equations at no cost to the accuracy of the adjustment.

It is noted that unlike the risk weights, the granularity adjustment requires aggregation of exposures to the counterparty level. ISDA is able to accept this requirement but notes that an additional burden may be placed on some banks, especially those with many business units. Furthermore, we note that the granularity adjustment calculation is not currently based on the same modelling framework as that underpinning the IRB function itself. It would be desirable to achieve greater consistency in designing the adjustment. ISDA will report back to the Committee on this issue by end June 2001.

Finally, it is important that a placeholder is introduced in the Accord enabling the future recognition of portfolio credit risk models, as and when the Basel Committee feels satisfied that such models can be validated.

4- TREATMENT OF PROJECT FINANCE AND EQUITY

Project finance²¹

The ISDA membership does not believe that a special case should be made for project finance transactions. These are in practice treated by firms in the same PD/LGD/EAD framework used for corporate lending, hence can and should be integrated in the proposed IRB framework. In this light, what distinguishes project finance, as well as in more general terms structured finance, is the specific nature of the collateral²².

ISDA believes that the EAD and LGD estimates developed for the foundation Internal Ratings Based approach are suitable for use in relation to project finance.

Equity investments in commercial entities

It is acknowledged that equity investment activities are riskier than traditional banking activities and that it is prudent to fund these types of investment activities with higher levels of capital. However, the methodologies used to assign economic capital against these investments vary widely.

ISDA intends to develop a better understanding of the modelling methodologies used for assigning capital against equity investments over the coming months and will report on its findings in due course.

²¹ In the following, refers to infrastructure projects

²² Recourse is limited to the collateral itself, i.e. the value of the project, although in an increasing number of “hybrid” transactions, the sponsor will in practice prefer to work with the lenders to resolve any potential difficulties rather than lose the asset.

SECTION III – CREDIT RISK MITIGATION

The Committee's approach to credit risk mitigation has substantial merits : the expansion of the scope of eligible collateral and the recognition of firms' own collateral haircuts demonstrate readiness to place greater reliance on banks' risk management. However, the proposals are also disappointing in two main areas : legal risk and double default risk. We will expand on these topics below, before reviewing the detail of the framework.

1- W FACTOR

Rationale for W factor : legal, market or credit risk ?

It is not clear from the Basel consultation document, which of these three forms of risk the W factor is meant to address. Varyingly referred to as a charge for "residual" or "remaining" risks, it appears to be serving a dual purpose :

- For collateral, it is meant to maintain the banks' focus on the credit quality of the underlying, as well as to account for the fact that risk can never be reduced to zero, regardless of the amount of over-collateralisation achieved;
- For credit derivatives and guarantees, in addition to the former, it also seems to reflect the extent to which the enforceability of the documentation used has been upheld in practice.

Analysing further the rationale for "W", ISDA believes that rather than entangling credit (particularly joint default risk), market and legal risk into one single measure, the Committee should and in fact already does address these risk types separately.

- (i) W is a risk insensitive charge, by its very nature a tax imposed on banks' activities. As such, it cannot foster proper risk management, and in particular will not, at least in itself, focus their attention on the quality of the underlying. An effective means of promoting frequent monitoring of the underlying obligor's credit quality would have been to allow for some recognition of default correlation with the collateral issuer/protection provider. From this perspective, keeping substitution as the default rule for unfunded forms of credit protection deters good risk management practice. The W charge does not compensate for that.
- (ii) The argument that the W factor serves to cover a lack of 'willingness to pay' on behalf of a protection seller is not a valid argument in ISDA's view. In addition to an assessment of a counterparty's 'ability to pay', banks are also assessing a counterparty's 'willingness to pay' in the course of the credit approval process. As a result this risk is already incorporated in the credit risk charge.
- (iii) As far as collateralised transactions are concerned, all potential market risk is captured in the haircut calculation. The risk of additional market risk arising from potential disputes on the MTM of the collateral or the underlying is virtually non-existent in a framework where only collateral rated investment grade is recognised, particularly in the banking book where the underlying is booked on an accrual basis. In the trading book, the eligibility criteria imposed by the regulators will generally ensure that the underlying has a value at which it can be traded. If the documentation used is enforceable, then the only source of risk not explicitly encompassed in the proposed regulatory framework is joint default risk, which should be addressed separately (see our proposals under III.2. below). Once joint default risk is segregated, W becomes a pure legal risk charge.

W factor as a legal risk charge : unjustified and counter-productive

(i) *Unjustified :*

Credit derivatives contracts, as well as collateral and repo documentation, are legally enforceable according to their terms if properly authorised and executed. A number of industry bodies, chief amongst which ISDA, TBMA and ISMA, have been promoting the use of standardised documentation,

precisely for the purpose of improving legal certainty and enhancing liquidity in the market. Importantly, credit derivatives and repo prices do not integrate any legal risk component, implying that the market trusts the adequacy of the documentation used. Furthermore, the minimum standards (including legal robustness) which regulators impose for recognising collateral, guarantees and credit derivatives before granting any capital relief are already in themselves sufficient to ensure that legal risk attached to these forms of credit risk mitigation is minimal.

Credit derivatives documentation :

Enforceability :

The enforceability of credit derivatives transactions is unlikely to be called into question if they incorporate standard terms. In respect of transactions documented under ISDA terms, the enforceability of the underlying agreement is supported by a number of legal opinions from a host of jurisdictions. The courts have recognised the use of credit derivative products and the enforceability of the underlying terms in some recent cases²³.

Performance :

Despite the economic downturn in the US resulting in a number of corporate defaults, the credit derivatives market has held up well with default swap exercises being honoured by a range of counterparties, including investment banks, commercial banks, reinsurance companies and hedge funds. A limited survey conducted with the main dealers/ protection buyers reveals that most default events did not result in disputes or loss (on average zero or one per firm over the last two years). Accordingly, there are currently no grounds to believe that protection sold will not come into play as provided for under the contracts.

There have been issues arising on credit derivatives documentation, primarily caused by differences in the interpretation of the contract or by concerns about whether it produced the right economic result in the context of the definition of restructuring (e.g. in the Consecro case). However, protection buyers were, as far as we are aware, paid in most if not all cases.

Credit events covered under the contract :

ISDA strongly recommends that supervisors not require restructuring²⁴ to be included for regulatory capital purposes in the list of credit events covered by a credit derivatives contract. Failure to pay protection only should be sufficient for recognition of credit derivatives in the Accord. Restructuring should simply remain one of the several options that risk managers have at their disposal in tailoring credit protection to their needs.

Supervisors have expressed concern that a credit protection buyer could be exposed to residual risk if the contract does not include restructuring as a credit event, presenting this risk as a cause for applying an additional W charge. We believe such a treatment would ignore realities of the marketplace and would introduce inconsistent and inequitable treatment into the Accord.

A protection buyer cannot be placed unwillingly²⁵ in a situation where a loss arises that is not covered under the credit derivative contract. For instance, if the protection is not triggered by restructuring of the underlying asset then the protection buyer will not likely consent to the restructuring and, instead, will wait until a payment has been missed. A lender who had acquired a guarantee instead of a credit derivative would most likely act similarly in this situation and not agree to the restructuring, since guarantees typically only give rise to an obligation to pay by the guarantor following a failure to pay by the obligor and furthermore the guarantor's obligation to pay would be unenforceable if a restructuring were agreed to without the guarantor's consent. Hence, in this respect, a credit derivative without restructuring offers similar protection and incents similar behaviour to that of a guarantee (see Annex 3 for a comparative legal analysis of credit derivatives and bank guarantees). In this regard, ISDA notes

²³ See e.g., *URSA Minor Limited v. AON Financial Products, Inc.*

²⁴ Restructuring per se is not mentioned in the Basel Committee's consultation paper, but would include some of the events listed at para 126 (a).

²⁵ For bonds or syndicated loans, where if a qualifying percentage of holders accept a restructuring, the remaining holders have to follow, restructuring would normally be included as a credit event under the contract. This is consistent with the rating agencies' definitions of default.

that the Committee is satisfied that credit events typically covered by guarantees, which exclude restructuring, are sufficient to warrant capital relief.

Conversely, if restructuring protection has been obtained, the protection buyer will have paid for what may be perceived as a further degree of freedom in the management of its claim. We do not believe that residual risk will arise, even where restructuring occurs without an economic rationale. This is because whichever settlement mode has been elected under the contract, the protection buyer always has the option to fully hedge its position :

- (i) In the case of Physical Settlement, upon the determination of a Credit Event and assuming all the conditions to payment have been fulfilled, the protection buyer has the right to deliver an obligation of the Reference Entity in exchange for receipt of 100% of the par amount. For example, if a bank were to purchase \$10 million in protection on XYZ Corp. and during the life of the contract XYZ Corp. filed for Bankruptcy (or any other Credit Event), the protection buyer could deliver a \$10 million face amount obligation in exchange for \$10 million from the protection seller. Regardless of the market value at the time of the default, the purchaser of protection would receive full return of principal. Physical settlement is by far the most widely used mode of settlement.
- (ii) In the case of Cash Settlement, upon the determination of a Credit Event and assuming all conditions to payment have been fulfilled, the protection seller must make a cash payment to the protection buyer equal to the difference between Par (i.e. 100%) and the current market value of the obligation of the Reference Entity. In order to determine the cash payment, the protection buyer would determine an eligible reference obligation and would go to the market and solicit bids. In this example, we will assume that the bid received was 70%. In this case, the bank has the option to sell the asset at 70% and receive a payment from the protection seller of 30% (i.e. difference between Par and 70%). Again, after exercising the protection, the protection buyer's net position is the full return of principal through proceeds of the sale (i.e. 70%) and the cash payment from the protection seller (i.e. 30%). All basis risk related to settlement is eliminated.

Finally, we note that ISDA has recently been reviewing the definition of restructuring events, with a view towards ensuring that the economics of credit derivatives transactions are clear for both parties. Perhaps the biggest part of the discussions has been around the so-called "cheapest to deliver option", which was the source of concern by protection sellers in the Consecro case (See Annex 4 for detail). The new definition of restructuring will ensure that risk taken by the protection seller does not exceed credit risk on the underlying.

Collateral documentation :

In Europe, the Collateral Directive (soon to be adopted) will ensure that collateral rights can be exercised without the risk of re-appropriation by the collateral provider. This is already verified in a number of EU countries, as evidenced in the Collateral Opinions collected by ISDA.

The ISDA Credit Support Annex is enforceable in both Europe and the US, and loss experience on collateralised OTC derivatives transactions has been scarce. We therefore do not see any cause for applying a W factor on collateralised OTC derivatives transactions.

Securities financing documentation :

Securities financing transactions are undertaken under well-established documentation and we do not believe that there is any real degree of legal risk associated with them. In particular :

- even where there have been defaults/disputes, we have found no evidence to suggest that the enforceability of the agreements has been in doubt;
- where transactions are effected by outright transfer of title, we do not believe that there is any real risk of re-characterisation. We are aware that firms have obtained explicit re-characterisation opinions covering most major jurisdictions (Australia, Austria, Belgium, England, France, Germany, Hong Kong, Ireland, Japan, Netherlands, South Africa, Sweden and the United States) and there are moves to extend the industry-wide legal opinions on the

standard master agreements in order to cover this specific point²⁶ (of course, transactions for which robust legal opinions cannot be obtained would fail the minimum standards and therefore be ineligible for a favourable treatment).

In short, we do not believe that credit risk mitigation contracts carry more legal risk than any other form of contract being entered into by a bank and therefore do not understand why they have been singled out in the Committee's proposals. With legal risk included under the proposed regulatory definition of operational risk, ISDA would have thought that any such risk arising from credit risk mitigation transactions should be captured under the operational risk charge.

(ii) ***Counter-productive :***

Of great concern to ISDA is the fact that the introduction of a legal risk charge might distort the pricing of credit risk in the market. Any data drawn from credit spreads could be tainted, and may not be usable for input into internal credit risk models.

Even more concerning is the comparative treatment of products as economically close as bank guarantees and credit default swaps. The Basel Committee proposes to apply a zero "W" charge on bank guarantees, where "W" would be set at 15% for credit default swaps. The regulators' view seems to be that bilaterally negotiated, non-standardised products bring better protection than standardised marketable derivatives. For reasons laid out at Annex 3, ISDA strongly objects to this conception.

In any event, if the Basel Committee's proposals were unchanged, there would be a clear risk that protection buyers would seek to structure transactions as guarantees, rather than credit default swaps, leading to market fragmentation and a substantial rise in the cost of credit protection. Although we do not believe that this was the Committee's intention, we would warn against the risk of frustrating the development of a liquid credit risk market, in apparent contradiction with the avowed objective of facilitating the use of credit risk mitigation.

2- TREATMENT OF JOINT DEFAULT RISK

Another issue of concern to ISDA is the treatment of joint default risk, where we find the current proposals inconsistent:

- Low default correlation between the collateral issuer and the underlying obligor is a prerequisite in order to obtain capital relief, even though under the so-called simple approach, substitution (assuming maximum correlation) applies;
- In contrast, no comparable requirement is imposed on unfunded forms of credit risk protection.

In our response to the first Basel Committee Consultation Paper, we suggested a graduated approach to recognising the degree of default correlation between the underlying issuer and the collateral issuer/protection seller. We understand that the Committee felt that a simpler mechanism was needed. In this light, ISDA would recommend adopting a binary standard:

- (i) where high default correlation exists, substitution would continue to apply;
- (ii) where low default correlation is proven, the unfunded protection buyer²⁷ would carry a counterparty risk charge. For funded protection, no charge would apply on the protection buyer, as per the proposed treatment of collateral under the comprehensive approach.

Key in this framework is the differentiation between high and low correlation. ISDA views the example provided at para 72 of the Committee Consultation Paper, where high correlation is associated with instances where the collateral provider offers his own securities as collateral, as illustrative. In more

²⁶ Within the EU, the Financial Collateral Directive will provide absolute certainty (where the counterparty is a core market professional) on this point in those jurisdictions where there may currently be at least any remaining doubts.

²⁷ The counterparty risk charge would be defined as currently for credit default swaps in the trading book, subject to changes adopted for the purpose of implementing the new IRB approach. It would be based on a market (or model) assessment of the price of the credit derivative. The simplest measure to use would be the premium paid for protection.

general terms, we believe that low correlation can be found where the protection seller/ collateral issuer is rated investment grade (either internally or externally) (or above BB if it is a sovereign), is not legally connected with and is not located in the same below investment grade country as the underlying issuer.

Finally, it is essential that regulators stand ready to recognise default correlation estimates where these become available. The Basel framework should be sufficiently flexible to allow for their introduction, subject to appropriate validation requirements. We would note that the average asset return correlation retained as part of the IRB function may be converted into an average joint default probability corresponding to less than eight times the product of the individual default probabilities. The Committee is therefore implicitly making assumptions on joint default behaviour which are more favourable than the substitution rule. This, in ISDA's view, is a further reason for adopting a more economic treatment of joint default risk²⁸.

3- DETAILED COMMENTS

Eligible protection providers

Where high default correlation exists, ISDA believes that in principle all protection providers should be recognised provided that their credit quality is above the underlying obligor's. Since the standard haircut table does not extend to corporates rated below investment grade, only banks using their own haircuts would be able to benefit fully from this relaxation.

Where default correlation is low, the protection provider should be rated (either internally or externally) above BBB- if a corporate, or above BB if a sovereign.

Operational requirements on credit derivatives

ISDA believes that the rules laid out at paras 123 and 124 should be amended so that documentation of a credit derivative under an ISDA Master Agreement does not disqualify the credit derivatives contract for capital relief under the BIS Capital Rules.

A strict reading of paras 123 and 124 of the Consultation Paper may lead to the conclusion that a credit derivative documented under an ISDA Master Agreement would not qualify for capital relief, since a number of credit events (e.g. bankruptcy, default on indebtedness etc) other than "non payment of money due in respect of the credit protection contract" would allow a protection provider to "cancel the cover".

There is also a provision in the standard ISDA Master Agreement that permits a non-defaulting party to suspend payment on all transactions under the Agreements for so long as the other party is in default. Thus, if a Party A has failed to make a payment under an interest rate swap, Party B would be entitled to suspend payments under all other transactions (including a credit derivative under which protection was sold to Party A), until Party A cured the payment default under the interest rate swap. This technically violates para 124 in the Consultation Paper, which prohibits "a clause ... that could prevent the protection provider from being obliged to pay out in a timely manner".

Although ISDA would not believe that these results were intended by the Committee, the rules need to be clarified so that documentation of a credit derivative under an ISDA Master Agreement does not disqualify the contract for capital relief under the Basel Committee's capital rules.

Collateral:

ISDA would like to offer the following comments on the proposed approach to capturing the effect of collateral taking:

Scope :

²⁸ One may recall that in the standardised and foundation IRB approach, no credit is being given for the inevitably lower loss given default where an exposure is supported by a guarantee/ credit derivative. This, added to the substitution rule, leads to artificially conservative capital requirements.

- (i) The Committee should clarify the scope of eligible collateral, by providing a list of main indexes and specifying how convertible bonds would be treated in the proposed framework.
- (ii) The definition of cash collateral should be expanded to include not only a deposit with the lending bank but also cash held by the lending bank's custodian or agent, or cash in an account at a triparty custodian or in a clearing house/depository.
- (iii) The Committee's approach to real estate seems overly conservative. Loans with LTVs below 60% will in general qualify for ratings above single A, which should warrant lower than 40% loss given default. ISDA would recommend bringing down the LGD level to at least 20% in this instance.
- (iv) We would further urge the Committee to recognise commodities as a valid form of collateral for regulatory purposes, provided that reliable mark to market values and collateral haircuts can be calculated.
- (v) Some forms of physical collateral should also be recognised in the foundation IRB approach, particularly leasing, trade finance and receivables. ISDA has set up, jointly with the Risk Management Association and the British Bankers' Association, a Loss Given Default database, which we hope will help the industry pool enough data to provide the regulators with prudent LGD estimates in due course.

Haircuts :

- (vi) ISDA broadly supports the standardised haircuts proposed by the Committee (subject to our detailed comments on securities financing at Annex 2). It may be useful to clarify that 0% Multilateral Development Banks' securities should attract the same treatment as Sovereign debt. The FX haircut also seems too high; we would suggest retaining 5% for major currencies, and 10% for others (as per our first response to the Committee).
- (vii) On the collateral haircut calculation itself, the need for reflecting volatility in the underlying value (factor He defined in para 85 of the New Capital Accord) is questionable in an accrual based environment. The proposed treatment would introduce a serious inconsistency between secured assets (implicitly subject to MTM) and unsecured ones (subject to accrual accounting). Over-collateralisation would be required including for currency matched cash collateral, which appears over-conservative. Finally, applying factor He in relation to collateral held against OTC derivatives exposures would overlap with the add-on factor already present in the calculation of these exposures.
- (viii) Our proposals for the treatment of collateralised OTC derivatives transactions and securities financing are detailed at Annex 1 and Annex 2 respectively.
- (ix) ISDA would recommend that institutions allowed to use their internal collateral haircuts for regulatory purposes also be able to use their own assessment of the time necessary to liquidate, and of the impact of this variable on the size of the haircut. Eligibility for calculation of own haircuts should furthermore not be restricted to those with VaR model approval. The issues raised by VaR models are substantially more complicated than those raised by the simple instrument by instrument calculations needed for haircuts. Finally, the Committee should clarify whether for those institutions calculating their own haircuts, it is necessary to calculate the haircut instrument by instrument, or if some broad categorisation (e.g. of the type proposed in the standard haircut table) would be acceptable. FX risk in particular is evaluated on a portfolio basis by firms, a practice which we hope the Committee would recognise. Supervisors should also allow for a gradual move to using own estimates of collateral volatility, particularly in financial groups, where some business lines might already be using such estimates, while others are not.

Residual risk :

- (x) If a "W" charge should continue to apply, it should be set at zero for cash collateral, in accordance with the proposed treatment of on-balance sheet netting. A similar treatment should apply for collateral provided in the form of 0% weighted (Sovereigns' or Multilateral Development Banks') securities.

On-balance sheet netting

- (i) ISDA would suggest that the Committee leaves open the possibility to net between on and off balance sheet exposures, subject to adequate documentation (e.g. Master Agreement) being in place.
- (ii) The need for decomposing portfolios of loans and deposits to one counterparty is not well substantiated, particularly for banks having legal opinions confirming the enforceability of the on- balance sheet netting of loans and deposits on a portfolio basis.
- (iii) For banks adopting the foundation IRB approach with a standard maturity, we would recommend that maturity mismatches between loans and deposits be treated as per our proposals laid out below. For banks opting for maturity varying capital requirements, the treatment of maturity mismatches suggested by the Committee in the advanced IRB approach is appropriate.
- (iv) Finally, cross-affiliate netting should be allowed where cross-guarantees are in place.

Maturity mismatches

- (i) Definition of maturity : behavioural maturities should be recognised subject to regulatory review (see previous comments at Section II. 2).
- (ii) Standard maturity : in the foundation IRB setting, for banks unwilling to calculate maturity dependent capital requirements, the standard maturity used should be the “average economic maturity” (see Section II.2 above).
- (iii) Treatment of maturity mismatches :
ISDA supports the proposed treatment of maturity mismatches in the advanced IRB approach. For banks using a standard maturity, as defined above, a sliding scale approach of the form proposed by the Committee is appropriate, provided that regulators refrain from charging forward credit risk where they would not charge unhedged risk. If the maturity adjustment factor in the IRB function is capped at 7 years, so should the sliding scale approach. It should be noted that maturity matched protection of a duration inferior to one year should be recognised for regulatory purposes.
Finally, there should be no maturity mismatch charge on collateralised transactions where there is an obligation on the part of the collateral provider to substitute a new security for that having matured.

Specific risk offsets in the trading book

ISDA strongly questions the rationale for setting at 80% the specific risk offset obtained where a credit default swap is used to mitigate credit risk in the trading book. As demonstrated in Annex 5, if the spread widens on a hedged trading book position, resulting in a fall in market value, the value of protection bought will increase in line with the decrease in the underlying’s Mark To Market. If the underlying was sold and spreads narrow, the loss made would be offset by simultaneously selling protection. ISDA believes that the credit default swaps market is now sufficiently liquid to ensure that these instruments can be traded when needed. The default swaps market is growing rapidly which suggests that liquidity will continue to develop strongly in the run up to the implementation of the New Accord in 2004.

In the standardised specific risk rules, rather than approximating the benefit of hedging by applying an arbitrary percentage, we would suggest representing credit risk positions as FRNs, characterised by an obligor (probability of default), a maturity and a ranking in liquidation (loss given default). Both the underlying and the default swap would be translated into FRN equivalents according to their sensitivity to credit spreads. A change in credit spreads in the underlying would immediately lead to a re-adjustment in the default swap’s and the underlying asset’s MTM, creating a net specific risk position which would then attract a charge. This treatment has the benefit of extending naturally to the treatment of basket products such as synthetic securitisations.

In cases of temporal mismatch, a similar risk analysis suggests that giving no credit for hedging is far from the economic reality. As mentioned at Section I. 5. above, ISDA is undertaking separate work on the treatment of specific risk in the trading book and hopes to report back to the Committee in due course.

For banks modelling specific risk, the model recognition process should include a review of the impact of specific risk hedging.

Synthetic CLO-CBOs and securitisation

The Committee's proposals appear to reflect that it believes the primary motivation for securitisation is *capital arbitrage*. However we believe that the benefits of asset securitisation are that it promotes better *capital management* by:

- creating the freedom to exchange financial assets amongst market participants, thus enhancing liquidity, both within a bank's balance sheet and externally;
- transferring credit and operational risk to those institutions best able to understand and manage it;
- enabling banks to optimise the risk-return profile of a portfolio and to manage concentration and diversification accordingly;
- diversifying issuers' sources of capital, allowing an issuer to minimise funding costs, even in a deteriorating environment, reducing its dependency on traditional financing routes;
- focusing an institution's attention on the quality of its loan origination and administration process, so that it has appropriate systems, documentation and organisational structure to manage its asset portfolio;
- stimulating functional specialisation by separating origination, administration and funding which maximises the efficiency, flexibility and responsiveness of the financial system.

As currently structured the Committee's proposals on securitisation will provide a disincentive for financial institutions to manage their risk via asset backed or synthetic structures. Our interpretation of the proposals is that substantially more capital will be allocated to ABS transactions.

Securitised Assets	Nominal	Basel 1988 100% RWA	Basel 1988 50% RWA	Standardised	FIRB	FIRB2	FIRB3	AIRB
AAA	1,000,000,000	80,000,000	40,000,000	23,750,000	33,425,832	16,712,916	8,356,458	18,803,703
AA	1,000,000,000	80,000,000	40,000,000	23,750,000	39,735,110	19,867,555	9,933,778	21,754,485
A	1,000,000,000	80,000,000	40,000,000	59,375,000	65,095,738	32,547,889	16,237,935	32,769,692
BBB	1,000,000,000	80,000,000	40,000,000	118,750,000	149,820,474	74,910,237	37,455,119	129,374,929
BB	1,000,000,000	80,000,000	40,000,000	178,125,000	334,638,364	250,975,773	187,319,182	373,780,156

Assumptions Standardised RWs	IRBPD	FIRB1 LGD	ABS FIRB2 LGD	MBS FIRB3 LGD	AIRB LGD	AIRB Maturity
20%	3 bps	100%	50%	25%	25%	7 yrs
20%	4 bps	100%	50%	25%	25%	7 yrs
50%	9 bps	100%	50%	25%	25%	7 yrs
100%	34 bps	100%	50%	25%	50%	7 yrs
150%	120 bps	100%	75%	50%	75%	7 yrs

Notes:

A 20% Blanket Operational Risk charge is included

IRB PDs are indicative only and would be different for each institution

FIRB1 has LGDs set to 100% as per current proposals

FIRB2 has LGDs set at more realistic levels as per BBA response guidelines
FIRB3 has LGDs set at more realistic levels for MBS
AIRB LGD set to indicative levels (ie not substantiated by any data)
AIRB Maturity assumed at maximum of 7 yrs, given the average legal duration would be expected to be around this level

Securitisation potentially transfers some types of risk out of the banking system whilst allowing those risks which banks manage best to be retained in it, bringing a net increase in systemic stability. The imposition of further capital to the ABS process would act as a brake on this beneficial risk transfer process.

In the following we differentiate between cash securitisation and synthetic securitisation.

(i) Cash securitisation :

A general comment

Where risk is transferred out of the banking system there should be an overall reduction in the capital required. If extra capital is required in one area, perhaps because of the nature of a particular role played by a bank, then the amount of capital required in other areas should be concomitantly reduced so that no extra capital is added for the banking system.

We are uncomfortable with a differential approach being applied dependent on whether the bank is an originator or investor. We believe the Committee should focus on the nature of the risk retained or transferred and the concomitant amount of capital that is required or released, rather than the status of the owner of the ABS. An example of inconsistency in the approach taken by the Committee may be found in the treatment of second loss positions, where the availability of the “direct credit substitute” route is subordinated to the existence of significant first loss protection. This creates a divergence in capital requirements between originators and third party investors and artificially encourages issuing banks to sell second loss positions.

Standardised Approach

Treatment of originating banks :

Minimum capital requirements for liquidity facilities :

A 20% credit conversion factor for liquidity facilities has been proposed. We believe this is too high, given that these facilities are extremely rarely drawn. If a facility is a pure liquidity facility, with reimbursement of the cash advance ranking ahead of payments to investors, there should be no need for any incremental capital to be allocated against it. We suggest that facilities should be regarded as pure liquidity facilities if:

- drawings
 - can only be made to cover cash flow timing differences, not to support a structure’s financial condition;
 - benefit from the ABS security package.
- reimbursement of liquidity advances
 - is made from portfolio cash flow received immediately after the relevant advance;
 - is not subordinated to investors’ cash flow.

The identification of the nature of the liquidity facility would be made by the liquidity provider but subject to supervisory review.

However if the Committee does decide to impose a credit conversion factor, 10% would be more appropriate. Liquidity facilities are structured to prevent the funding of non-performing assets through the inclusion of asset quality tests.

We recognise that a credit conversion factor should be allocated to liquidity facilities with maturities in excess of one year and believe that 20% is an appropriate level. This factor should not be applied however when liquidity facilities are subject to a genuine annual review at which the non-extension of the facility is a possible outcome.

Furthermore we seek clarification of whether the capital allocated to liquidity facilities will be a function of both the credit conversion factor *and* the rating-dependent weighting. This currently is unclear but we believe that this would be consistent with the Committee's general approach. Where it is deemed appropriate to allocate capital against these facilities the credit risk weighting used should correspond to the *average* quality of the underlying assets, based on the originator's knowledge of the assets that it is removing from its balance sheet.

Minimum operational requirements for revolving securitisations with early amortisation features :

The Committee plans to apply a minimum 10% credit conversion factor to the underlying risk weighting of the off-balance sheet asset pool in revolving transactions with early amortisation features.

We consider that a capital charge (of 10%) may only be appropriate where the structure allows investors' interests to be amortised at a greater rate than the amortisation of the underlying asset pool.

In practice, depending on asset type (e.g. term and mortgage loans), revolving transactions already carry an implicit additional capital charge, as credit enhancement levels (as a proxy for capital) are generally greater for these transactions than for amortising transactions where the initial pool remains.

At the very least, the Committee may wish to develop different approaches, depending on the underlying asset class.

Moreover, the Consultative Document seems to indicate that non-economic triggers, such as the breach of a performance covenant, perhaps in relation to the originator failing to provide support services, do not give rise to risks with which the Committee is concerned. We concur with this, as the credit quality of the underlying assets is only compromised when an economic covenant is breached. However, we seek confirmation from the Committee that this is its view.

Holdings of unrated or residual interests :

Originating banks holding unrated or residual interests should be subject to the low-level recourse rules, i.e. they should hold the lesser of dollar for dollar capital for the amount of the retained interest or the amount of capital required for the underlying pool, taking account of any gains/losses on sale resulting from the transaction²⁹.

Treatment for Investing Banks

We welcome the Committee's suggestion that external ratings be used by investing banks to assess capital requirements.

However, the Committee has assigned higher risk weightings for asset securitisations than for comparably rated corporates. This contradicts empirical data gathered by rating agencies, which demonstrate a lower default rate and downgrade risk in ABSs :

- Moody's shows no defaults in its historical database from 1985 to the present, regardless of the rating;
- S&P statistics include a single investment grade default; at BB level, defaults have occurred, but at a rate approximately ½ that of corporate BB exposures.
- Investment grade transactions show approximately 1/3 the downgrade risk of corporate transactions over a five-year timeframe, and sub-investment grade transactions show approximately 80% of the downgrade risk.

²⁹ In a framework where market risk is ignored in the banking book, only such gains/losses relating to spread moves would be relevant.

In view of the highly positive experience in the asset securitisation market, ISDA would urge the Committee to reconsider its risk weights assumptions. A parallel approach to corporates, although conservative, could be applied.

We also welcome the opportunity to use the 'look-through' approach for unrated securities but see no reason why this approach should not further be applied to mezzanine or subordinated tranches. In the case of junior tranches we recommend that a risk weighting according to the worst rating in the pool be used, whereas in the case of senior tranches the average risk weighting of the assets in the underlying pool should be used. The weighting should also reflect, as appropriate (see Section II above), the difference between retail and corporate assets.

Securitisation under IRB

There should be a real incentive to move from the standardised approach to an IRB approach. This should be provided by a tangible reduction in the amount of capital allocated to ABS structures.

Foundation Approach

Treatment for issuing banks

We note that the Committee is seeking to follow the same economic logic in the IRB approach as used in the Standardised approach. Our fundamental premise is that capital set against an ABS should be no higher than that which would be allocated against the underlying assets were they held on balance sheet.

We think that the deduction of retained first loss from capital, regardless of the IRB capital requirement that would otherwise be assessed against the underlying portfolio, is risk insensitive.

The definition of retained first loss as the aggregate of all originator-retained tranches up to the first tranche transferred to a third party could be a grossly exaggerated measure of risk. The decision as to retention or transfer of a tranche is often determined by funding cost rather than credit concerns. This inconsistency is even more marked for externally rated tranches retained by the originator and deducted one for one from capital as part of the retained first loss treatment.

Furthermore, the Foundation Formulaic Approach, which requires the IRB capital charge for a pool of assets to be used as a floor in the calculation of the capital attaching to the related securitisation tranches, incorrectly assumes a one-for-one relationship between : (i) the IRB capital requirement for the pool held on the originator's balance sheet (including granularity adjustment); and (ii) the IRB capital requirement for the pool to be securitised, viewed in isolation.

The Formulaic Approach is hence particularly punitive :

- It requires greater capital to be held against the aggregate of all securitised tranches than would be required if the pool was held on balance sheet;
- The floor IRB capital requirement is onerous since the granularity of the originator's book is not taken into account.

We therefore recommend that individual securitisation tranches be weighted according to each tranche's PD and LGD profile and that this approach should be applied to all tranches, regardless of whether they are rated or subordinated or not.

To not adopt this approach would require different amounts of capital to be allocated to a particular risk dependent on whether it remained in the hands of the issuer or not. This would be inconsistent.

Treatment for investing banks

The 100% LGD assumption is far too cautious. It contrasts with the Foundation approach for corporate loans under which LGDs of 50% or 75% are proposed for senior and subordinated exposures. Statistics compiled by ECAs do not substantiate applying higher LGD assumptions on ABS tranches. We would

therefore recommend that regulators apply the same approach to those tranches as suggested for corporate exposures.

Banks should further be able to internally rate tranches, either using their own models (which would be subject to supervisory review) or by using rating agency models and adopting their correlation assumptions (subject to disclosure of the necessary information by the originating bank).

We recommend that in cases where the originator of the ABS is using the IRB approach and chooses to disclose to investors (perhaps by using a calculation agent – perhaps a qualified ECAI) there is merit in allowing the investor to use the originator's IRB weighting.

Advanced approach

Under the advanced approach an investing bank should be able to use its own LGD data or, if the universe of a bank's own record of LGD data is not sufficient, pooled data. As a pre-requisite, banks would have to make sure that the pooled data is representative of assets involved in the transaction.

(ii) Synthetic securitisation

We look forward to reviewing the Committee's further paper on synthetic securitisations and are supportive of its proposal that there be a standardised approach for synthetics, subject to appropriate operational requirements.

There should not be a material regulatory distinction between the amount of capital provided for a typical synthetic securitisation transaction and that provided for a cash securitisation. In particular, the treatment of investors in synthetic CLO-CBOs should be no different from that retained for investors in cash securitisations. Hence the following recommendations focus on the capital treatment of issuing banks.

The Committee discusses the possibility of restricting the size of any retained first loss position to the amount of the expected loss, an approach that is not proposed for conventional securitisations (nor should it be). The first loss portion cannot be limited in this way, as the rating agencies typically require a higher threshold in line with their requirements in cash transactions. Furthermore the capital charge associated with the retention of a first loss position already makes this requirement redundant.

In general we believe that the framework should concentrate purely on the amount of risk transferred and allocate appropriate capital charges against retained positions rather than trying to regulate the degree of risk that may be retained and under what circumstances.

Standardised approach :

In November 1999 the US Office of the Comptroller of the Currency and the Federal Reserve issued guidelines dealing specifically with Synthetic Securitisation. With some modifications this publication could form the basis for the regulatory capital treatment of Synthetic Securitisation transactions within the Standardised Approach.

The proposal addresses two important themes that are also discussed in the Basel Consultative Document:

1. Can there be capital relief on the most senior tranche (third loss) without hedging it?
2. What is the appropriate capital charge for a synthetic securitisation *provided that* the most senior tranche is hedged with a credit default swap?

Capital relief on the most senior tranche without hedging

The OCC/Fed proposal provides for the possibility for a sponsoring bank to obtain regulatory capital relief on the most senior tranche (senior AAA) of a Synthetic Securitisation transaction without entering into a credit default swap with an OECD bank. If the bank meets certain stringent minimum requirements, it may assign the unhedged senior position to the 20 per cent risk-weighted category. These conditions are :

- Transfer of virtually all the risk to third parties;
- Ability to evaluate the amount of credit risk remaining on the banking book and provide adequate capital support;
- Adequate public disclosure of the risk profile and capital adequacy of such transactions.

We believe that these requirements are very strict. In particular, Condition 1 - the requirement that virtually all of the credit risk needs to be transferred to third parties - needs to be relaxed as first loss positions are to be deducted from capital anyway. After relaxing this requirement, the OCC/Fed approach may form the basis for the capital treatment of Synthetic Securitisation transactions in which the most senior position is not hedged.

Capital treatment of a Synthetic Securitisation transaction after hedging the most senior tranche

Equally important is the capital requirement for the overall Synthetic Securitisation transaction that is proposed in the OCC/Fed paper. The regulators assume a typical structure, in which a first loss is retained, a second loss position is collateralised with Treasuries (or presumably other 0% risk-weighted assets) and the most senior third loss position is hedged using a credit default swap with an OECD bank.

In this type of structure, we would propose deducting the first loss from capital and applying a counterparty risk charge on the third loss. This approach is in line with our recommendation regarding the treatment of joint default risk for single name credit default swaps, assuming that the third loss protection provider is rated investment grade (see Section III. 2. Above).

Regulatory treatment under IRB :

We do not believe that originators should be allowed only to retain risk in the form of first loss and/or super senior tranches. More flexibility should be provided for, enabling originating institutions to retain any level of risk on the underlying portfolio, provided that the amount of capital held in relation to this risk is adequate. This would notably mean that if the institution transferred no risk at all, then its capital requirement should equal that applying on the unhedged portfolio.

Where transactions are tranced using ECAI models, we believe that, regardless of whether or not the tranches are effectively rated, the implied capital requirement on the liabilities side of the structure will be at least equal to that on the unhedged portfolio. This is because the approach taken to tranching by the agencies includes correlation assumptions which are at least as conservative as those implied in the IRB function.

We would therefore suggest that capital be held by originating banks as a function of the IRB charge on the tranches retained, capped at the capital charge on the unhedged portfolio.

As per our comments on cash securitisation above, first loss should not systematically be deducted.

(iii) Implicit and residual risks

We do not share the Committee's concern about implicit and residual risks associated with asset securitisation.

Where a bank repurchases or substitutes assets in an ABS issue, it takes a commercially justifiable decision, weighing up the losses on the repurchased assets against the business benefits of enabling the issuing vehicle to continue in business. A firm should be permitted to buy back assets as long as it does so at the market price.

We are not completely comfortable with the re-characterisation of all an institution's securitised assets as being on balance sheet following a regulator's determination that implicit support has been provided. The 'two strikes and you are out' approach is too draconian. It may even prove unworkable were the offending bank to come close to failure because of capital inadequacy, posing significant moral hazard for regulators. It should be modified to:

- prevent a miscreant bank removing further assets from the balance sheet for a fixed period (say one year), but
- being allowed to retain off balance sheet status for those ABS structures for which it has not provided support.

The Basel Committee should further refrain from imposing an ex-ante minimum charge on all issuing banks as this would fail to deter inappropriate practice, and would significantly hinder the development of the ABS market.

It should also be noted that implicit recourse may be addressed through Pillars II and III of the Accord:

Pillar II (Supervisory review)

Banks must be allowed to evaluate the risks of individual transactions using their own risk management techniques, which would be subject to appraisal by a firm's local regulator.

Pillar III (Market Disclosure)

Through the disclosure of appropriate information about ABSs to market participants, investors will be able to scrutinise a firm's behaviour, ensuring that it continues to act prudently.

SECTION IV – OPERATIONAL RISK

1- INTRODUCTION

ISDA welcomes the progress made towards a clearer definition of operational risk and its treatment, since the publication of the Basel Committee's and European Commission's first consultative papers in 1999. ISDA considers that dialogue between supervisors and the industry has been helpful in achieving this progress and that further and continuing dialogue – including formal, scheduled review of the impact of the rules for operational risk – will be essential in order to ensure that the primary and shared objective of genuine risk-sensitivity is attained.

ISDA supports an essentially quantitative approach that incorporates qualitative factors. The work in which ISDA has been involved on operational risk over a number of years³⁰ leads it to state that the industry takes the management of operational risk very seriously and welcomes the current regulatory attention, while remaining concerned to ensure that any charge is proportionate and effective.

In this respect ISDA believes that the issue of calibration of capital charges merits particular attention, as regards:

- 1) the level of capital required for operational risk relative to other risks;
- 2) 'double-counting' in respect of certain operational risks;
- 3) the scaling of the charge in relation to the size of the firm (a capital allocation issue);
- 4) recognition of diversification effects; and
- 5) recognition of earnings, risk mitigation and other non-capital defences.

Taking these points in order:

- 1) A level of 20% of capital allocated to operational risk will generally be too high for firms, and the empirical evidence from a number of major firms is that this will be considerably too high. ISDA would suggest that this figure be used as a basis for discussion, rather than as a conclusion, and that the effects on all types of firm potentially affected by the rules be analysed before any such conclusion is made.
- 2) The negative effect of any charge calibrated at this level is compounded by the fact that, through mechanisms such as the 'W' factor for certain credit risk mitigation techniques and the operational requirements embedded in the Accord, firms are effectively being asked to pay twice for operational risk.
- 3) At the same time on the issue of allocation, by charging firms in 1:1 linear proportion to the size of an underlying activity, larger firms are significantly overcharged with respect to levels of risk, with no justification given.
- 4) Nor is any allowance made for risk diversification, either within operational risk or between operational risk and market/credit risk. (This too will typically hit large firms especially hard.) Both forms of diversification are a significant benefit to individual firms and the financial system as a whole and in ISDA's view it is appropriate that they should be recognised and encouraged.
- 5) Finally, it is widely recognised within financial services that many forms of operational loss will be absorbed by earnings or otherwise costed. ISDA welcomes the reference to this debate contained in the second Basel consultative paper and encourages the Committee to pursue this line of discussion.

Overall, ISDA urges supervisors to bear in mind the risk of creating an uneven effect through the implementation of operational risk charges, between:

- i) financial services versus other sectors of the economy;
- ii) larger versus smaller firms; and
- iii) relatively specialised firms versus universal banks.

In this respect, it is important to note that implementation in the European Union may have a significant impact on investment firms and small institutions. Specialist firms in roles such as clearing

³⁰ ISDA was one of three sponsoring institutions behind the study 'Operational Risk – The Next Frontier'. Published in December 1999. In addition to a detailed response to the first round of consultation (published in February 2000), ISDA published the 'Operational Risk Regulatory Approach Discussion Paper' in September 2000.

and settlement are liable to see their capital requirements multiplied several times, which could ultimately have a destabilising effect. ISDA believes that great care needs to be taken to further test all proposals to ensure the framework is proportionate and effective across the whole universe of firms to which it will apply.

For the details of ISDA's view on disclosures relating to operational risk, please see the section of this response on Pillar III. Overall, ISDA urges caution in proceeding. Specifically, it notes that non-listed firms will face a lesser requirement in terms of public disclosure than listed firms and considers that this fact should be borne in mind in framing disclosure requirements for operational risk.

2- DIALOGUE

A number of issues have been clarified over the past 18 months as a result of dialogue between industry and regulators, including the definition of operational risk and the related question of the appropriate risks to target. (This issue is covered in more detail below.) ISDA remains convinced that, with the quantification of operational risk still evolving, it is essential for the overall good of the industry that detailed dialogue continues, not just up to implementation of the present Accord but beyond it, the latter based on firm and scheduled plans for formal review of the charge and its impact. These plans should take account of the time it takes to amend regulation in various jurisdictions, notably the European Union, should this prove necessary.

Ideally, in addition to continuing dialogue over the coming months, which should take into account implementation issues, a formal and thorough review of the impact of the new rules on operational risk should begin no later than two years after the implementation the new Accord, which would currently imply 2006, with any alterations that may prove necessary being agreed promptly (which would probably mean within nine months of commencement of the review, ie, by the end of 2006).

The current proposals represent a laudable attempt by regulators to structure a charge based on industry developments. It is, however, a first attempt and the industry still sees a danger of adopting too prescriptive an approach at this stage, with the risk of excessive regulatory burden and/or intrusion. As in its response to the first round of consultation, ISDA also wishes to stress the diversity of developing practice in the industry, and the importance of recognising this fact in the regulatory approach to operational risk. Flexibility would therefore seem essential, in order to avoid a situation where the charge was ineffective or else introduced unwelcome and/or unintended effects. ISDA also believes that it is necessary to state explicitly the standard of regulatory soundness that is being targeted through the introduction of a capital charge for operational risk, including but not limited to the time horizon and confidence level (with the relevance that has to the determination of the gamma factor in Stage III). It should also be made clear precisely what the broader objectives ~~are, in terms~~ of enhanced management of operational risk are.

ISDA encourages the Basel Committee to proceed with publication of a further consultative paper, as well as a paper on sound practices for the management of operational risk.

3- THE EVOLUTIONARY APPROACH

Aside from the calibration issue, the way the capital charge is structured unnecessarily limits the potential for risk-sensitivity. The three-stage evolution was well flagged in the run-up to publication of the second consultative papers, based on the principle of incentives for banks to move along the continuum. This principle is consistent with the overall thrust of the new Accord and is welcome. ISDA continues to believe however that, in order to offer a real incentive to advance towards more precise measurement of operational losses that is aligned with developing internal practice with regards to economic capital, it is vital to include a fourth, 'Loss Distribution Approach' stage that would be available to firms as soon as they meet relevant criteria. This stage should be available without necessarily passing through Stage III and without any 'floor'.

One of the key benefits of including a truly risk-sensitive stage is to reduce the danger of disproportionate impact on certain firms or types of firm. Inclusion of the Loss Distribution Approach is especially important, since the first two stages are not risk-sensitive, based as they are on crude and unreliable indicators of operational risk. Stage III – the 'Internal Measurement Approach' – meanwhile,

remains untested and subject to further work (and is, in any case, subject to an as yet unspecified floor, which has the potential to seriously reduce the attraction for firms to move to this stage). Furthermore, applying Stage III requires complex infrastructure which may not correspond to the way individual firms are organised or intend to structure themselves.

On this same point regarding Stage IV, an integral part of the current three-stage evolution is the criteria that firms must meet in order to be able to progress from one stage to the next. These go some way to encapsulating factors other than the frequency/severity of losses. But, in the interests of capturing risk factors more fully and accurately ‘from the bottom up’, it is appropriate to recognise the potential for true internal modelling. Similarly, and in line with the approach to credit risk in the proposed Accord, it is appropriate to recognise risk mitigation (including risk transfer) throughout the evolutionary spectrum, again subject to the satisfaction of relevant criteria.

More generally, ISDA believes that the incentives to move forward a stage need to be unambiguous and significant, otherwise the Accord will have failed in its objective of incentivising better management of operational risk. Incentives that are small and/or unclear will inevitably reduce the willingness of boards of directors to make the investment necessary to progress to the more advanced stages envisaged under the Accord. This principle suggests that there should be a significant gradient from Stages I to III of the continuum, as well as a firm commitment to inclusion of a Loss Distribution Approach.

4- CALIBRATION

The figure of 20% of overall capital is floated as a reasonable target amount (for Stage II) for operational risk regulatory capital, which we note is meant to represent a *minimum* requirement. ISDA does not support this figure, mainly because it is based on a very small body of evidence that was subject to many caveats.

Figures for capital that have been attributed to individual firms or industry studies were based on widely varying definitions of operational risk and did not, in any case, purely represent amounts designed to absorb loss. Excess capital simply cannot be equated with operational risk allocations. In many instances, rather than any calculated *requirement*, the figures quoted represented nothing more than residual amounts of economic capital, held for a variety of contingencies (including certain ‘business’ and ‘strategic’ risks). And, to the extent that amounts may have been calculated as suitable to absorb operational loss as defined in the consultative papers, they were calculated using methodologies that were known at the time to be crude and conservative, with no reference as to confidence levels or time horizons. Also, such dispersion was observed around the figure of 20% as to make it statistically invalid. It is therefore not possible to infer that the figure of 20% represents the level of economic capital assigned to operational risk. Moreover, more recent studies have indicated significantly lower levels of economic capital allocated to operational risk, by as much as an order of magnitude.

The fact that this average number was inflated by capital held for contingencies other than operational loss in itself suggests that it is too high. As relatively crude calculations, they will also tend to err on the conservative side. Even in a regulatory environment where more advanced approaches (ie, Stage III and potentially Stage IV) delivered a lower capital charge, the starting figure would be important. (Consider, for instance, those firms for which the costs of moving beyond Stage I/II outweighed the benefits.) As a practical matter, it seems far from clear at this juncture that firms will benefit from reductions of a similar magnitude (ie, 20%) in their credit risk charges, and this outcome would make the operational risk charge effectively an increase in capital requirements³¹. This increase would be particularly great for any investment firms affected by the rules, as such firms are unlikely to benefit meaningfully from changes to the credit risk rules. Such factors underline the importance of basing any charge on true risk numbers.

Setting operational risk charges unrealistically high would seriously weaken the incentive to reduce levels of risk. And it would in some instances interfere with the legitimate business decisions a firm

³¹ As it is proposed that some aspects of the capital treatment of credit risk be phased in, it would seem entirely appropriate that the operational risk charges also be introduced in a phased manner.

could make. Thus, given that gross income is proposed as the indicator under the Basic Indicator (Stage I) Approach, the more high-margin business a firm does, the higher the charge it would incur.

The effects of an improperly calibrated charge are magnified if that charge amounts to double (or triple) counting. As argued elsewhere in this paper, a particular instance of this is the inclusion of a 'W' factor in relation to credit risk mitigation. Operational losses are explicitly captured in the capital charge targeted on this risk and it is inappropriate to capture these a second time elsewhere in the Accord. For some firms, any such loss is captured in credit data and there is even the risk of triple counting for the purposes of regulatory capital.

5- LINEARITY

One of the less obvious but nonetheless undeniable and potentially damaging effects of the currently proposed structure of capital charges is that large firms are penalised relative to smaller firms. As analysed in a separate paper [Annex 6], the 1:1 linear scaling of the charge in all three of the proposed stages effectively entails a disincentive to grow and to diversify. Diversification benefits are lacking in many aspects of the Accord and this extends to the independence of operational risks that will occur when a firm is engaged in various types of business³². At the same time, as discussed in Annex 6, there are many reasons why a large firm will experience a proportionately smaller amount of loss, and will in addition have more means to withstand that loss without calling on capital (most obviously because of strength and diversification of earnings). Empirical analysis suggests that, instead of a 1:1 function, a non-linear scaling (increasing losses by the power of one-quarter, for every unit increase in the size of a firm) would be appropriate.

Calibration of the charge should not be simplified to the extent that it ignores this important allocation issue. It should be possible to define a gradient from Stages I to III that is based on a medium-sized institution and scale up or down for size accordingly (using a non-linear function).

6- OTHER CALIBRATION ISSUES

As regards recognition of the effects of earnings, this has the advantage of matching conceptually the type of loss (ie, routine or high-frequency-low-impact loss) for which there is most data and, just as importantly, data stability. (The biggest quantitative challenges in the operational risk field – including those of data availability – clearly relate to 'unexpected' [ie, above average] losses.) Where a firm did not properly price expected operational loss, this could be dealt with through a combination of Pillars II and III. Where firms do price it, there is no need to interfere with risk management procedures by introducing capital requirements.

ISDA believes that, whereas it may be possible to agree the framework for the treatment of operational risk in the short term (including the formulae that may apply in the various stages), it is desirable to factor in data from the current and future QISs in order to ensure a satisfactory calibration, particularly in relation to the alpha/beta/gamma factors. If it proves necessary to finalise the overall calibration in the short term, then it is doubly important that this is not set at a level that is damagingly high.

7- RISK TRANSFER

The risk transfer market is evolving steadily and does already exist in relation to many forms of operational risk, as part of a broader discipline of risk mitigation (including robust outsourcing). Regulators have the opportunity to contribute to its development by setting the standards to which techniques such as insurance of operational risk should adhere. As with credit risk, the *principle* of risk mitigation should not in itself be contentious; and, given the operational standards required of firms in relation to the management of operational risk at all stages of the regulatory continuum, risk transfer need not entail any greater amount of 'moral hazard' than holding capital would. In fact, the involvement of insurance markets is likely to act as a supplementary source of discipline and data, which can only reinforce industry and regulatory efforts to address operational risk.

³² Diversification benefits, across both risk types and business lines, could still be set conservatively, without resorting to the unrealistic assumption that correlation will invariably be 1.

ISDA believes that a prescriptive approach is justified here, because regulators would be setting general standards rather than promoting specific approaches or products, just as they have done in the past in relation to netting. And, given that regulators are to some extent forcing the pace of the development of quantitative operational risk management, it is only fair and consistent to encourage the development of associated techniques at the same time. With regards to the development of specific products, the industry recognises its responsibility.

The possible standards are already the subject of widespread public discussion and such concerns as have been expressed about risk-transfer products (including questions of contingent credit risk) can, with appropriate product structuring, be overcome. ISDA cannot stress strongly enough that, irrespective of the merits of any individual product, there is no reason why the *principle* of risk transfer should not be recognised. It should therefore be possible for a firm to achieve a reduction in its Pillar 1 charge for operational risk by use of products that satisfy clearly enunciated and transparent standards.

8- RISK QUANTIFICATION

Many of the problems associated with calibrating a charge would be lessened if it were open to firms to determine their own risk profiles. ISDA welcomes the suggestion of a Risk Profile Index designed to adjust a firm's capital charge to reflect its performance relative to the industry average. It must, however, be noted that this is an untested and relatively complex mechanism to adjust an untested and relatively complex approach (ie, Stage III). Relying on an industry average as a starting point is, in any case, clearly a second-best approach, particularly in relation to operational risk. Internally specified approaches offer the best hope of capturing the true risk profile of a firm, including those 'control' and 'culture' factors which are less easy to measure directly and yet which clearly contribute to the overall management of operational risk. In these circumstances, and in order to offer a true incentive for firms to optimise their quantitative management of operational risk, it would be appropriate for the Committee to make loss distribution methodologies available, subject to satisfaction of appropriate criteria. Such an approach should be available without any 'floor', as this represents an artificial constraint on risk alignment.

The Loss Distribution Approach ('Stage IV') offers the best hope of providing a true (ie, bottom-up) picture of operational loss, which remains the shared end-objective of regulators and industry. The standards for the robustness of data used by banks in such an approach can be derived relatively easily from those developed for other areas of risk management. Also, because such an approach is best aligned with developing risk management practice, it should be made possible to progress to this fourth stage without necessarily having to pass through the prescriptive yet untested Internal Measurement [Stage III] Approach.

While ISDA supports continuing work on Stage III, maintaining it *as an end-state* is flawed because the gamma factor that will form an essential element of this approach is envisaged as being constant over time and across firms, which is highly unlikely to be representative of reality³³. (It should be noted that Stage III is not strictly an *internal* measure, as it relies on external data and ISDA members caution against reliance on external data in what is meant to be an internally based approach.) Moreover, Stage III as currently proposed will undoubtedly pose major organisational and technology challenges to firms, with no guarantee that Stage III will prove appropriate in the longer term. This being so, it seems to ISDA that there is a strong case for not only a) keeping Stage IV in the evolutionary framework, but also b) including a simplified version of Stage III – the exact degree of simplification being something for discussion between industry and regulators in the remaining available time. The purpose of this simplification would be to ensure development that is aligned to the greatest extent possible with the true end-objective of a Loss Distribution Approach.

ISDA wishes to stress that it has no desire for unnecessary delay in the introduction of a regime for operational risk; nor does it seek to completely restructure the evolutionary approach. It does, however, make a distinction between the overall framework and the functional forms used within that framework. Given that these functional forms are untested and that quantitative operational risk management is evolving, it would seem clear that it is in the best common interest of industry and regulators that this state of affairs is formally recognised, with scope a) to change the functional form

³³ The gamma for an individual firm would in practice depend on measures taken in relation to expected loss, unexpected loss or both.

(including choice of indicators) and b) to recognise firms' progress in the management of operational risk. This is preferable to waiting till the next major revision of the Accord, which would appear unlikely to occur soon after implementation.

Finally, with regards to the IMA [Stage III], ISDA notes the strong concerns of some member firms regarding the appropriateness of deriving an unexpected loss number from levels of expected loss in the manner proposed and questions the stability of such a charge derived from historical losses. This issue should be addressed during testing and appropriate modifications made.

9- QUALITATIVE FACTORS

Closely related to the quantification of operational risk is the recognition of qualitative factors. ISDA views these as an indispensable forward-looking component of the regulatory treatment of operational risk, and developed this thinking in its September 2000 Discussion Paper, 'Operational Risk Regulatory Approach'. As stated in that paper:

"There is significant concern that a purely quantitative approach could enable institutions with poor operational risk management processes and controls, but with access to internal loss event data, to achieve a lower capital charge than institutions with stronger risk management processes but no access to internal loss event data.

There is also concern about the method of calculation of operational risk capital for an institution that has in the recent past experienced serious loss but where management has reacted and strengthened the control environment in that area, and consequently reduced the likelihood of recurrence, or where the probability of loss had been very low. In such a situation, a purely quantitative approach would cause an institution to carry an increased capital charge with no account taken of the improved control environment.

In order to address such issues this [paper] seeks to identify *qualitative* criteria which could be integrated into the process for determining the regulatory capital requirement for operational risk."

ISDA continues to believe that it is essential to incorporate qualitative factors, and that if possible this should be done within any stage of the evolution, and not just as a set of threshold criteria for moving up a stage or stages. ISDA notes that a strand of industry research and development continues on approaches based significantly on qualitative factors and, given that debate on regulatory treatment of operational risk is still relatively new, that it would be appropriate to take this fact into account in formulating final proposals. ISDA would, in any case, welcome further dialogue on how best to incorporate qualitative factors and the implications of doing so.

10- DEFINITION

As stated above, considerable progress has clearly been made on the more precise targeting of operational risk. Thus, business and strategic risk have rightly been excluded. Challenges do however remain. It is of some concern that firms will have to map business lines and risks to matrices intended to represent an 'average firm', irrespective of whether those firms may have effective alternative approaches to the categorisation of the risks to which they are exposed.

ISDA welcomes the more precise regulatory definition of operational risk. It does however urge the Committee to follow this work through to its logical conclusion. The inclusion of a broad and loosely defined category of 'latent losses' does not support a more precise measurement of risk, which is something the Committee has rightly identified as a key concern, and such losses should not therefore be included in the scope of the charge. In the context of the continuing work on the Internal Measurement Approach, ISDA sees the focused targeting of operational risk as an uncompleted yet fundamental task, with issues of scope and overlap particularly worthy of attention.

In ISDA's opinion, it is important that the charge continues to be made more precise. Focusing on direct loss will aid data collection and excludes more nebulous items such as opportunity cost or 'near misses'. Nor should loss data include investments made to improve controls or processes. Only those exogenous (or 'out-of-pocket') 'costs-to-fix' which are inevitable and related to loss *events* should be included. This approach is consistent with that adopted for credit and market risk, making it easier to establish a satisfactory boundary between these and operational risk.

On the latter point, it is important that firms should not be forced to reclassify existing data, which may capture losses perfectly adequately, even though these are not labelled as the new Accord would suggest they might be. A key topic for continuing future dialogue should be the borderline between operational risk on the one hand and credit/market risk on the other. The key issue at this stage of the development of operational risk management is risk identification – not classification.

11- SUMMARY

In conclusion, ISDA urges the Basel Committee and the European authorities to let true risk-sensitivity be the test in devising a capital treatment for operational risk, with important consequences for the process of developing that treatment. ISDA notes the continuing concern that, while a charge will undoubtedly spur certain activities among firms, this could push the development of operational risk management in a direction it might not naturally have taken, and in any case will raise potential competitive inequalities between financial institutions and those unregulated firms which may compete with them. Recognition of the Loss Distribution Approach should not be withheld (even if it turns out that no firms are in fact ready to progress to its use immediately). Further work should be carried out on issues of calibration, scaling, risk transfer and qualitative factors. And the impact of any rules should be tested before finalisation, and formally reviewed after implementation. In all these areas, ISDA remains willing to work with supervisors to achieve a result that furthers the practice of operational risk management.

SECTION V – PILLAR III – MARKET DISCIPLINE

1- GENERAL CONSIDERATIONS

ISDA supports the objectives of the Committee and agrees in principle that the new capital regime should be supported by enhanced public disclosures on capital, risk exposure, management and the capital adequacy of an institution.

ISDA believes that some issues merit particular attention. More specifically, we have concerns about:

- the vehicle for disclosure;
- the volume and complexity of the disclosures and the usefulness of financial statements to professional and “reasonable” users;
- the lack of co-ordination with accounting standard setters;
- the balance between benefits and cost of disclosure;
- comparability.

The vehicle for disclosure

We question if the financial statements are the appropriate vehicle for disclosure of this detailed regulatory information. Including this information in the financial statements, as suggested in paragraphs 12 and 13, would give rise to an audit requirement, which is, in most jurisdictions, inconsistent with other regulatory information. Consideration should be given as to whether much of this information would be better placed in the Director’s report or communicated via some other form of regulatory reporting which is made publicly available.³⁴

We would recommend a separate financial information package to be the appropriate vehicle.

The volume and complexity of the disclosures and the usefulness of financial statements to professional and “reasonable” users

Under the assumption of disclosure in the financial statements, we question if a broad range of readers would benefit from it. ISDA is concerned that the information disclosed is not understandable or useful to the “reasonable” user. Given the volume and complexity of the proposed disclosures there would appear to be a danger of “information overkill”. We believe that the excessively detailed disclosure requirements over-ride the materiality concept as stated in paragraph 20 and blur the objective of financial statements.

Only professional users (e.g. analysts, rating agencies) would comprehend the significance of the financial statements. ISDA believes that not all the information prepared for supervisory purposes will necessarily be useful for all professional users and is concerned that the disclosures are too voluminous, detailed and complex.

There appears to be a danger that the data will not be properly understood by all market participants and markets will become more volatile.

The lack of co-ordination with accounting standard setters

The disclosures appear to have been developed in isolation from other standard setters such as the International Accounting Standard Committee (IASC), the Financial Accounting Standards Board (FASB) and the Joint Working Group of standard setters (JWG). While paragraph 13 alludes to working with the accounting standard setters we are not aware of their being consulted on the development of the proposals now in place. Indeed in a number of areas the proposals in the paper contradict or duplicate existing or proposed requirements of a number of prominent accounting bodies.

Examples of such contradictions and duplications include the following:

- Qualitative information on the accounting policies for the valuation of assets and liabilities is already published under existing accounting disclosure requirements.

³⁴ However, inclusion in the Director’s report would subject the disclosures to a reasonability review by the auditors and would give rise to differing levels of reliance on the accuracy and completeness of figures in the financial statements.

- The Committee requires disclosure of unrealised gains and losses which are included in Tier 1 capital. While in principle there is no objection to the disclosure of this information, it seems to imply that capital derived from fair valuation is of lesser quality than other Tier 1 capital. This contradicts recent efforts from the IAS and Joint Working Group of standard setters to promote fair valuation principles.
- Where disclosure of assets and liabilities into relevant maturity groupings is required, maturity buckets should be identical to the ones specified under recognized accounting standards.
- The disclosure on consistency of accounting principles between accounting years is required in financial statements under existing accounting standards.

Given the move toward the global recognition of International Accounting Standards, and European Union compliance with these standards by 2005, we believe a better approach would be for the Committee to integrate its work with that of the new International Accounting Standards Board. This could still include the development of core disclosures that would need to be made in order for particular capital approaches to be followed, but would have the advantage of forming part of an integrated set of disclosures for the banking industry. IAS would also seem to constitute a better medium to enable the disclosures to evolve in line with market practice.

The balance between benefits and cost of disclosure

Although paragraph 3 states that the Committee does not expect the incremental cost of making the information public to be high, we recommend that a balance be achieved between the cost of the disclosures proposed and the probable benefits gained in terms of market discipline. Given the volume and nature of disclosures required, which appear to be “catch-all” in nature rather than focused on specific market needs, the costs of the existing proposals outweigh the likely benefits. We do not believe that because banks are collecting data for internal purposes, the incremental costs will be limited. If the information needs to be audited, the development of systems that provide an audit trail and the recurrent cost of the audit will have to be considered.

Comparability

The Committee suggests in paragraph 24 that the disclosures should be comparable between institutions. To this end, the Committee has included a number of templates that can be used when providing the information concerned. Nevertheless, banks may choose to provide the information in a different way. While comparable data across firms is conceptually appealing, it is difficult to achieve. Firms have very different but equally valid approaches to risk management and monitoring. We recommend that the Committee reflect these considerations into more flexible and general disclosure requirements.

Comparability of disclosures across accounting periods is easier to achieve. However, ISDA notes that, in relation to newer areas of quantitative risk management, it is necessary to allow for the fact that account readers will have no experience of interpreting statements or any history against which to benchmark current period data. While this clearly does not mean indefinite postponement of disclosures, it does suggest that a phased approach would be prudent. This concern arises particularly in the operational risk area. The phased approach may make it onerous to require disclosures as an entry criterion for the Internal Measurement Approach for operational risk.

2- PRINCIPLES FOR STRONG DISCLOSURE PRACTICES

We support the views outlined in the Shipley Working Group³⁵ report. This stated that financial information should be disclosed based on a firm's internal methodologies and exposure categories. Quantitative information on a firm's risk exposure should be balanced with qualitative information describing its risk management process. Public disclosures should vary among institutions to reflect legitimate differences in internal management processes and disclosure practices should change in step with innovations in firms' risk management and measurement practices.

Factors affecting an effective disclosure regime are noted in the FSA's response to the Cruickshank report on public disclosure.

These factors include:

- The accuracy and timeliness of the disclosures;
- The perception of the market participants about accuracy;
- The cost of running the system;
- The regulatory moral hazard;
- The need to provide information both on the quantum of risk in a firm's business and how that firm manages the risk;
- Ensuring that firms are not required to disclose proprietary information;
- The enforcement sanctions;
- Whether the disclosure requirements should be the same for all firms;
- The full benefits of disclosure requirements may only accrue when a reasonable time series of data is available.

We believe that these factors provide a general framework for the Basel Committee and should be taken into account when re-designing the Pillar 3 recommendations.

3- DISCLOSURE RECOMMENDATIONS

Although, as explained above, we do not endorse the approach taken by the Committee, we have performed a detailed review of the templates provided, bearing the following considerations in mind:

- Whether or not the information is understandable for a broad range of informed and diligent market participants;
- Whether or not the information is useful and compatible with the type of other information provided in the financial statements;
- Whether there are concerns of a proprietary nature;
- Whether the disclosures are reasonable in terms of volume and materiality.

Where the disclosure raised a particular comment, it has been noted below.

Appendix 1 – Scope of application

It would appear confusing for the information on sub-consolidated and unconsolidated entities to be given on a different basis to other information on subsidiaries and associates already presented in the financial statements under existing accounting rules. Information on group entities should be integrated and aligned with similar information that is already disclosed by financial institutions.

As stated in paragraph 27 it is also important to explain how the basis for consolidation for prudential supervision differs from the basis of consolidation for financial reporting rules.

³⁵ The working group on public disclosure was established in April 2000 by the Board of Governors of the Federal Reserve System, it was chaired by Walter V. Shipley. The Working Group has recommended enhanced and more frequent public disclosure of financial information by banking and securities organisations.

Information on the disclosure of surplus capital would appear to fit more naturally in Appendix 2 (Capital) rather than Appendix 1. Clear guidance on the disclosure of surplus capital would be welcome.

Appendix 2 – Capital

The core proposals of the Committee appear consistent with existing good accounting practice and are supported by ISDA.

However:

- It is paradoxical to stipulate disclosure of “undisclosed reserves”. This is not a generally accepted accounting term and it is unclear what is meant by it.
- Template 2.2 (Innovative Tier 1 Capital) would be simpler to understand if the residual maturity information was stripped out. Template 2.4 (Hybrid & Subordinated Capital Elements) goes into an unjustified level of detail and should be deleted. ISDA does not believe that this information contributes to a better understanding of the capital adequacy of an institution. Template 2.2 should be sufficient to achieve the objectives of the Committee.
- The requirement stated in paragraph 31 that information should be provided on the consistency of accounting principles between years overlaps with disclosure requirements under existing accounting standards.

Appendix 3 – Credit risk

Section I – Disclosures applicable to all institutions

We agree that banks should be expected to disclose information on the size of their total credit risk exposures and their approach to the measurement and control of this risk. We also agree that there is a need to address certain deficiencies in the current disclosure regime to achieve this. However we find the proposed disclosures to be excessive for their purpose, and to lack focus on the needs of users of financial statements

Additionally, the maturity buckets used in Template 3.I.4 should be harmonised with the existing maturity grouping under recognised accounting standards.

Many requirements for disclosure duplicate existing disclosure requirements under IAS. For example, the loan concentration breakdown and the reconciliation of the provision for credit losses are required under IAS 30. In addition, the guidance provided should state clearly that the breakdown should be provided based on internal risk management practices. Currently, geographical concentrations could be disclosed based on the office where risk is booked, and not where the final risk is i.e. the location of the counterparty or guarantee. The current guidance allows the provision of these figures using the same geographic breakdown as used for accounting purposes. As recommended by the Shipley report, we believe that the information should reflect the risk management practices of the bank and we recommend including clear guidelines to do so.

Quantitative and qualitative information with regard to credit scoring models could be considered as confidential information.

We recommend that the required disclosures be simplified, with a focus on information meaningful to the “reasonable” user.

Section II – Credit risk disclosures under the standardised approach

We agree that banks should disclose the rating agencies used for this approach. However, given the rating agencies will be subject to regulatory approval much of the remaining disclosure required would appear unnecessary and of limited value to the market. For example there would appear to be little benefit to users in understanding the banks unweighted outstandings in each risk bucket by rating agency. We believe that the systems development costs necessary to capture these data outweigh the

benefit for the user. We do not understand why changes in the list of rating agencies used by a bank and changes in that list should be disclosed.

We do not see the value for a user of financial statements of knowing a bank's policy for translating public ratings on particular bond issues into borrowings ratings on its loans.

Additionally the information shown in Template 3.II.2 would presumably be the same for each bank and therefore disclosure would be of little benefit.

We recommend requiring information to be provided on a basis compatible with the information on which credit decisions are made. This should include a quantitative analysis supported by qualitative information describing the underlying process. For example, some banks obtain all publicly available ratings and adopt the lowest or the midpoint.

Section III – Credit risk disclosure for the IRB approach

We agree with the principle that information should be publicly disclosed before a bank can become eligible for IRB treatment. However we do not believe that the interests of market participants are best served by the simple repetition of data prepared for regulatory purposes. The proposed disclosures, including the templates, are unacceptable due to both their volume and to serious doubts as to whether the information contained would be readily understandable. In addition, the disclosures could act as a disincentive for firms to move towards the IRB approach.

Section IV – Credit risk mitigation

The proposed disclosure in this area is excessive in terms of volume and detail. We would consider the disclosure of the main guarantors/protection providers of banks to be proprietary information, and would note that the disclosure of this information to the market could give rise to systemic concerns surrounding the industry.

In relation to the templates the relationship between the information on Template 3.IV.1 (Mitigation of Exposure) and Template 3.I.1 (Credit Risk Exposure) is unclear and would benefit from further explanation.

Appendix 4 – Market risk

While we accept that there may be grounds for elaborating on market risk disclosures, and for existing best practice to be extended to less developed jurisdictions, we do not consider the radical overhaul implied by these proposed disclosures to be necessary. In each instance the disclosure sought is excessively detailed and the interests of market participants would be better served by the type of summary information currently given in the financial statements of many leading institutions.

On template 4.1 (Level & variability of market risk in terms of value at risk) we do not consider that the proposed VaR disclosures can sensibly be totalled and would suggest that the proposed provision of the variability data sought for each portfolio by period is excessive.

On Template 4.3 (Backtest results) we consider the inclusion of results on an individual daily basis for all 250 days to be impractical and too detailed. We do not believe that those data contribute to a better understanding of the risk profile of the institution.

Appendix 5 – Operational risk

We have no specific comments on Appendix 5 other than to note that Template 5.1 is an excellent example of a disclosure which provides both clarity and focus. The other templates proposed by the Committee would benefit from similar focused design. However, we believe that operational losses by business line constitute confidential information.

A more appropriate basis for disclosure, therefore, would be to require banks to explain their operational risk management processes.

We refer to our comment on a phased approach for operational risk disclosure under the comparability section.

Appendix 6 – Interest rate risk in the banking book

While we do not disagree with the concept of disclosing interest rate risk in the banking book, we consider the core disclosures to be excessive. For example, the proposed requirement for information by currency would be extremely onerous for an internationally active bank.

Again, we believe that this is an area where the IAS Steering Committee should be mandated to devise suitable disclosures within the International Accounting Standards.

Appendix 7 – Capital adequacy

While we would not disagree with the proposed summary comparison of internal estimates of economic and regulatory capital, we do not see the need or benefit arising from the capital adequacy ratios being disclosed at the level of detail proposed.

ANNEX 1 : THE REGULATORY CAPITAL TREATMENT OF CREDIT RISK ARISING FROM OTC DERIVATIVES EXPOSURES IN THE TRADING AND THE BANKING BOOK

INTRODUCTION

In its February 2000 response [2] to the first draft of the New Accord issued by the Basel Committee in June 1999, ISDA identified three specific areas for further work ([2], Section VI, Next Steps), namely operational risk, retail credit risk and counterparty risk. ISDA reported on operational risk and retail credit risk in September 2000.

In January 2001, the second consultative period commenced with the publication of the New Accord [1]. ISDA notes the strong conceptual framework behind this document and the positive tone adopted with regard to the possible use of modelling techniques in the estimation of individual transaction and portfolio-based PFEs ([1], IRB consultative document, paragraph 117).

ISDA set up a working group to consider counterparty risk in the trading and the banking book. Our conclusions are presented below. The conceptual framework and approach used by the working group on counterparty risk mirrors the approach taken in the New Accord, even though the work done by the working group was largely completed before the publication of the second consultative paper.

We hope the work presented below will contribute to the setting of a more risk-oriented framework for counterparty risk, consistent with the current development on capital for credit risk arising from lending products.

SUMMARY

The main arguments made in this Annex are summarized below.

Use of internal models for counterparty risk capital

We strongly recommend that the Basel Committee allow banks to calculate their exposures for counterparty credit risk based on their internal models, which would be subject to supervisory review and approval. Such exposure amounts would then be risk-weighted for capital consistent with the weights or formulas applicable to other credit assets. As noted above we are encouraged by the positive tone of the New Accord in this respect ([1], IRB consultative document, paragraph 117).

The current rules for counterparty risk capital

For firms that do not use internal models, we envisage that the existing add-on based method would remain in place, but with certain key modifications to address the main faults of the current approach. Counterparty credit exposure would be calculated as the positive mark-to-market values plus an appropriate add-on. Importantly, among mutually nettable transactions, the add-on calculation should be a function of net risk positions, and not calculated at the transaction level as is the case today. This approach is designed to avoid the need for an aggregation rule, and the current rule is identified as a key weakness of the current approach.

Conceptual approach

The New Accord refers to PFE or Potential Future Exposure for the calculation of credit equivalent exposure ([1], IRB Consultative Document, paragraph 117). We indicate that the most appropriate concept to rely on in order to correctly calculate capital for counterparty risk is that of *expected positive exposure*. A definition of this concept is given, and it is used as the basis of our numerical work below. We believe that the use of this concept removes the difficulties of the current aggregation rule and is consistent with the best aspects of the New Accord.

Calibration exercise

We have conducted a calibration exercise indicating the levels of credit exposure assessed by our method for real transactions, which we share for your information.

Example Calculation

Using the results of the calibration exercise, we give a detailed example showing an outline of a modified add-on based calculation of credit equivalent exposure for a counterparty portfolio. The example is not intended to be a definitive statement on the best calculation, but illustrates key similarities and differences between a calculation based on our conceptual approach and the current approach.

Technical Notes

A technical review is given at Annex B of the results of applying the concepts of the IRB approach to counterparty risk, the concept of expected positive exposure and the mathematical properties of this concept.

THE USE OF INTERNAL MODELS FOR ASSESSING COUNTERPARTY RISK

Introduction

ISDA notes the positive tone of the New Accord on the use of models for calculating counterparty exposure arising from derivatives ([1], IRB Consultative Document, paragraph 117). ISDA believes that:

- Modelling credit equivalent exposure for counterparty risk is, both conceptually and on a practical level, similar to the market risk modelling already widely used by banks. Examples of current applications of these modelling techniques are calculation of Potential Future Exposure (PFE) as part of the assessment of credit risk arising from derivatives, and calculation of capital requirements for market risk for those institutions having models approval for market risk.
- It would therefore be a small step to allow suitably qualified institutions already engaged in these modelling practices to use these models to assess counterparty exposure.
- A further reason to adopt modelling is the ease with which certain technical problems inevitably associated with add-ons can be solved. Although as described below, add-ons for derivatives can be consistent with the overall conceptual framework, it is difficult to envisage a practical system of add-ons which is both simple enough to be unambiguously applied by all banks and subtle enough to include all the features of the behaviour of market driven exposures which are easily captured by models.

The working group has concluded that the needs of a conceptual approach to assessing counterparty risk capital would be best addressed by allowing suitably qualified banks to use internal models to assess Credit Equivalent Exposure (“CEE”) for OTC counterparty risk, rather than the current system of add-ons.

The scope of ISDA’s proposals with respect to models

It is important to understand the scope of ISDA’s recommendations with respect to internal modelling for counterparty risk. What is being proposed is for appropriately qualified institutions to use internal models to determine CEE, to which regulatory risk weights and capital charges would then be applied. We call this the “**two step approach**”.

ISDA accepts that the use of internal models to determine capital itself for counterparty credit risk must be regarded as a further development, given that credit risk modelling for fixed exposures (e.g. loans) is not yet accepted as a means of assessing regulatory capital³⁶.

Which banks should be qualified to use models for calculating Credit Equivalent Exposure?

The techniques and concepts relevant to modelling exposure, and therefore CEE which is a measure of exposure for market driven instruments, are those also used in the modelling of value at risk and other market risk measures. This will be clear from the detailed discussion below. On the other hand, these market risk techniques must be distinguished carefully from techniques required for modelling portfolio default risk directly or performing other modelling in which credit risk plays a direct part, such as estimating EAD for off balance sheet lending instruments.

³⁶ ISDA supports the eventual recognition of internal models for the *direct* calculation of capital charges and expects that in due course internal models will be accepted for calculation of capital for counterparty risk as well as for credit risk arising from lending products.

The anticipation that banks with market risk modelling expertise will also be able to calculate the required measure of CEE, is borne out by the calibration exercise discussed in Section E. Participants in the calibration exercise found they were able to use their existing market risk or PFE calculations suitably modified to calculate the required contributions.

Based on this experience ISDA concludes that institutions that have competence in market risk modelling are also suitably qualified to model CEE for derivatives using internal models. ISDA expects that banks that have models approval for market risk capital calculations would typically be among such institutions.

Regulatory validation of models and other considerations

Regulators need to set practical qualitative and quantitative standards for validation. The purpose of validation is to assess the process and its outcome in order to identify sources of biases and errors.

Two areas of current practice in the validation of internal models which shed light on available methods are validation of market risk models, and supervisory review of institutions' internal practices with respect to assessment of counterparty risk using PFE.

The scope and nature of internal models varies across institutions. This means that different institutions are likely to calculate different exposures and economic capital for the same portfolio of transactions. Systematic differences may appear due to differences in aggregating risks within and across broad risk factors, the choice of methodology for calculating exposure and the length of data series.

ISDA assumes that regulators will want to ensure that a satisfactory base level of prudence and consistency of capital requirements exists among institutions. Accordingly, minimum quantitative standards should be satisfied. However, institutions may adopt quantitative standards different from those set by the regulator, so long as it can satisfy the regulator that these are appropriate and that the resulting capital requirement is not lower.

ISDA is keen to work with regulators in developing a suitable supervisory framework.

ASSESSMENT OF THE CURRENT RULES FOR COUNTERPARTY RISK.

Introduction

The current add-on based rules for counterparty risk suffer from the deficiencies inherent in the approximations required for any simplified system. However, over and above this, the aggregation rule, which specifies how transaction level add-ons are to be aggregated to the counterparty level, is poorly constructed and difficult to justify on conceptual grounds. The aggregation rule therefore warrants special analysis and is discussed below.

The aggregation rule

The aggregation rule is the mechanism of determining a counterparty level credit equivalent exposure from transaction level data.

The current aggregation rule relies on information about positive and negative valued transactions in a portfolio to assess the degree of diversification present. The correspondence between this indicator and the real diversification present, which is a function not of the values of transactions but of their risk positions, is weak, as a result of which the aggregation rule fails to measure the true risk in a portfolio.

Annex A gives a simple example where the application of the rule leads to an arbitrary degree of over or understatement of exposure at the counterparty level, and therefore of regulatory capital required.

Calculation from transaction level data

The aggregation rule in its current form is required essentially because the current calculation begins with risk weights calculated at the transaction level. From the close analogy which exists between credit equivalent exposure and potential future exposure and market risk concepts, it should not be surprising that in the presence of netting, the net risk positions in a portfolio are a more appropriate starting point for such calculations.

Observations from ISDA's calibration exercise

ISDA's calibration exercise was designed to allow participants to assess their capacity to perform the calculations required by the proposed framework, and to gain experience in the technical aspects of the methods involved. As a result of this valuable practical exercise we have certain observations about the behavior of CEE which would be relevant to any modification of the existing rules. These are discussed in Section F.

CONCEPTUAL ASSESSMENT OF CREDIT EQUIVALENT EXPOSURE

Introduction

We discuss the measurement of counterparty risk within the conceptual framework underpinning the IRB approach.

Although ISDA recommends that qualification to use internal models for calculating CEE should be independent of choosing the IRB approach from among the menu of approaches available for setting risk weights, nevertheless the IRB approach is the place in the New Accord from which conceptual guidance is most readily available. Equally, the modified add-ons discussed below are based on these concepts, although they would be used by banks on both the IRB and standardised approaches.

In order to make our conceptual arguments readily accessible, technical details appear in Annex B, and the current discussion addresses the conceptual issues in as non-technical a fashion as possible.

The two step approach

ISDA supports the introduction of internal modelling for all aspects of capital. However we do not discuss the introduction of modelling of capital for counterparty exposures here. Our proposed approach proceeds in the same two steps as the current capital calculation. We propose that all institutions calculate capital for counterparty risk as follows:

- Calculate a Credit Equivalent Exposure or CEE for each counterparty;
- allocate capital to that exposure in the same manner as for a loan of the same amount.

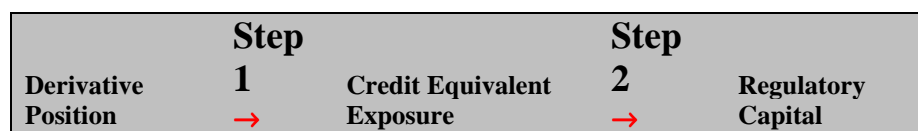
We have argued that many institutions are already qualified to competently use their own internal models to calculate CEE. Other institutions not so qualified would use the modified add-on approach. Once CEE has been calculated, however, the same treatment should apply as for an ordinary loan of the same amount, under whichever of the menu of approaches to capital calculation allowed by the New Accord is in use by the relevant institution.

Step 1: Calculation of Credit Equivalent Exposure

Calculate CEE based on the value and risk characteristics of each counterparty portfolio. The CEE should represent the amount of fixed loan having the same contribution to capital as the derivative, calculated under the parameter assumptions used in the second consultative paper of the Basel Committee on Banking supervision, as the actual portfolio.

Step 2: Calculation of capital

Regulatory weights, determined either by the Standardised, or by the IRB approach as appropriate to be applied to the CEE to determine the final amount of capital.



The question of time horizon

The New Accord IRB approach is based on the use of a systematic risk one factor model (the Merton or Vasicek model) to calculate contributions to capital over a one year time horizon ([1], IRB Approach Supporting Document). These two pieces of the framework are naturally important to our approach of CEE. For time horizon we record our corresponding assumption explicitly, as follows:

In order to be consistent with the treatment of lending products in the second consultative paper of the Basel Committee on Banking supervision, ISDA retains a one year horizon for the calculation of

capital requirements for counterparty risk, and therefore where relevant, a one year time horizon in the consideration of appropriate exposure measures for such instruments.

The impact of maturity

An issue related to time horizon is the impact of maturity on capital charges for counterparty risk. This question has been considered briefly in the present document, with the following conclusions:

- The alternate MTM or default mode maturity adjustments proposed in the New Accord ([1], IRB Supporting Document, paragraphs 175 – 184), may, like the rest of the IRB framework, be extended to counterparty risk.
- Under this common framework, credit equivalent exposures arising from counterparty risk should be subject to maturity adjustments similar to those proposed for fixed exposures.
- These maturity adjustments should form part of the risk weights, based either on a suitably measured actual maturity or on an assumed average maturity. This is then entirely consistent with the treatment of lending products.

The remaining question is then the appropriate measure of maturity to assess the adjustment for a counterparty portfolio when explicit maturity is used. This question was not addressed in detail by the working group, but preliminary calculations suggest that actual maturity may be an appropriate measure.

A suitable measure of Credit Equivalent Exposure

The New Accord ([1], IRB Supporting Document, paragraph 117) notes the use of Potential Future Exposure (PFE) as the measure of CEE associated with each counterparty. However, given the conceptual approach taken in the New Accord, we now question whether PFE is the most appropriate calculation. We begin by assessing the risk characteristics of a suitable measure of CEE:

Risk Characteristics

CEE should depend both on the spot exposure and on the market risk characteristics of the portfolio since these determine the likelihood of future exposure arising. Both the portfolio risk positions, and the volatilities of the markets underlying the portfolio, e.g. FX, equity, commodity, should be relevant.

Portfolio effects

CEE, at least in concept, should reflect aggregate exposure and risk at the portfolio level. Three factors interrelate to cause the portfolio effect, namely *netting*, direct *cancellation* of risk positions within a risk factor, and the effect of *diversification*, which is the tendency of the portfolio to be less volatile where many not perfectly correlated risk positions are present, particularly but not only where netting is also present.

Risk positions only cancel exactly when the transactions giving rise to them can be netted. Hence where netting is applicable, portfolio risk characteristics are determined by net risk positions rather than transaction risks. Net risk can be very different from the sum of transaction level risks. This effect is behind the poor performance of the aggregation rule shown in Annex A.

Practical Measures of Credit Equivalent Exposure

Three key risk measures are commonly used at the counterparty portfolio level, each of which could be considered as the appropriate measure of CEE. It will be helpful to assess these.

Potential Future Exposure (PFE)

PFE is the analogue of VaR over hold to maturity time horizon, and represents the maximum likely credit exposure over that horizon. It can be described as a high percentile of the exposure that could arise based on the current portfolio.

PFE is used in assessing individual credit decisions and as an adjunct to spot exposure in guiding exposure management actions relating to specific counterparties.

Counterparty VaR

Value at risk is defined by most institutions as a high percentile of the distribution of values of a portfolio over a short time horizon. In the present context the portfolio would be all the transactions with a given counterparty, and VaR then represents the amount the counterparty could lose, and therefore the (additional) credit exposure that could arise, over a near time horizon.

VaR plays the role of potential future exposure when variation margin agreements are in place, to calculate the unsecured risk to the bank over the close out period and in some cases to assist in the calculation of margin/collateral requirements.

Expected Positive Exposure

Expected positive exposure is the average exposure arising over the life of the portfolio or a specified time horizon. Unlike PFE and VaR no percentile is involved; expected positive exposure reflects the fact that most counterparties in a bank's trading portfolio will not reach their PFE's at the same time.

At a portfolio level, the expected positive exposure can provide more relevant information about the aggregate level of risk. Hence, expected positive exposure is often used for calculating the cost of holding a counterparty credit position, and for economic capital allocation and credit charging policies. Although not capturing individual counterparty behaviour in the same way as PFE or VaR, expected positive exposure represents a theoretical fixed exposure having the same risk in a portfolio context.

The three measures have many aspects in common, and calculation techniques for estimating them are similar. An institution using a Monte-Carlo method with the main aim of estimating PFE could obtain the other two measures as a by-product of the calculation. The same level of reliance could then be placed on estimates of each of the three measures, as the same factors underlie the calculation of each. Annex B gives calculations illustrating the connections between these measures.

Expected Positive Exposure

As indicated above, expected positive exposure, rather than PFE, is the most conceptually appropriate measure to apply to obtain capital estimates for derivatives for regulatory capital.

At a conceptual level the right measure is simply the one which best results in an estimate of portfolio level credit risk capital over a 1-year horizon, given that the calculation must proceed first (Step 1) by a CEE calculation and secondly (Step 2) by an allocation of capital to CEEs via capital weights. Expected positive exposure is this measure, and this is demonstrated at a technical level in Annex B.

The relevance of expected exposure should be intuitively plausible. Other measures such as PFE or VaR incorporate a choice of percentile (for example, an institution might choose 95% or 99%) "in addition" to the percentile used within the calibration of weights for capital in Step 2. Because of this a calculation involving these measures would incorporate two, not one, percentile settings, possibly at different confidence levels. Intuitively, this is inappropriate.

Definition of expected positive exposure

A technical definition of expected positive exposure is given in Annex B. An intuitive understanding can be gained by considering an OTC derivative contract with spot value zero. Over time the value will vary depending on the underlying market. The exposure to either party is zero when the contract favours the other party and otherwise positive. Once the transaction has matured it will be possible to refer to an average exposure outstanding over time for each party, taking account of periods of zero or positive exposure. For either party this could be zero in cases where the contract was continually in favour of the other party, but will otherwise be positive.

At inception, it is of course not possible to know this average exposure because it depends on the subsequent path taken by market rates, but it will be possible to estimate the expected value this exposure should take, by suitably weighting all possible outcomes for the future market. This is the expected positive exposure of the transaction. It is a positive number for each party, and will only be zero where there is no circumstance where the exposure could be positive (e.g. a sold option).

Expected positive exposure can be related to VaR in a net portfolio (see Annex B). The two measures differ markedly, however, when the portfolio consists of more than one netting set³⁷. Then, expected positive exposure is always additive between netting sets. In contrast the behaviour of VaR is complex and typically requires Monte-Carlo simulation.

CALIBRATION EXERCISE

Introduction

While suitably qualified institutions should be able to use their internal models to calculate CEE, there is also a requirement to modify the current add-ons and aggregation rule for use by those institutions not using an internal modelling approach. In this section, we present the results of our calibration exercise, which, subject to further assessment, suggest suitable levels of add-ons.

In Section G, we use the results tabulated below to give an example of the envisaged modified calculation for those banks maintaining an add-on based CEE calculation.

ISDA's calibration exercise

The objectives of the calibration exercise were

- to assess the levels of CEE under our conceptual approach;
- compare these levels to the current regulatory calculation;
- make outline suggestions for a potential change in regulatory treatment.

In the exercise, nine leading internationally active banks submitted results using the specified definition of expected positive exposure over a 1 year time horizon. Each bank was, however, free to use its own choice of model for performing these calculations, and banks typically adapted their existing processes of varying complexity including formulaic approaches and Monte-Carlo simulation.

Results summary

The table below summarises the results of the calibration exercise, compared with the current add-ons for different instruments, calculated according to the principles set out above.

Type	Interest Rates	Foreign Exchange	Gold	Precious Metals other than gold	Equity Indices	Commodities
Maturity						
<i>< 1 year</i>						
Current Addon	0.0%	1.0%	1.0%	7.0%	6.0%	10.0%
Calibration Exercise	0.2%	3.0%	3.5%	5.5%	6.5%	10.0%
<i>1 → 5 years</i>						
Current Addon	0.5%	5.0%	5.0%	7.0%	8.0%	12.0%
Calibration Exercise	0.6%	3.0%	3.5%	5.5%	6.5%	10.0%
<i>> 5 years</i>						
Current Addon	1.5%	7.5%	7.5%	8.0%	10.0%	15.0%
Calibration Exercise	1.5%	3.0%	3.5%	5.5%	6.5%	10.0%

Observations and conclusions

General caution

It should be noted that the results reflect the currencies, interest rates and commodities chosen for the exercise and their historic market behavior modelled at the present time.

³⁷ Here and in the rest of this document a netting set is a set of transactions which whose positive and negative values are reliably thought to be capable of being added to give a net claim in the event of bankruptcy. A portfolio of transactions is assumed to divide into disjoint netting sets. A netting set may be the whole portfolio and at the opposite extreme may contain only one transaction.

Level of agreement between contributors

The results shown are averages but it is to be noted that the overall agreement between participants was uniformly high.

Comparison with current add-ons

The current add-ons are shown alongside the results for comparison. The current add-ons are broadly similar in overall level to those calculated by participants in the calibration exercise, although as expected they show a different dependence on maturity.

However, caution must be exercised in making this comparison because the application of the add-ons suggested by the calibration exercise would be different to the current rules. The example calculation below at Section G illustrates how add-ons based on expected positive exposure should be applied: in particular there is no benefit analogous to that currently given by the aggregation rule.

Maturity

Results are for risk positions with a maturity of at least one year. The impact of maturity in general was discussed above in Section E, where it was proposed to adjust for maturity within the risk weights as for loans. ISDA would expect this maturity adjustment to extend to a benefit for positions having a residual maturity of less than one year.

Elements not covered by the calibration exercise

Two important classes of transactions were not covered by the calibration exercise. These are

- transactions subject to variation margin;
- transactions having a material (positive or negative) spot mark to market.

In these cases, however, the technical analysis at Annex B allows to deduce what treatments should be appropriate. These are illustrated and discussed below in the example calculation at Section G.

EXAMPLE CALCULATION

We recognise that an internal models based approach to CEE will not suit all institutions, and that therefore a modified add-on based calculation must be specified under any conceptual framework. In this context, the calibration exercise can be viewed as a guide to the add-on levels expected for instruments of the types and maturities tested.

However we wish to give further guidance on the appropriate use of add-ons to calculate CEE for a counterparty with a large portfolio of transactions. In order to do this we have constructed an example portfolio and indicated how the calculation of CEE for this portfolio should proceed. The calculation is similar to the current rules with two key differences, which will be clear from the example below

- the calculation begins with net risk positions (within netting sets – see below), not with transaction level information, and
- the aggregation rule has no place in this calculation: all aggregation to the counterparty level is simple summation.

We begin with a detailed description of the key elements in our proposed calculation.

Example add-on based CEE calculation

The calculation shown in the table below follows 4 steps, which we recommend as the correct reflection of the behaviour of the expected positive exposure measure of CEE. The steps are described below with explanatory notes.

1. Calculation of net risk positions in each netting set

In each netting set, calculate the *net* risk position in each FX, IR, Equity and Commodity risk category. Under the current rules, an add-on would be calculated immediately for each transaction. In our example calculation we advocate that, within a netting set, the calculation should begin by assessing the net risk position for each risk factor. This approach replaces the netting benefit which is currently

inaccurately assessed via the aggregation rule (see Section D). As can be seen from the later steps in this calculation, no corresponding benefit is proposed, all netting effects having been correctly recognized at this stage.

2. Application of factors

Each net risk position is expressed as an absolute (positive) number. A risk factor is then applied to obtain the CEE contribution corresponding to that risk factor.

In the example calculation, the add-on factor for each risk category is the 1 year calibration exercise shown in the table above. The calibration exercise was described in terms of transactions, but may equally be viewed as a calibration of add-ons to risk positions, since each transaction reviewed in the calibration exercise represented a portfolio containing a only one material interest rate, foreign exchange, equity or commodity risk position.

3. Aggregation to netting set level

CEE for each netting set is the simple sum of the risk factor CEE contributions calculated in (2) for the risk positions within that netting set.

4. Calculation of counterparty level CEE

Finally, counterparty CEE is obtained as the **simple sum** of the netting set CEEs. No aggregation or diversification benefit is given in any circumstances.

This calculation may be expressed mathematically as follows:

$$CEE_{Counterparty} = \sum_{netting\ sets} CEE_{netting\ set}$$

It is important to note that it is the correct treatment in all circumstances, based on the behavior of the expected positive exposure concept. Namely, expected exposure is always perfectly additive across netting sets. A proof is given in Annex B. Note that the behavior of PFE is different, and there it is not generally true that the PFE at the counterparty level is the sum of the PFE's at the netting set levels – however this more complex behavior need not concern us because of our conceptual choice of the expected exposure measure.

The example portfolio

The portfolio and proposed CEE calculation are set out in the table below. Key properties of the portfolio, chosen to illustrate how the properties of expected positive exposure noted above should be incorporated into an add-on – based calculation of CEE, are as follows:

- The portfolio contains two netting sets, labeled A and B (see footnote 2 for the definition of a netting set - transactions within netting set A net with other such transactions but netting with the transactions in set B is not permitted);
- netting set A contains long and short transactions of various maturities in a variety of underlying interest rates, currencies, equities and commodities.

The example calculation

The example portfolio and entire calculation are given below. The add-on based CEE for this counterparty is \$28.82 million. Hence, according to the counterparty credit quality, the capital requirement would be \$28.82 million × Risk Weight.

Note that an internal model based calculation of the CEE would use the netting set and risk information presented in the example in an appropriate calculation to give a single CEE replacing the \$28.82 million given by the add-on based approach.

Figure: Example CEE Calculation (assuming calibration results as add-on factors)

Netting Set A

				Risk by add-on category				
Underlying	Transaction Type	Notional \$m	Maturity Years	MTM \$m	IR (\$m per bp) × 10,000	FX \$m	Equity \$m	Commodity \$m
<i>Interest Rate and FX products</i>								
USD	Interest Rate Swap	80.00	8	(5.00)	512.91			
USD	Interest Rate Swap	(300.00)	5	2.00	(1,318.96)			
Total USD IR					806.05			
EUR	Currency Swap Leg	100.00	15		(1,016.24)	(100.00)		
Total EUR IR & FX					1,016.24	100.00		
JPY	Currency Swap Leg	(100.00)	15	(17.00)	1,302.13	100.00		
Total JPY IR & FX					1,302.13	100.00		
<i>Equity products</i>								
FTSE	Total Return Swap	(150.00)	3	3.00			(150.00)	
FTSE	Total Return Swap	60.00	2	(1.00)			60.00	
Total FTSE							90.00	
DAX	Total Return Swap	(100.00)	2	15.00			(100.00)	
Total DAX							100.00	
<i>Commodity products</i>								
Oil	Brent Crude Swap	10.00	2					20.00
Total Oil								20.00
Net MTM, and summed absolute risk positions by type				(3.00)	3,124.42	200.00	190.00	20.00

Add-on Factor (See Calibration Results)		0.20%	3.00%	6.50%	10.00%
Exposure and Add-ons	0.00	6.25	6.00	12.35	2.00
CEE for Netting Set A					26.60

Netting Set B

				Risk by category				
Underlying	Transaction Type	Notional \$m	Maturity Years	MTM \$m	IR \$'000 per bp	FX \$m	Other \$m	Other \$m
<i>Interest Rate and FX products</i>								
USD	Interest Rate Swap	10.00	20	2.00	111.60			
Net MTM				2.00	111.60	0.00	0.00	0.00
<i>Add-on Factor (See Calibration Results)</i>								
					0.20%	3.00%	6.50%	10.00%
Exposure and Add-ons				2.00	0.22	0.00	0.00	0.00
CEE for Netting Set B								2.22

Total CEE (\$ millions) **28.82**

Notes on the example calculation

Presentation of interest rate sensitivities

Interest rate sensitivities presented are the \$ millions profit /(loss) per basis point × 10,000. This unit is the same as Notional × Duration, (for example, a duration of 2 years and a notional of \$1 million is equivalent to a sensitivity of \$200 per basis point, which we would present as an interest rate position of \$2million. This is commensurate with the use of the add-on 0.2% for interest rates, corresponding to the calibration exercise result for a swap of 1 year maturity.

Total return swaps

These are assumed to be defined so that the counterparty pays or receives the return on the specified index over the coupon period. This means there are not multiple exchanges of principal, and accordingly the risk positions have been represented as similar to the notional amount. In practice, such transactions are normally variation margined – this situation is discussed below.

FURTHER ISSUES RELATED TO THE EXAMPLE CALCULATION

Gross counterparties

A gross counterparty is one for which netting is not allowed between any two transactions. For such a counterparty, the CEE calculation should clearly proceed *by interpreting each separately documented transaction as a netting set*. It is worth clarifying that, as a result of Steps 3 and 4 discussed above, this has the effect of calculating CEE at the transaction level and then summing to the counterparty level with no offsets. This important rule may be summarised as follows:

For a gross (non-netted) counterparty, each transaction is a netting set, and CEE is the sum of transaction level exposure and add-ons.

Treatment of non-zero market values

The assessment of CEE for each netting set used the following rule, which is analogous to current practice,

$$CEE = \text{Max}(0, MTM) + \text{Add-on}$$

where in this equation the Add-on is assessed based on the same risk positions as those actually present in the portfolio, but ignoring any spot market value.

The results of the calibration exercise presented at Section F are for at market instruments (i.e. $MTM = 0$), and other instruments were not investigated. However, a theoretical assessment is given at Annex B, where it is shown that the rule above will without exception give a conservative estimate of “true” CEE when a portfolio has non zero spot value.

Treatment of Collateral

The calibration exercise ignores the benefit present where a portfolio has a variation margin agreement. However, as in the unsecured case, a theoretical approach to this can be derived from the analysis in Annex B. In fact, like PFE and VaR, expected positive exposure scales by the familiar “square root of time” rule. As a result, the benefits of collateral over different time horizons evaluated in the New Accord ([1], The New Basel Capital Accord, paragraph 98) are valid to be applied here, with the difference that instead of haircuts, the scaling should apply to the CEE. Referring to the New Accord we suggest the following treatment:

Scaling the credit equivalent exposure for remargining period

Within a modified add-on based calculation, the CEE for calculation should be given by

$$CEE = \text{max}(0, \text{Net MTM}) + \text{Add-on} \times \sqrt{\frac{(9 \text{ days} + N_{RM})}{1 \text{ year}}}$$

where

- add-on is calculated without regard to the margining agreement (and therefore essentially represents unsecured risk over one year)
- Net MTM is the value of the portfolio *less* collateral currently held³⁸

Non – cash collateral and collateral market risk

Where the collateral itself gives rise to market risk positions, for example foreign currency cash, securities or equities, risk positions arising from the collateral should first be calculated and then incorporated in the Add-on calculation as if they arose from the portfolio itself.

Calculation using internal models

As explained above, where a bank uses its internal model to calculate CEE, the model would proceed in one step from netting, value and risk information about the counterparty portfolio and any collateral present, to a single CEE number for that counterparty, to which the risk weight for that counterparty should then be applied. Non-zero market values, any margin agreements present, and the netting

³⁸ Further adjustments to the Net MTM could be set out for agreements which incorporate a material minimum transfer amount or unsecured threshold.

structure of the portfolio would be taken account of directly by the model and so specific adjustments for these factors would not be required.

CONCLUSION

This report summarizes the consensus views of the ISDA working group on counterparty risk and reports on the technical and conceptual work performed by the group from October 2000 to May 2001. The period over which the work summarized here was conducted, contained the publication date of the New Accord, and accordingly the New Accord, and in particular the Internal Ratings based approach, was available as a reference for the conceptual framework for advanced measurement of credit risk capital preferred by the regulatory community.

The views presented here are intended to be consistent with the framework underlying the IRB approach and represent an extension of the ideas presented there to the measurement of credit risk from counterparty derivatives portfolios.

The working group emphasize throughout this report that the best and simplest way to ensure a risk sensitive approach to counterparty risk capital for sophisticated banks would be the introduction of internal models for calculating credit equivalent exposure, or CEE, for derivative portfolios. The working group note the encouragement given to this point of view in the New Accord itself.

At the same time the working group recognize the need for simplified systems of rules for capital calculations, and have attempted despite the considerable technical difficulties involved to illustrate, using an example, how a simple system of rules could be devised for calculating credit equivalent exposure which, though crude, would be reliably prudent and would remove the most obvious defects of the current system, of which the worst are those associated with the aggregation rule.

The working group hope that despite the unavoidable technical difficulty of the topic, their report will be viewed as an worthwhile clarification of the conceptual framework for capital calculation for counterparty risk and an opportunity to bring a consistent treatment to credit risk for all products, based on the framework already set out in the New Accord.

Annex A: Illustration of the failure of the aggregation rule

In this Annex, we show by example that the aggregation rule is capable of generating material over or understatement of capital and giving incorrect incentives by focusing on the values of transactions rather than the risk positions they represent.

Example Portfolio

In this hypothetical example assume transactions have been done at market, have the same maturity date and have residual maturity of more than one year. Under the current rules an add-on of 8% applies (see [5]). Suppose spot share price = £1.15.

Transaction	Description	Approx Value £
<i>Portfolio A</i>		(Spot = £1.15)
Transaction A1	Forward purchase of 1,000,000 XXX shares @ £1.10	50,000
Transaction A2	Forward purchase of 1,000,000 XXX shares @ £1.20	(50,000)
Net position	<i>Long 2,000,000 shares of XXX at £1.15</i>	
<i>Portfolio B</i>		
Transaction B1	Forward purchase of 1,000,000 XXX shares @ £1.10	50,000
Transaction B2	Forward sale of 1,000,000 XXX shares @ £1.20	50,000
Net position	<i>Flat: Profit = £100,000</i>	

Regulatory calculation

In the current rules the aggregation rule would be applied to these portfolios as follows:

Transaction	NMV	NPMV	NGR	Add-on factor = $0.4 + 0.6 \times \text{NGR}$
<i>Portfolio A</i>	0	50,000	0	40%
<i>Portfolio B</i>	100,000	100,000	1	100%

Under the current rules, credit equivalent exposures are given by:

CEE = Max (0, MTM) + (Σ Add-ons) \times Add-on Factor, thus

Portfolio A: CEE = $0 + 40\% \times 2,000,000 \times 1.15 \times 8\% = \text{£73,600}$

Portfolio B: CEE = $100,000 + 100\% \times 2,000,000 \times 1.15 \times 8\% = \text{£284,000}$

Portfolio B's CEE is £284,000, although portfolio B has an approximately fixed replacement cost of £100,000 which is less than £284,000 regardless of the share price. But the leveraged portfolio A has a lower CEE. The implied confidence level or chance of the portfolio exposure staying below CEE, is clearly low for portfolio A and 100% for portfolio B.

Analysis

These ratios can be made arbitrary by choosing smaller market values and larger notionals. The key to the problem is the fact that, contrary to the reasoning which lies behind the choice of the aggregation rule, spot mark to market values are not an indication of the direction of a transaction's associated risk position; the factor allowing these to diverge in the current example is that the share price underlying portfolios A and B is allowed to go up and then back down again.

Manipulation

Portfolio A is economically identical to a single forward purchase at the average price £1.15. This transaction would have spot value 0 and CEE equal to $0 + 100\% \times 2,000,000 \times 1.15 \times 8\% = \text{£184,000}$. Thus CEE depends in general on the way transactions are booked. This sort of dependence is always undesirable since it can be used to minimize capital charges in an economically irrelevant way i.e. to arbitrage the rules.

Annex B: Expected Positive Exposure

Objectives

This Annex is intended to provide the technical definition of expected positive exposure, the concept introduced in Section E as the basis for measurement of CEE for market – driven portfolios, and further to provide at a technical level the link between this concept and the conceptual approach to credit risk adopted in the New Accord ([1], IRB Approach Supporting Document).

We show how in the framework used for the IRB approach, which can technically be described as a one factor credit risk model setting, expected positive exposure is the appropriate measure of credit risk in a portfolio of counterparties having market – driven exposures.

Definition of expected positive exposure

We consider a portfolio of derivatives, for the moment with a single counterparty, over a time interval $[0, T]$. In practice T is one year, but there is no need to be specific here. The exposure to a counterparty is a function of the value of the counterparty portfolio.

$V_A(t)$	Realized value of counterparty A's portfolio at time t , $0 \leq t \leq T$
$E_A(t) = \max(0, V_A(t))$	Resulting (positive) exposure at time t

It is useful to imagine the portfolio as undergoing a Monte- Carlo simulation of the sort commonly used to calculate PFE, but restricted to the time interval $[0, T]$. Each simulation would generate a path of realized values $V_A(t)$ through time (in practice, determined for a discrete set of times within the interval). In a PFE calculation the maximum exposure would be recorded from that path. Here our concern is instead the time averaged exposure corresponding to that particular path:

$$E_A = \frac{1}{T} \int_{t=0}^T E_A(t) dt$$

We may now define expected positive exposure. It is convenient to introduce a related measure, the so called *mean square exposure*, at the same time.

Expected positive exposure

The expected positive exposure is the average over all paths $E_A(t) = \max(0, V_A(t))$, with respect to the normal real measure on those paths. We write

$$\bar{E}_A = \mu(E_A) = \mu\left(\frac{1}{T} \int_{t=0}^T E_A(t) dt\right) = \frac{1}{T} \int_{t=0}^T \mu(E_A(t)) dt$$

where μ denotes expectation over possible paths of the market.

Root Mean Square exposure

In the same situation as above we also define root mean square exposure, which is defined by the expression

$$\bar{F}_A = \sqrt{\mu\left(\frac{1}{T} \int_{t=0}^T E_A(t)^2 dt\right)} = \sqrt{\frac{1}{T} \int_{t=0}^T \mu(E_A(t)^2) dt}$$

This measures the amount of volatility in the exposure. Note that like expected positive exposure the root mean square exposure is not “truly” path dependent. It is similarly easy to calculate.

Summary

These two important definitions are summarized below.

Expected positive exposure	$\bar{E}_A = \mu\left(\frac{1}{T} \int_{t=0}^T E_A(t) dt\right)$
Root Mean Square exposure	$\bar{F}_A^2 = \mu\left(\frac{1}{T} \int_{t=0}^T E_A(t)^2 dt\right)$

Example calculations

To provide intuition we give example calculations. These show that in a net portfolio the expected positive exposure contains similar information to counterparty level VaR: it is proportional to VaR when the underlying markets follow arithmetic Brownian motion and the spot mark to market is zero³⁹. We then indicate what happens when the portfolio mark to market is different from zero, and analyse the case of more than one netting set.

As in the definition the exposure at time t is the uncertain amount $E_A(t) = \max(0, V_A(t))$ where $V_0 = V(0)$ is the spot MTM and the expected positive exposure is given by:

$$\bar{E}_A = \mu\left(\frac{1}{T} \int_{t=0}^T E_A(t) dt\right)$$

Suppose the portfolio has positions in various markets (we do not need to know specifically what they are) leading to an overall market volatility of value given by σ . Dropping the subscript A for convenience, this means that under our assumptions, the value of the portfolio and exposure at time t are modelled as

$$V(t) = V_0 + \sigma\sqrt{t}X \text{ and } E(t) = \max(0, V_0 + \sigma\sqrt{t}X)$$

where X is a normally distributed random variable with zero mean and unit variance. Therefore, the expected exposure at time t , $0 \leq t \leq T$, is given by

$$\mu(E_A(t)) = \int_{x=-V_0/\sigma\sqrt{t}}^{\infty} (V_0 + \sigma\sqrt{t}x) \frac{e^{-x^2/2}}{\sqrt{2\pi}} dx = V_0 N\left(\frac{V_0}{\sigma\sqrt{t}}\right) + \frac{\sigma\sqrt{t}}{\sqrt{2\pi}} e^{-\frac{1}{2}\left(\frac{V_0}{\sigma\sqrt{t}}\right)^2}$$

where $N(x)$ is the cumulative normal distribution.

The at market portfolio (MTM = 0)

If $V_0 = 0$ the expression above reduces to

$$\mu(E_A(t)) = \int_{x=0}^{\infty} \sigma\sqrt{t}x \frac{e^{-x^2/2}}{\sqrt{2\pi}} dx = \frac{\sigma\sqrt{t}}{\sqrt{2\pi}};$$

and in this case integration over time gives

$$\bar{E}_A = \frac{1}{T} \int_{t=0}^T \frac{\sigma\sqrt{t}}{\sqrt{2\pi}} dt = \frac{2}{3\sqrt{2\pi}} \sigma\sqrt{T} \cong 0.27\sigma\sqrt{T}$$

Root mean square exposure

In the same case $V_0 = 0$ the root mean square exposure is evaluated by calculating:

$$\mu(E_A^2(t)) = \int_{x=0}^{\infty} \sigma^2 t x^2 \frac{e^{-x^2/2}}{\sqrt{2\pi}} dx = \frac{\sigma^2 t}{2} \text{ and } \bar{F}_A = \sqrt{\frac{1}{T} \int_{t=0}^T \frac{\sigma^2 t}{2} dt} = \frac{1}{2} \sigma\sqrt{T}$$

Comparison with 10 day VaR

For the same portfolio the 10 day VaR at 99% confidence is $2.33 \times \sqrt{10/260} \times \sigma$. If $T = 1$ year then comparing the expressions for \bar{E}_A and \bar{F}_A we obtain the approximations

$$\bar{E}_A \cong 0.6 \times \text{VaR} \text{ and } \bar{F}_A \cong 1.1 \times \text{VaR}$$

MTM different to zero

When the spot mark to market is not zero we may still integrate over time, although the answer is more complicated. As before, at a time t we have

$$\mu(E_A(t)) = \int_{x=-V_0/\sigma\sqrt{t}}^{\infty} (V_0 + \sigma\sqrt{t}x) \frac{e^{-x^2/2}}{\sqrt{2\pi}} dx = V_0 N\left(\frac{V_0}{\sigma\sqrt{t}}\right) + \frac{\sigma\sqrt{t}}{\sqrt{2\pi}} e^{-\frac{1}{2}\left(\frac{V_0}{\sigma\sqrt{t}}\right)^2}$$

³⁹ Strictly speaking all that is needed is that the change in the portfolio value should be normal. As practitioners know this tends to be approximately true under a variety of models for the underlyings.

When $V < 0$ (writing plain V for V_0), then for an obligor with spot MTM V , the time integral of this quantity is given by:

$$\bar{E}(V) = N\left(\frac{V}{\sigma\sqrt{T}}\right)\left(V + \frac{V^3}{3\sigma^2 T}\right) + \frac{e^{-V^2/2\sigma^2 T}}{\sqrt{2\pi}}\left(\frac{1}{3}\frac{V^2}{\sigma\sqrt{T}} + \frac{2}{3}\sigma\sqrt{T}\right)$$

For $V > 0$ the expected exposure is given by what can be termed a “put call parity” relationship

$$\bar{E}(V) - \bar{E}(-V) = V$$

where $\bar{E}(-V)$ is given by the formula above. We can use these results to examine the expected exposure when $V \neq 0$. For $V < 0$ the first formula applies. The expected exposure is known to be positive by definition while the first bracket on the right hand side is always negative, so that for $V < 0$ we must always have

$$\bar{E}(V) < \frac{e^{-V^2/2\sigma^2 T}}{\sqrt{2\pi}}\left(\frac{1}{3}\frac{V^2}{\sigma\sqrt{T}} + \frac{2}{3}\sigma\sqrt{T}\right)$$

The right hand side clearly tends to zero for very negative V . Moreover the right hand side is easily shown to have its maximum value at $V = 0$. From this and $\bar{E}(V) = V + \bar{E}(-V)$ we deduce that

$$\bar{E}(V) < \max(0, V) + \bar{E}(0)$$

always holds. This justifies the treatment of non – zero mark to market outlined in Section G.

Expected positive exposure and netting

The results above have assumed that the portfolio is fully nettable, or in other words that it consists of a single netting set. In general, the expected positive exposure for a portfolio is exactly equal to the sum of the expected positive exposure for each netting set in the portfolio.

Suppose obligor A’s portfolio consists of n netting sets labeled $A_1 - A_n$. As above let the total exposure at time t be $E_A(t) : 0 \leq t \leq T$. Then by definition of exposure and netting sets the exposure at any time t is the sum of the exposures to each of the portfolios $A_1 - A_n$. Therefore at any time and for values of the market variables underlying the portfolio,

$$E_A(t) = \sum_{i=1}^n E_{A_i}(t)$$

Therefore

$$\frac{1}{T} \int_0^T E_A(t) dt = \frac{1}{T} \int_0^T \sum_{i=1}^n E_{A_i}(t) dt = \sum_{i=1}^n \frac{1}{T} \int_0^T E_{A_i}(t) dt$$

The right hand side and left hand side are two random variables that have equal values no matter what values the market may take over time. Therefore the averages of these two random variables over possible paths of the market are the same, and it follows that the expected positive exposure to A is the sum of the expected positive exposures to each netting set, as required.

Expected positive exposure and the IRB approach to capital

The IRB approach of the New Accord rests on the conceptual framework of systematic risk in a one factor model. As noted by several authors (particularly see Michael Gordy’s recent paper [3]), this framework is worthy of choice because it provides additive risk weights, which substantially and prudently account for the majority of the credit risk of a portfolio.

The one factor model concept is already embodied in the formulae of the IRB approach. Specifically, this approach uses the one factor Merton model (also called the Vasicek model). The link is noted and explained in [3]. Aside from the maturity adjustment, we may say that under the IRB approach

Capital = Systematic contribution to 99.5% confidence level losses, under the Merton model

It is impossible to give a full background to this aspect of credit risk modelling here. See the references at the end of this Annex, particularly Michael Gordy [3], Hickman and Koyluoglu [4] and the references to earlier work in [4].

We must however introduce the concept of a *one factor credit risk model*. This simple and universal class of models in which economic factors are represented by a single random variable. Models of this class are called one – factor models. Each of the publicly available models has a one – factor form retaining most of the material features of the model.

One factor models

A one factor model is a model of portfolio credit risk in which each default probability is a function of a single random variable, which we will denote by the symbol X . This is the means by which the model makes default probabilities depend on external (e.g. economic) factors affecting the whole portfolio, and is present in all the well known credit risk models. The following notation will be used with respect to one factor credit risk models:

$0 \leq t \leq T$	Time horizon
A	Counterparty
X	Systematic factor (a random variable)
$p_A(x)$	Default probability of A, showing dependence on systematic factor X
$q_A(x) = p_A(x)T$	Cumulative default probability of A over the time horizon, conditional on the systematic factor X.

We analyse a portfolio of market risky counterparty portfolios in the context of a one factor model. We use the notation above.

One factor modelling of a portfolio of counterparty portfolios

Consider a portfolio in which each exposure is an OTC derivatives portfolio with a given counterparty. First, consider the portfolio conditional on X and all the exposures at all times. That is, assume they are all fixed. We first determine the moment generating function.

The moment generating function

To proceed we want to write down the moment generating function (“MGF”) of the loss distribution. Recall that the MGF is a function of the variable z defined as

$$MGF_Y(z) = \mu(e^{zY})$$

where Y is a random variable. Note that

$$\left. \frac{dMGF(z)}{dz} \right|_{z=0} = \mu(Y) \text{ and } \left. \frac{d^2MGF(z)}{dz^2} \right|_{z=0} = \mu(Y)^2 + \sigma(Y)^2$$

In our case, the random variable is the distribution of losses conditional on both the systematic variable X and additionally on each exposure over time. The element of risk arising from the exposure to counterparty A over the short time interval $[t, t + dt]$ then gives rise to a moment generating function

$$1 - p_A(x)dt + p_A(x)dt \exp(zE_A(t)) = \exp(p_A(x)dt(\exp(zE_A(t)) - 1))$$

Here we are only ignoring squares of the vanishing term pdt . If we moreover treat the events of default as independent, instead of mutually exclusive for each counterparty, then this amounts to ignoring terms of the second order in the overall default probabilities p . This is usually acceptable provided p are not too large. Then the overall MGF for a single obligor A is, still conditional on its exposure path over time:

$$\exp\left(\frac{q_A(x)}{T} \int_0^T (\exp(zE_A(t)) - 1) dt\right)$$

hence taking the product over all obligors: the MGF, still conditional on both the systematic variable and on the exposures, is given by:

$$MGF_{x,E_A(t)}(z) = \exp\left(\sum_A q_A(x) \left(\frac{1}{T} \int_0^T \exp(zE_A(t)) dt - 1\right)\right)$$

On differentiating once and twice, and setting $z = 0$ we obtain the conditional mean and variance of the loss distribution:

$$\mu(x, E_A(t)) = \sum_A q_A(x) \left(\frac{1}{T} \int_0^T E_A(t) dt \right)$$

$$\sigma^2(x, E_A(t)) = \sum_A q_A(x) \left(\frac{1}{T} \int_0^T E_A(t)^2 dt \right)$$

Next, we calculate the mean and variance unconditional on the exposures, and conditional only on the systematic factor X , using the following general formulae to eliminate conditioning on the exposures:

$$\mu(x) = \mu(\mu(x, E_A(t))) \text{ and } \sigma^2(x) = \mu(\sigma^2(x, E_A(t))) + \sigma^2(\mu(x, E_A(t)))$$

Thus

$$\mu(x) = \sum_A q_A(x) \mu \left(\frac{1}{T} \int_0^T E_A(t) dt \right)$$

$$\sigma^2(x) = \sum_A q_A(x) \mu \left(\frac{1}{T} \int_0^T E_A(t)^2 dt \right) + \sigma^2 \left(\sum_A q_A(x) \left(\frac{1}{T} \int_0^T E_A(t) dt \right) \right)$$

The formula for the standard deviation contains two terms, each containing a measure which could be called the “mean square exposure”, but defined differently according to the order of integration with respect to time and averaging over different markets. The second term is typically of second order, and can normally be ignored, but we briefly discuss why this is so.

First, it is important to note that at this stage we have made no assumptions whatsoever about the correlations which may exist between exposures to different counterparties. Surprisingly the “main term”, which is the left hand summand of the formula for variance above, carries no information about this codependence because it is an expectation of a sum of random variables. However the size of the other term does depend on these correlations and we need to assess the effect of these in overview.

A portfolio of counterparties can be viewed as lying somewhere between two extremes. In a portfolio with very few underlying market factors, counterparty exposure correlations will tend to be either significantly positive or significantly negative depending on the directions of positions taken, so that correlations show wide variability about 0. In a more sophisticated portfolio in which counterparties have a number of market positions, correlations will tend to be closely clustered around zero. The more clustered the correlations are, the more nearly the following equality will hold:

$$\sigma^2 \left(\sum_A q_A(x) \left(\frac{1}{T} \int_0^T E_A(t) dt \right) \right) = \sum_A q_A(x)^2 \sigma^2 \left(\frac{1}{T} \int_0^T E_A(t) dt \right) = O(q_A^2)$$

In this case as indicated, the whole term will be second order in the default probabilities⁴⁰. Then it is reasonable to neglect this term as approximations to the same order have already been made in the derivation of the MGF above. At the opposite extreme, for a portfolio having only one market factor the term will be more significant, but in general when correlations are dispersed around zero, there will be offsetting effects within this term⁴¹.

In summary we may typically neglect the second order term and proceed with the approximation:

$$\sigma^2(x) = \sum_A q_A(x) \mu \left(\frac{1}{T} \int_0^T E_A(t)^2 dt \right)$$

In view of our definitions earlier we have

$$\mu(x) = \sum_A q_A(x) \bar{E}_A \text{ and } \sigma^2(x) = \sum_A q_A(x) \bar{F}_A^2$$

⁴⁰ It can be shown that, using the same notation as above,

$$\sigma^2(1/T \int_0^T E_A(t) dt) = \sigma^2 T (51\pi - 64) / 288\pi \sim 0.1 \sigma^2 T$$

⁴¹ This is, however, an area that would benefit from further modelling work.

This is in exact analogy with the formulae for the mean and standard deviation of the Poisson distribution when the exposures are fixed – it is easy to see that for a fixed exposure N one has

$$\bar{E}_A = \bar{F}_A = N_A$$

The situation may be characterised as follows: with each derivatives portfolio are associated two exposures, one (E_A) for the purpose of calculating expected loss and systematic risk and another (F_A) for the purpose of assessing unsystematic risk.

The systematic risk distribution

To ascertain that the right measure of systematic risk is the expected positive exposure E_A we need to take the systematic limit. That is, we replace each counterparty A with n counterparties indexed by an additional suffix i , $1 \leq i \leq n$, each having exposure represented by $1/n$ times the original random variable representing the original counterparty, but now independent. This corresponds to the notion, explained more fully in [1], IRB Consultative Document, Chapter 8, Section II, of a portfolio with many small exposures or an “infinitely granular” portfolio. We have:

$$\mu_n(x) = \sum_{A,i} q_{A,i}(x) \bar{E}_{A,i} = \sum_A \frac{q_A(x)}{n} \bar{E}_A \sum_i 1 = \mu(x)$$

$$\sigma_n^2(x) = \sum_{A,i} q_{A,i}(x) \bar{F}_{A,i}^2 = \sum_A \frac{q_A(x)}{n^2} \bar{F}_A^2 \sum_i 1 = \frac{\sigma^2(x)}{n} \rightarrow 0$$

Conditional on the value of the variable X , the standard deviation tends to zero in the systematic limit. For any given level of the factor X , losses are “sure” to be equal to $\mu(X)$ ⁴². This result can be paraphrased as follows, subject to the modeling assumptions above:

The systematic distribution of credit losses from a counterparty portfolio is the distribution of the variable

$$\mu(X) = \sum_A q_A(X) \bar{E}_A$$

representing the expected loss conditional on the value of the systematic factor X , and weighted by the exposure to each counterparty A calculated as the expected positive exposure \bar{E}_A .

The methodology of the Internal Rating Based approach (see [1], IRB Consultative document, paragraph 172) is the special case of this result where the exposures happen to be fixed, for there, as already noted, the current exposure and the expected positive exposure are equal.

Capital requirement

Following the reasoning of the IRB approach, and using the result above, we have that the capital for a counterparty is the contribution to the systematic risk distribution, which is⁴³

$$\text{Capital} = \text{Systematic risk contribution} = \bar{E}_A q(x_{99.5\%})$$

In other words, a counterparty portfolio and a loan to the same counterparty equal to its expected positive exposure have the same capital requirement under the IRB methodology. Thus the correct exposure to multiply by the base risk weight should be the expected positive exposure. This establishes expected positive exposure as the exact analogue of loan exposure, to which it reduces in the fixed case, for capital calculations based on systematic risk.

⁴² Strictly speaking Chebyshev’s inequality shows that conditional on X , the distribution tends to the distribution of a variable that is equal to the conditional mean loss with certainty.

⁴³ The percentile chosen here, 99.5%, is the one used in the equations of the IRB approach.

References

- [1] Basel Committee on Banking Supervision, *The New Basel Capital Accord*, January 2001
- [2] ISDA, *A New Capital Adequacy Framework*, February 2000
- [3] Michael Gordy, *A Risk Factor Model Foundation for Ratings-Based Bank Capital Rules*, Working Paper, February 2001
- [4] H. Ugur Koyluoglu and Andrew Hickman, *Reconcilable differences*, RISK, October 1998
- [5] Basel Committee, *Treatment of Potential Exposure for Off – Balance Sheet Items*, Basel, April 1995, available from www.bis.org

ANNEX 2 : THE TREATMENT OF SECURITIES FINANCING/LIQUIDITY TRANSACTIONS UNDER THE NEW CAPITAL ACCORD

1- INTRODUCTION AND GENERAL OBSERVATIONS

The draft Accord states that the proposals set out to reform the capital rules relating to credit risk in the banking book, but it is not clear from either the paper or from discussions with regulators during the consultation period, whether there is any intention to apply the current Basel credit risk mitigation proposals to the trading book. To do so would seriously affect capital requirements and market liquidity, particularly for securities financing/liquidity transactions⁴⁴. Even setting aside the potential market implications of applying the banking book treatment to the trading book, this option is misguided in principle: securities financing/liquidity transactions form a distinct class of activity and a regulatory capital approach appropriate to them needs to be developed from first principles..

If the Committee should decide that changes to the trading book treatment of these transactions would now be advisable, these ideas should be exposed through a follow-on consultative process separate from the one now underway. It would be procedurally inappropriate to make major changes to the trading book regime without a due period of consultation. We therefore recommend that to maintain the integrity of the consultative process and to achieve sensible risk-based capital treatment for financing transactions, regulators not change the present trading book treatment for these transactions at this time.

If regulators wish to consider the development of a more robust risk-based approach to regulatory capital requirements for trading book financing transactions, the industry would be more than happy to work on this project as part of follow-on consultative process.

If however regulators were to implement new trading book treatment for financing transactions without due consultation, it should be recognised that there will be a serious risk of market disruption; to reduce the probability of such problems, we would recommend that national regulators be provided with broad latitude to approve risk-based internal model estimates of capital requirements for these transactions. We would be concerned that regulator's flexibility not be excessively constrained by implementation in the revised Accord of substantial qualitative or quantitative standards regarding these models. While not putting such standards in place runs some risk of a non-level playing field, this risk is modest as compared with the danger of hastily conceived standards leading to market disruption.

2- MARKET IMPLICATIONS

Securities financing/liquidity transactions are broadly recognised - by both participants and regulators - as an important element of the infrastructure of securities markets. We cannot put it better than the regulators themselves, in the following extract from the 1999 IOSCO/CPSS report⁴⁵:

Securities lending transactions [which, in this context, includes repos and buy/sellbacks] have grown very substantially in recent years. While such transactions have been important for some time in several national markets, their overall significance within the

⁴⁴ By "securities financing/liquidity transactions", we mean those transactions which consist of financing of, or by, securities positions; this category would include stock lending/borrowing, repos and reverse repo, buy/sellbacks and sell/buybacks, prime brokerage and margin lending activities.

⁴⁵ "Securities Lending Transactions: Market Development and Implications", Technical Committee of the International Organization of Securities Commissions/Committee on Payment and Settlement Systems, July 1999, section 5.1.

financial system has increased notably in the last decade. Today, securities lending is an integral component of nearly all active securities markets, both domestic and international.

The cash-driven market provides a means for market participants to finance securities positions at rates generally below unsecured borrowing rates and gives cash lenders access to a flexible money market instrument. The securities-driven market increases the liquidity of securities markets by providing a means for participants to borrow securities on a temporary basis, usually against cash or other collateral. This reduces the potential for failed settlements. It also facilitates investment and trading strategies that would not be possible without a liquid supply of securities available for borrowing, including "fundamental short" strategies as well as market-neutral arbitrage strategies such as cash versus futures arbitrage, convertible bond arbitrage, or dividend-related arbitrage. In addition, many market participants now borrow securities to hedge offsetting positions they have taken on through derivative instruments.

In the most active markets, securities-driven lending is no longer a specialised activity, but is widespread among many different types of market participants. It allows portfolio managers and institutional investors to earn incremental income by lending out idle securities held in custody on a collateralised basis. This activity may also increase repo market activity since the cash collateral for securities loans is frequently reinvested in the repo market. Securities firms and their customers depend on the ability to borrow securities to hedge risks and to arbitrage price differentials across markets. The extent of this arbitrage has an important effect in increasing the efficiency of market prices and in increasing the linkage between securities markets and other markets, such as associated futures and options markets.

The growth of securities lending is attributable in large measure to the positive effects securities lending has had on both investment activity and securities settlement arrangements. These benefits should continue to promote the development of liquid securities lending markets. Other factors may also influence the rate of growth in securities lending ... growth can be influenced significantly by the attitudes and policies of national market regulators, as well as by the approaches taken by market participants.

Overall, it is reasonable to expect that securities lending activity will become an ever more deeply embedded part of contemporary securities markets. The perceived benefits of securities lending are seen as important by most national regulators, and thus it is likely that most national and international markets will continue to see increased levels of activity.

Against this background, governments, central banks, supervisors and the industry have a clear common interest in ensuring that the regulatory environment for securities financing/liquidity transactions facilitates - or, at the very least, does not damage - this important element of the market infrastructure. We recognise, of course, that there are legitimate prudential concerns here, but it is essential that an appropriate balance should be struck and that the capital charges imposed should be proportionate to the risk.

Liquidity in the capital markets is essential to ensure that they function efficiently and thus aid the financing of the real economy. Liquidity also aids price stability by ensuring that shortages of stock are kept to a minimum and that there is a deep market where prices quoted are those at which transactions may be undertaken. These markets are the primary source of liquidity for most institutions, particularly in times of stress. In our view, and we believe also those agencies responsible for the safe functioning of capital markets, **it is of extreme importance that care is taken not to impair the liquidity of the market which would serve to increase systemic risk.** The attached annex discusses some of the issues related to this problem.

3- PRINCIPAL FEATURES OF SECURITIES FINANCING/LIQUIDITY BUSINESS

a) Transactions

The starting point for an analysis of the appropriate regulatory capital requirement for securities financing/liquidity transactions must be the features of the transactions themselves. We summarise them as follows:

- they involve the exchange of one set of assets (securities) for another (cash and/or securities) for a period of time (which may or may not be fixed). These two "sides" of the transaction are not the result of separate decisions but form an indivisible whole;
- they are undertaken for liquidity purposes (i.e. to finance trading activities and to meet short term cash or securities needs);
- in the overwhelming majority of cases, the assets involved are in the trading book and by definition meet the appropriate tradeability and valuation criteria.

From this position, the differences between a securities financing/liquidity transaction and a collateralised exposure are quite evident. The Basel Committee itself defines a collateralised transaction as "*one in which:*

- *a bank has a credit exposure or potential credit exposure to another party ... and*
- *the exposure or potential exposure is hedged in whole or in part by collateral posted by the counterparty*"⁴⁶.

This definition rests on there having been two distinct decisions: first, to undertake a transaction giving rise to a credit exposure; and second, to take collateral against that exposure. In a securities financing/liquidity transaction, by contrast, the credit exposure at any point in time is not the gross value of the assets transferred to the counterparty but rather the net value of what has been exchanged⁴⁷; in this sense, securities financing/liquidity transactions are closer to asset swaps than collateralised loans.

b) Market practices

The market for securities financing/liquidity transactions is above all an interprofessional one, where practices and procedures are well established and their robustness tested over many years. Defaults and disputes are extremely rare in this market. Even where defaults and disputes have occurred losses have been even rarer – to the extent that many market participants state that they have never incurred a loss in this area. These characteristics are a function of robust and disciplined market practices in relation to credit and documentation and the short term nature of these transactions – a high proportion of which are overnight. Specifically these market practices include:

Credit risk management practices:

- use of initial margin, sufficient to cover the liquidity, price volatility and close-out characteristics of the securities involved in the transaction;
- daily marking to market and re-margining;
- monitoring for potential events of default and prompt action on the occurrence of such an event.

Documentation standards:

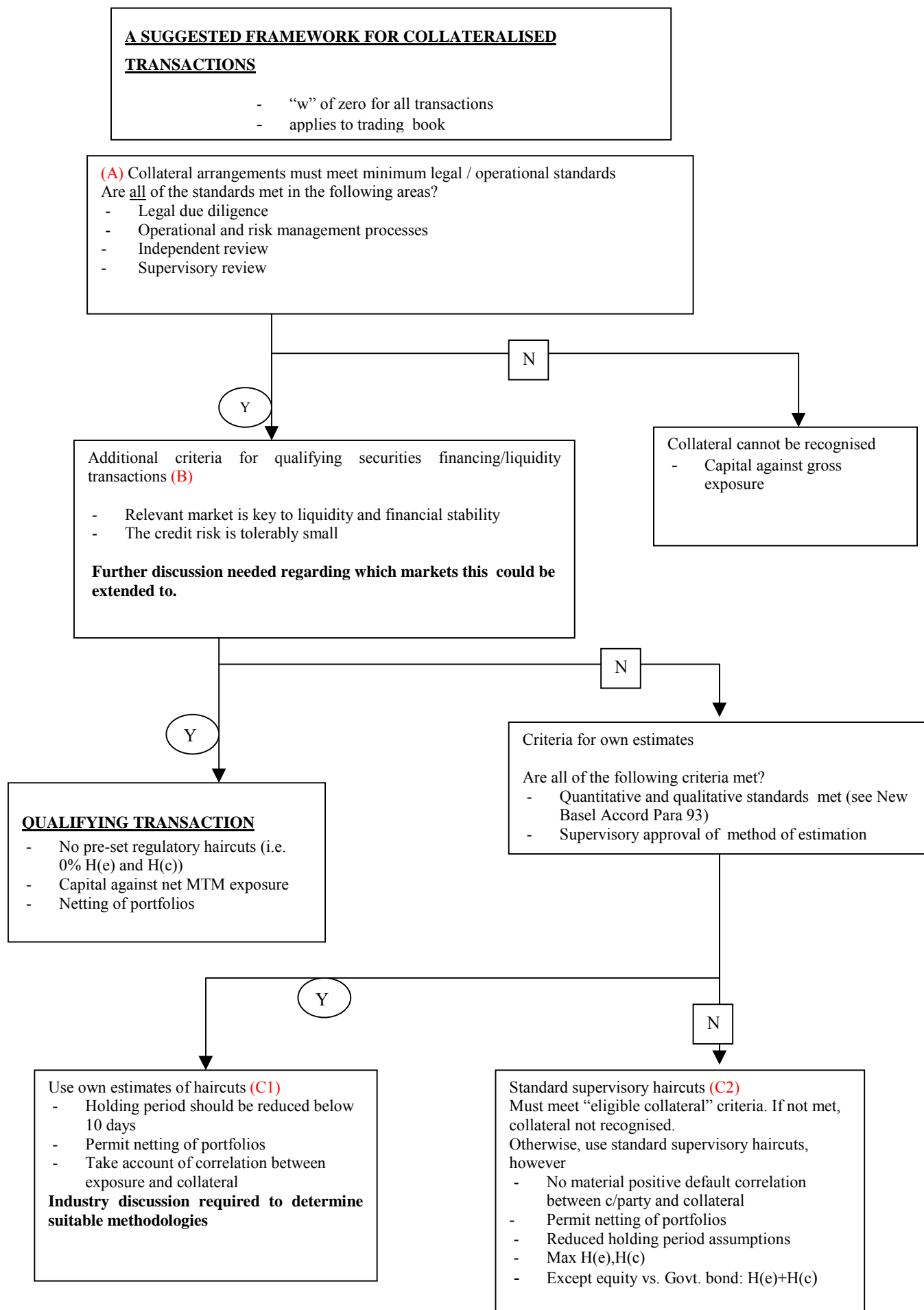
- use of long-standing, robust documentation, such as widely used master agreements which, inter alia:
 - include as events of default the counterparty's failure to re-deliver on termination or to meet margin calls;

⁴⁶ Paragraph 64 of the draft revised Accord

⁴⁷ There is, of course, a need for minimum standards on legal robustness - see section below.

- give the non-defaulting party the immediate right to: close-out all transactions under the agreement and offset its claims against those of its counterparty; and seize the "collateral";
- confirmation that the documentation is enforceable.

4- PROPOSED REGULATORY CAPITAL TREATMENT



a) Definition and general rules

We acknowledge that this business is not risk free, and that credit risks remain. We have described in section 0 above the qualitative characteristics of securities financing/liquidity transactions which lead us to believe that this business should be subject to tailored capital adequacy requirements distinct from the normal rules applying to collateralised exposures. We recognise, however, that this approach will not be practicable unless a clear boundary can be drawn around the transactions to be included in such a regime. We believe this can be achieved in the setting of appropriate minimum operational and legal standards (see section below) which are to be applied to banks and securities firms participating in this market.

b) “w-factor”

We explain elsewhere in our submissions on the new Accord why in general terms we believe that the Basel Committee's proposed "residual risk" charge (the so-called "w" factor) is inappropriate for all transactions⁴⁸.

c) Minimum standards for recognition of collateral

[See Flowchart reference A “Collateral arrangements must meet minimum legal/operational standards”]

We recommend that securities financing/liquidity transactions should meet minimum documentation and other standards. We have considered whether the Basel Committee's proposed standards for collateral are appropriate and have concluded that they need some modifications⁴⁹ given the particular characteristics of these transactions. Our proposed minimum operational standards for securities financing/liquidity transactions are:

- *Legal due diligence:*
 - legal documentation and requisite procedural steps must have been taken which give the institution:
 - (i) ownership of the assets received subject to an obligation to return equivalent assets, where the return obligation can be set-off against the counterparty's obligation to the institution; or
 - (ii) rights in and to the assets received which are recognised, in the event of default by the counterparty and in the event of the counterparty's insolvency, in priority to rights of the counterparty and or creditors of the counterparty (other than liens or similar rights arising by operation of law);
 - the institution must have conducted (or have had conducted on its behalf) a legal review which is sufficient, taking into account any multi-jurisdictional aspects, for it to have a reasonable basis for concluding that the above requirements are satisfied. There must be a process for reviewing at appropriate intervals whether there have been changes in applicable laws and, if so, for re-considering if the requirements continue to be met;
 - where assets are held by a custodian or by a financial intermediary, the institution must seek to ensure that that party ensures adequate segregation from its own assets;
 - the documentation must provide for daily marking to market and the institution must have the right to make daily margin calls;
- *Operational and risk management processes:*
 - there should be clear policies and procedures for securities financing/liquidity business covering, inter alia:

⁴⁸ Briefly: there is nothing fundamentally different or more risky about the legal documentation used for credit risk mitigation transactions as opposed to any other contract which an institution undertakes; the documentation used must be legally robust in order to meet the minimum standards; and the proposed operational risk charge is in any case supposed to cover any remaining documentation risk.

⁴⁹ This is not intended to suggest, incidentally, that we think that proposed minimum standards are acceptable for collateral in general. We will comment on this elsewhere.

- (i) legal and documentation requirements, including the circumstances in which any significant departure from standard agreements is permitted;
 - (ii) initial margin requirements: standard margins, procedures for approving any reduction for a particular counterparty, credit procedures for assessing whether margin requirements should be increased in relation to a particular counterparty;
 - (iii) marking to market and re-margining;
 - (iv) default and dispute resolution procedures;
- systems should be capable of tracking assets given/received and outstanding/failed settlements.
- *Independent review*: the firm's practices, procedures and control framework should be subject to independent scrutiny and review by a firm's internal/external auditors and risk assessment division.
- *Supervisory review*: the relevant supervisory agency should assess whether a firm operates the minimum standards set out above, in accordance with the firm's documented procedures. Regulators should be kept informed of material modifications to them.

d) Proposed regulatory capital treatment for securities financing/liquidity transactions

- *Qualifying transactions* [See Flowchart reference B "Additional criteria for qualifying securities financing/liquidity transactions"]
 1. In section 0 above we have described the importance of the securities financing/liquidity markets to liquidity and financial stability. We therefore support the proposal that there should be a subset of securities financing/liquidity transactions to which standard haircuts do not apply. We also agree with the Basel Committee's assessment that "the credit risk may be very small on well-documented repo transactions in liquid securities conducted with experienced counterparties and settled quickly across proven settlement systems"⁵⁰. In situations where the credit risk is small, we believe that it is preferable not to impose haircuts where doing so would risk impairing the liquidity of an important market.

We recognise that further work is needed to determine the appropriate scope and criteria for this treatment, and we would like a continued dialogue with the Basel Committee and Financial Stability Forum on this subject. Furthermore, we do not think that this capital regime should be restricted by reference to *domestic* settlement systems and documentation (if indeed such things exist in the today's market): such an approach would create pricing inequalities which could damage liquidity.

The current credit exposure in a securities financing/liquidity transaction is the net mark to market value, if positive. Therefore, for securities financing/liquidity transactions meeting the above criteria, the counterparty exposure should be calculated as the difference (if positive) between the mark to market value of the assets given and the mark to market value of the assets received. We believe that netting should be permitted on a portfolio basis. We recognise that this is a complex issue, but it nevertheless needs to be addressed and we would welcome a dialogue with the Committee.

- *Treatment of securities financing/liquidity transactions that are not qualifying transactions*
 1. *Haircuts*:
For transactions that do not qualify for inclusion in the securities financing/liquidity transactions carve out, we accept, at least in principle, that haircuts of some form represent a reasonable approach to estimating this risk, although we do not believe that the collateral haircuts proposed in the draft Accord are appropriate. Our reasons are the following:
 - in the rare cases where defaults have been called on securities financing/liquidity transactions, the evidence suggests that standard industry margins - which are well below the proposed collateral haircuts - have in most cases been sufficient to cover the potential future exposure;

⁵⁰

Paragraph 160 of the Supporting Document on "The Standardised Approach to Credit Risk".

- there is no "grace period" in standard agreements, and in practice close-out/realisation will occur within a few days. A ten day holding assumption is therefore far too long for these transactions;
- liquidation occurs when the collateral is sold or hedged rather than at the point of settlement; after the trade, the market risk of the collateral has effectively been closed out;
- for risk management reasons, the assets exchanged will usually be positively correlated so that the price volatility of the transaction as a whole will be less than that of either side alone.

2. *Own estimation: [See Flowchart reference C1]*

Where the standards for use of own estimates for haircuts⁵¹ have been met and the firm has received supervisory approval for its method of estimation, it should be permitted to use its own haircuts without eligibility restriction on the assets, given the trading book mark to market and tradeability criteria (although we also believe that this holds in principle for those using the standardised haircuts, we recognise that it may not be practicable to specify standard haircuts for a wider range of securities). For the reasons described above, the holding period assumption should be significantly reduced. Collateral should be recognised also when there is a positive default correlation between the counterparty and the collateral, since firms that have the modelling skills to estimate their own haircuts would be able to factor the positive default correlation into the size of the haircut. The counterparty exposure should be based on the net mark to market exposure.

The treatment of netting, correlation and portfolio effects for counterparties with more than one transaction also needs consideration. Although in its Internal Models approach under the comprehensive approach to collateral, the New Accord proposes to allow banks to use their own models to calculate haircuts at the individual instrument level, no attempt has been made to move towards a fuller recognition of the benefits of diversification between individual transactions and their associated risk positions which exists in a typical large portfolio of trades. Thus, even under the internal models calculation of haircuts separate values H_E , H_C , and H_{FX} , must be calculated and then treated the same way as in the standardised approach. We believe that it is time for a more modern approach to haircuts generally, in which banks with the appropriate sophistication in modelling market risks should be allowed to use well established modelling techniques to assess diversification and concentration when calculating haircuts at the counterparty level. In this context, we draw the attention of the Basel Committee to Annex 1, containing an analysis of the economically similar case of collateralised counterparty risk.

3. *Standard supervisory haircuts: [See Flowchart reference C2]*

For banks which do not meet the standards for use of own estimates for haircuts, and are therefore using the standard haircuts, a capital charge based on a 10 day close out period is too long and should be reduced by at least half.

⁵¹ It would not be a prerequisite to have VAR model approval to use this option.

TABLE: suggested haircuts for financing/liquidity transactions (4 day, 99% confidence)

Issue rating	Residual maturity	Sovereigns	Banks/corporates
AAA/AA	≤ 1 year	0.2	0.3
	> 1 year, ≤ 5 years	1	2
	> 5 years	2	4
A/BBB	≤ 1 year	0.4	0.6
	> 1 year, ≤ 5 years	2	3
	> 5 years	4	6
BB	≤ 1 year	9	
	> 1 year, ≤ 5 years	9	
	> 5 years	9	
Main index equities		6	
Other equities listed on a recognised exchange		9	
Cash		0	
Gold		4	

The haircuts should distinguish between different instruments and be based on appropriate close out periods for different types of instrument. We wish to continue the dialogue with the Basel Committee on what the appropriate haircuts and liquidation periods should be. These haircuts would of course need to be scaled up if the institutions did not remargin daily or there was the possibility of an automatic stay. The haircut would be based on the larger of the haircuts for the assets given and that for the assets received, unless the transaction involved equities against government bonds. In such cases, because of the lack of positive correlation, both haircuts might be taken – a simplified and conservative approach to the problem. In order for collateral to be recognised there should not be a material positive default correlation between the counterparty and the collateral. The counterparty exposure should be based on the net mark to market exposure.

In our view, netting of portfolios should be permitted also in this approach. We recognise that this is a complex issue and we wish to discuss this further with the Basel Committee.

Annex

Impact of Basel proposals on the market

We commend the Committee for making significant efforts to more closely align regulatory capital requirements with actual risk, however we feel that any effort to impose the Credit Risk Mitigation proposals to the trading book would be conceptually flawed and could prove disastrous to the market. As the foundation of liquidity in most securities markets, the impact of such capital proposals on the securities financing market is of particular concern. Increasing capital requirements in such low margin, high volume markets will force participants to either exit such markets or charge a significantly higher price, thereby directly reducing market liquidity and operational efficiency.

We estimate that the increase in capital requirements under the Accord to be in the order of a 500 to 600% for an active market participant. Such an increase in capital requirements is completely inconsistent with the loss experience in these critical trading markets. One needs to examine carefully the benefits that active securities financing markets provide, especially in times of market disruption, versus the relatively small potential for loss in such transactions. For example, the US equity market dislocation experienced in 1987 resulted in significant liquidity, credit and settlement concerns. While one can speculate as to the driving force behind some of the selling pressure that arose during the crisis, it is instructive to look at the role securities financing transactions played in helping to resolve the crisis. Without the liquidity that such transactions provide, the resulting price dislocation would have been much more pronounced. Without the settlement facilities that such transactions provide (securities lending and repurchase), systemic risk may have caused significantly large losses across the markets. Similarly, the financial market events in Autumn 1998 (effective default by Russia) present a similar situation where securities financing transactions served to help resolve a severe market disruption in a controlled fashion. The effective default by the Russian government created a vacuum in which trading volumes contracted significantly and no effective price discovery existed. Only through securities lending and repurchase transactions were financial intermediaries able to bridge the imbalance in supply and demand to encourage orderly price discovery.

In summary, we consider that the imposition of the current proposals would lead to:

- Increased settlement risk: The high interdependence between market participants requires liquid settlement systems. Any decrease in ability to settle trades would increase credit risk dramatically.
- Decreased price transparency: Market arbitrage activities ensure validity and availability of prices and liquidity in securities. As the costs to conduct such critical arbitrage activity increases, such market disciplines would be adversely affected leading to increased pricing discrepancies.
- Decreased liquidity and higher capital costs: If additional and unwarranted cost or capital is imposed on a financing product, a pronounced impact results on those markets directly, as well as the markets that rely on such products. Specifically, we foresee lower liquidity and higher capital/financing costs of equity and debt. As a result, a significant knock-on effect will occur in the primary and secondary securities issuance and trading markets. The end result will be a negative impact on overall capital formation and economic growth.
- Choppy price action and increased volatility: Investors would not be assured of securities liquidity and would be exposed to higher levels of market risk.
- Adverse impact on credit and market risk management: The ability of investors and institutions to use such risk reducing tools would be significantly impacted as the cost of hedging transactions increases and the liquidity in these markets decreases. As a result, overall systemic risk would increase.
- Reduced product innovation: Securities financing forms a vital part of hedging strategies for derivative transactions. Without a cost effective hedging mechanism, further risk mitigation product development would be adversely affected.
- Increased transaction costs: Costs of various products offered to the markets would increase in order for market makers to make acceptable returns on their increased capital usage. This would again serve to reduce liquidity and increase overall market and credit risk for all participants.
- Concentration of risk: Banks would primarily be the method used to place cash in the market since financing transactions would become uneconomical. Such unsecured transactions would increase systemic risk and overall capital costs.

ANNEX 3 :COMPARATIVE LEGAL ANALYSIS OF CREDIT DERIVATIVES AND BANK GUARANTEES

[March 2001]

[A note by Allen and Overy]

[Annex 3 - Part I]

A. BACKGROUND

a. The 1988 Basle Capital Accord⁵²

The 1988 Basle Capital Accord (the "**1988 Accord**") has made a major contribution to enhancing the stability of the global banking system by setting minimum capital standards for internationally active banks. In 1999, the Basel Committee undertook the initiative of reviewing the 1988 Accord and published a consultative paper in June 1999 (the "**1999 Paper**"). The primary objective of the 1999 Paper was to invite comments from various institutions and market bodies relating to the 1988 Accord, with a view to implementing a new regulatory capital regime that would address the weaknesses of the 1988 Accord. The International Swaps and Derivatives Association, Inc. ("**ISDA**") published a formal response to the 1999 Paper in February 2000⁵³.

b. The New Basel Capital Accord

Following the consultation, the Basel Committee published a further consultative document in January 2001 setting out the proposed regulatory framework under the new Basel Accord (the "**New Accord**"). As the scope of the New Accord will apply to a substantial part of the ISDA membership, and the provisions of the New Accord have important implications for markets in OTC derivative products, ISDA, as a body representing a large number of participants in those markets, has a substantial interest in the development of the New Accord.

The New Accord represents a great leap in the recognition of credit protection techniques used in the market, particularly in widening the scope of guarantees and collateral eligible for regulatory capital relief. The New Accord also recognises the use of credit derivatives as a means of affording credit protection, thereby enabling reduced risk weightings to be applied to assets adopting this means of risk mitigation.

c. Credit Derivatives under the New Basel Accord

Although ISDA welcomes the general approach taken by the Basel Committee in the New Accord, it believes that certain aspects of the proposed framework relating to credit derivatives are inconsistent with the overall objective of the reform. In particular, the treatment of OTC credit derivative products under the New Accord, when contrasted with that given to bank guarantees, seems to be inconsistent with the extent of legal risks involved in these instruments. ISDA concludes that the proposed treatment of credit derivatives is inappropriate.

B. LEGAL CONSIDERATIONS⁵⁴

a. General Comments

⁵² The document was formally published as the Basle Capital Accord. The Basel Committee has subsequently recognised the official German spelling "Basel". This spelling was subsequently adopted in all documentation references.

⁵³ A New Capital Adequacy Framework - Comments on a Consultative Paper issued by the Basel Committee on Banking Supervision in June 1999 (February 2000)

⁵⁴ Unless otherwise specified, the discussions in this Annex apply to both the law of England and Wales and the law of the State of New York.

ISDA strongly urges the Basel Committee to recognise that credit derivatives should attract at least as favourable a regulatory capital treatment as guarantees. In order to support this argument, the legal nature and the market perception of the two types of risk mitigation techniques must be examined.

b. Legal Nature of Guarantee Obligations

i. General Comments

The term "guarantee" generally refers to a contract under which one party (the guarantor) has contingent obligations to perform for the benefit of another party (the obligee), such obligations maturing upon the non-performance of specified obligations by a party (the obligor) under a contract between the obligor and the obligee⁵⁵. Upon the maturity of its contingent obligations, the guarantor would generally be obliged to perform the obligations of the obligor under the underlying contract to the extent provided for under the guarantee. The term "guarantee" is often used to describe contracts of indemnity. Although certain characteristics are invariably found in contracts of guarantee, the parameters that characterise a contract as a guarantee are not clearly defined.

ii. Release of the Guarantor's Obligations

As further examined below, ISDA believes that guarantees do not, as a rule, offer a higher level of credit protection than credit derivatives. In particular, it is important to recognise that there are circumstances under which a guarantor's obligations would be released, unless such circumstances are specifically provided for under the guarantee:

1. Extension. If the obligee agrees to give the obligor extra time for performance of the underlying obligations, the guarantor is automatically released even if the guarantor is not prejudiced⁵⁶. For example, if a borrower fails to make an interest payment under a loan, the lender may no longer have recourse to the guarantor of the loan in respect of that interest payment if the lender agrees to a grace period which is not provided for in the loan agreement for the borrower to make the payment.
2. Variation. If the obligee and the obligor agree to material alterations of the underlying obligations, the guarantor is discharged⁵⁷. For example, unless contemplated by the loan agreement, the guarantor of a loan would be relieved from its obligations if the lender and the borrower agree to a different interest rate.
3. Composition. Under English law, if the obligee agrees to reduce the obligor's liability or to enter into a composition with the obligor, the guarantor may be discharged. For example, if the borrower of a loan goes into insolvent liquidation, and the lender agrees to a reduced principal amount due under the loan with the liquidator or other creditors, the guarantor would be relieved from its obligations to make payments in respect of the borrower's loan.
4. Invalidity of Guaranteed Obligation. There are a number of reasons why an underlying obligation may not be enforceable. For instance, a contract may be unenforceable if it is illegal where performed or if it exceeds the constitutional powers of a company⁵⁸. If the underlying obligation is not enforceable, there is nothing to pay under the guarantee.

⁵⁵ In the case of a guarantee of collection under New York law, obligations to pay pursuant to a judgment against the obligor.

⁵⁶ Under English law, see *Polak v. Everett* (1876) 1 Q.B.D. 669. See *CBS, Inc. v. Stokely - Van Camp, Inc.* (1977, S.D. N.Y.) 456 F. Supp. 539 in relation to New York law.

⁵⁷ Under English law, see *Holme v. Brunskill* (1878) 3 Q.B.D. 495. See *Becker v. Faber* (1939) 280 NY 146 in relation to New York law.

⁵⁸ This issue does not generally arise in relation to companies in England and Wales incorporated under the Companies Act 1985 by virtue of sections 35 and 35A.

5. Requirement of Written Evidence. Under the Statute of Frauds⁵⁹, a contract of guarantee would only be enforceable under English law if it is in the form of a written agreement signed by the party to be charged or his agent, or a note or memorandum of the agreement (which may be oral) similarly signed.
6. Release of Security. The release or surrender of securities held by the obligee could operate to the prejudice of the guarantor and may discharge the guarantor's liability under the guarantee⁶⁰. For instance, a guarantor may have agreed to enter into the guarantee on the basis that the obligor has given the obligee a fixed charge over some of its assets. The release of the fixed charge would therefore increase the extent of the guarantor's contingent liability under the guarantee.
7. Defences. The liability of the guarantor may be subject to defences arising from illegality or certain insolvency proceedings relating to the obligor. The guarantor may also have the right to assert any specific defences to payment that the obligor may have.
8. Party-specific Provisions. As the form of guarantee varies from party to party, there may be other situations specifically provided for under a guarantee where the guarantor would not be called upon to perform its obligations. The extent of credit protection may therefore vary considerably between guarantees, even though the general operational requirements under the New Accord are fulfilled.

iii. *Right of subrogation*

Upon payment by the guarantor to the obligee of the underlying contract, a guarantor could have a right of subrogation in respect of the obligee's rights against the obligor, to the extent of the guarantor's performance⁶¹.

This right of subrogation is stipulated in the New Accord under the operational requirements for a guarantee. The reason for this requirement is not clear, although the absence of this right of subrogation would make it commercially unattractive for the guarantor to allow the obligee direct recourse to the guarantor without first having to enforce against the obligor.

This right of subrogation can have an adverse effect upon the position of an obligee that has not been fully paid: the obligor's assets have to be shared *pro rata* with the guarantor; the dividends the obligee might receive in the liquidator of the obligor would be reduced by the fact that the guarantor is claiming as well.

As an example, consider a loan of £1,000,000 in respect of which the lender has the benefit of a capped guarantee of £600,000. If the borrower defaults on the repayment of the entire principal amount on insolvency, the lender would at most be able to recover £600,000 from the guarantor and leaving it to claim on insolvency against the liquidator of the borrower. Assuming that the assets of the borrower's insolvent estate is £100,000 and the loan is the only contract the borrower had entered into, the dividend payment made to the lender would be affected by the right of subrogation under the guarantee as follows:

⁵⁹ For English law position, see s.4 of the Statute of Frauds (1677) (amended by the Statute Law Revision Acts 1883 and 1948, the Law of Property Act 1925 s.207, Sch.7 and the Law Reform (Enforcement of Contracts) Act 1954 s.1). For New York law, see Statute of frauds CLS Gen Oblig Law §5-701(a)(2).

⁶⁰ See *Carter v. White* (1883) 25 Ch.D. 666 in relation to English law. See *Antisdel v. Williamson* (1901) 165 NY 372 in relation to New York law.

⁶¹ A right of subrogation may not exist under certain types of guarantees, e.g., independent third party guarantees. These types of guarantees do not satisfy the operational requirements of the New Accord and are not discussed here.

With the Right of Subrogation:

	Amount	Sub-total
Total amount due to lender	£1,000,000	
Lender's claim against guarantor	£600,000	
Amount recovered by lender against guarantor	£600,000	£600,000
Lender's claim against borrower's liquidator	£400,000	
Guarantor's claim against borrower's liquidator	£600,000	
Amount recovered by lender against borrower's liquidator		£40,000
Total amount recovered by lender		£640,000

Without the Right of Subrogation:

	Amount	Sub-total
Total amount due to lender	£1,000,000	
Lender's claim against guarantor	£600,000	
Amount recovered by lender against guarantor	£600,000	£600,000
Lender's claim against borrower's liquidator	£400,000	
Guarantor's claim against borrower's liquidator	£0	
Amount recovered by lender against borrower's liquidator		£100,000
Total amount recovered by lender		£700,000

It can be seen in this example that the operational requirement for the guarantor to have the right of subrogation under the guarantee would in fact reduce the extent of the protection afforded to the obligee.

iv. Other Factors Affecting the Enforceability of Guarantee

As a guarantee is a contract between the guarantor and the obligee, it is subject to the usual principles of contract law. In brief, a guarantee must include valid provisions that would overcome the following factors that may affect its enforceability:

1. Consideration
2. Limitation and expiry
3. Execution formalities
4. Continuing guarantee under the English law doctrine in *Clayton's Case*⁶²

There is legal authority⁶³ under English law suggesting that where the enforceability of a guarantee is under dispute, the court would generally construe the guarantee in favour of the guarantor so that no liability is imposed on the guarantor which is not clearly and distinctly covered by the terms of the agreement. Although there may be doubt⁶⁴ as to the current validity and scope of this principle, this may be one relevant consideration when examining the nature of credit protection under a guarantee.

As these considerations are not stipulated in the New Accord, a zero risk weighting could conceivably be granted to an asset in a situation where the credit protection over that asset may not be enforceable.

⁶² (1816) 1 Mer 572. It was established in this case that the liability of a guarantor is reduced by payments into a current account by the obligor so that subsequent drawings are not protected.

⁶³ *Blest v. Brown* (1862) 4 De G F & J 367, *Eastern Counties Building Society v. Russell* [1947] 2 All ER 734, *Barclays Bank v. Thienel* (1977) 2 EG 385

⁶⁴ *Mercers of City of London v. New Hampshire Insurance Co* [1992] 2 Lloyd's Rep 365

c. Legal Nature of Credit Derivatives

i. General Comments

Credit derivatives allow one party (the protection buyer) to buy from another (the protection seller) a right to receive a sum of money on the default of a specified reference credit. The protection buyer makes predetermined payments for the protection and the protection seller agrees to make payments calculated by reference to the reduction in value of the reference credit, or provide physical settlement of the relevant asset, upon the occurrence of certain specified credit events.

It is not a pre-requisite for the protection buyer to suffer an actual loss in order to receive payments under the credit derivatives. As long as the conditions to payment have been fulfilled, the protection seller will make payments calculated by reference to the affected asset or entity to the protection buyer, irrespective of the actual exposure of, or loss suffered by, the protection buyer.

ii. Standardisation of Products

In 1998, ISDA published a standard form confirmation for credit swap transactions⁶⁵ (the "**Long Form Confirmation**"). The terms and provisions were revised and expanded in the 1999 ISDA Credit Derivatives Definitions (the "**1999 Definitions**"). Typically, the confirmation evidencing a credit derivative transaction would supplement and form part of the ISDA Master Agreement between the parties. The Long Form Confirmation and the 1999 Definitions provide the basic framework for the documentation of OTC credit derivatives and facilitate the smooth and efficient functioning of the market in these products by providing a common set of terms and provisions. ISDA believes that the majority of OTC credit derivatives are documented under these standard forms.

The standard Credit Events in the 1999 Definitions allow the parties to agree to the inclusion of one or more events relating to bankruptcy, default or acceleration in the reference obligation, failure to pay in respect of any payment due under the underlying obligation, the occurrence of a repudiation or moratorium and the restructuring of the underlying obligation.

There are also terms governing the settlement procedures. There are detailed provisions in the 1999 Definitions relating to the valuation process, date and method of settlement.

ISDA believes that the standard documentation published for credit derivatives is capable of fulfilling the minimum conditions and operational requirements for these transactions to be recognised for capital relief purposes. Provided that the appropriate elections of these standard provisions are made, ISDA does not believe that there is any justification for assigning a less favourable risk weighting to credit derivatives than to guarantees if the credit protection is afforded by a bank or financial institution under the New Accord.

d. Credit Events under the 1999 ISDA Credit Derivatives Definitions

Article IV of the 1999 Definitions sets out a number of standard Credit Events. These are as follows:

1. Bankruptcy
2. Obligation Acceleration
3. Obligation Default
4. Failure to Pay
5. Repudiation/Moratorium
6. Restructuring

(A detailed analysis of each standard Credit Event under the 1999 Definitions is found in Part II of this Annex 2.)

⁶⁵ 1998 Confirmation of OTC Credit Swap Transaction (Single Reference Entity, Non-Sovereign)

ISDA is aware that the majority of credit derivatives transactions currently entered into by market participants incorporate Failure to Pay as a standard Credit Event. When contrasting the ambit of these Credit Events with the types of situations under which guarantee protection is generally triggered (further discussed below), ISDA argues that there is a strong case for giving credit derivatives that incorporate this standard Credit Event a capital treatment at least the same as guarantees.

e. Protection Afforded by Guarantees and Credit Derivatives

i. General Comments

ISDA believes that there is a strong argument that the protection afforded by credit derivatives is generally of a similar, if not higher, level than that of a guarantee. The scope of Credit Events typically elected using the 1999 Definitions would encompass and exceed the scope of circumstances under which a guarantor's contingent obligations under a contract of guarantee would crystallise (commonly failure to pay only). The mechanics for settlement of a credit derivative following a credit event are also generally more clearly defined than those under a guarantee.

Each of the operational requirements for guarantees is examined below.

ii. Paragraph 194(a) - Direct Recourse to Protection Provider

It is a minimum condition under the New Accord that the credit protection must represent a direct claim on the protection seller.

This criterion is generally fulfilled in respect of credit derivatives. The transaction is entered into between the protection buyer and the protection seller. Assuming that all the conditions to payment have been fulfilled, the protection seller will make cash settlement payments to, or exercise any option to accept physical delivery of the asset from, the protection buyer, irrespective of any recourse relating to the underlying obligation.

Similarly, as a matter of law, the obligee is not obliged to seek recourse against the obligor of the underlying before enforcing the guarantee against the guarantor. This is often expressly stipulated in guarantees. However, as a matter of contract, it is possible that the failure of remedy in respect of the obligor could be expressly made a condition to guarantor recourse. Such recovery, particularly if it involved a liquidation of the obligor or the realisation of security, might involve substantial delays during which the obligee could be exposed to a possible deterioration of the credit of the guarantor.

The fundamental differences between the nature of the obligations under a guarantee and those under a credit derivative are as follows:

1. Under a guarantee, to the extent that a guarantor has performed its obligations, the liability arising from the underlying obligation is extinguished or subrogated to the guarantor. A credit derivative represents an independent right of the protection buyer to receive certain payment as a result of credit events. This right arises in addition to any remedy an obligee may have against the obligor under the underlying contract or the right of indemnity against the guarantor.
2. A guarantee is an indemnity relating to the loss of the obligee. Conversely, there is no requirement of establishing loss under a credit derivative. Without the need of establishing the loss of the obligee and the need to prove due debts in the insolvency process, ISDA argues that the protection afforded by credit derivatives is generally given more expediently than that under a guarantee. It is therefore arguable that the nature of the recourse to protection under a credit derivative is better than that under a guarantee.

iii. *Paragraph 194(c) - Stipulation of Underlying Obligations*

ISDA argues that the exposure protected by a credit derivative incorporating standard market terms is well defined. There is sufficient clarity under the terms of the ISDA documentation as to the circumstances under which a Failure to Pay, Bankruptcy, Obligation Acceleration, Obligation Default and Repudiation/Moratorium would be triggered⁶⁶.

A recent case in the jurisdiction of New York is of some interest. In *Ursa Minor*⁶⁷, the Southern District of New York granted a motion for summary judgment, holding that a credit default swap documented under an ISDA Master Agreement governed by New York law was enforceable as a matter of law, even though the underlying surety bond may not have been enforceable. In particular, the court recognised the provision in the confirmation stating that the determination of whether a credit event had occurred would be without regard to any lack of validity or enforceability of the surety bond. On this basis, the court held that the payment obligation under the swap was enforceable because the credit event had taken place.

ISDA is not aware of any material case law in England and Wales and in the United States that would directly throw into doubt the enforceability of credit derivative contracts.

iv. *Paragraph 194(c) - Protected Payments*

On the basis of the discussions in Section B(d) above and Part II of this Annex 2, ISDA believes that the range of credit sensitive situations encompassed by Credit Events in the 1999 Definitions are at least as wide as those envisaged by a typical guarantee.

Paragraph 194(c) of the New Accord states that it would be sufficient for a contract to be a qualifying guarantee if the payment obligations of the underlying obligor are covered. In respect of a credit derivative documented under ISDA documentation and incorporating the 1991 Definitions, the failure of an underlying obligor to make payments of principal or interest in respect of any loan or a debt security would typically fall within the scope of a Failure to Pay.

Similarly, the Bankruptcy Credit Event in the 1999 Definitions would adequately address the issue of insolvency of the underlying obligor to at least the same extent as a contract of guarantee. Furthermore, the Credit Events set out in the 1999 Definitions cover a number of situations in which a guarantor would not generally be called on to perform, short of the underlying obligor's failure to make the relevant payments, under a contract of guarantee. For instance, the imposition of a governmental moratorium, set out in the Repudiation/Moratorium Credit Event in the 1999 Definitions, does not generally trigger rights of payment under a guarantee *per se*, although the moratorium could lead to a failure to pay by the obligor. Similarly, if a lender and a borrower agree to restructure a debt, the lender does not generally have recourse to the guarantor for any reduction in the payments received by the lender. Restructuring is specified to be a Credit Event in the 1999 Definitions.

From a credit perspective, ISDA argues that a credit derivative transaction incorporating the standard definition of Failure to Pay should warrant at least the same regulatory treatment as a guarantee.

v. *Paragraph 194(d) - Enforceability of Contract*

The enforceability of credit derivatives transactions is unlikely to be called into question if they incorporate standard terms. In respect of transactions documented under ISDA terms, the enforceability of the underlying agreement is supported by a number of legal opinions from a host of jurisdictions. The courts have recognised the use of credit derivative products and the enforceability of the underlying terms in some recent cases⁶⁸.

At a commercial level, as the use of standardised credit derivative products becomes more pervasive, the level of recognition of these products will also become more substantial.

⁶⁶ See Part II of this Annex XX.

⁶⁷ *URSA Minor Limited v. AON Financial Products, Inc.* (2000) U.S. Dist. LEXIS 10166. This case is currently on appeal.

⁶⁸ See e.g., *URSA Minor Limited v. AON Financial Products, Inc.*

On this basis, ISDA believes that the issue of enforceability is not of material concern in respect of credit derivatives.

vi. *Characterisation of Credit Protection under the New Accord*

One drawback of the current position under the New Accord is that the term "guarantee" is not clearly defined. Most modern guarantees purport to be independent payment obligations and go to some lengths to provide that the liability of the guarantor is not that of a "mere surety". Are such contracts guarantees for the purposes of the New Accord? If they are, it would be difficult to see the distinction between the independent payment obligation created by a document entitled "Guarantee" and that created by a document entitled "Credit Derivative". The upshot of this is that any contract could be loosely categorised as a contract of guarantee so long as the relevant minimum conditions and operational requirements were fulfilled. In many cases, these conditions and requirements could be satisfied by credit derivatives transactions. This position is clearly unsatisfactory and has potential for abuse. If guarantees and credit derivatives attract the same regulatory capital relief, the importance of the characterisation would become secondary.

C. CONCLUSIONS

On the basis of the legal considerations discussed above, ISDA strongly argues that the nature and extent of credit protection afforded by credit derivatives are at least as favourable to the protection buyer as the protection given to the beneficiary of a guarantee. The analysis above also illustrates that credit derivatives that incorporate the standard Failure to Pay Credit Event offer at least the same level of credit protection as a guarantee.

If the structure of the credit derivative products is standardised, ISDA argues that there is little justification to conclude that there is any material difference in documentation risks between the two credit risk mitigation techniques.

[ANNEX 3 - Part II]

Standard Credit Events in the 1999 ISDA Credit Derivatives Definitions

Article IV of the 1999 ISDA Credit Derivatives Definitions (the "**1999 Definitions**") sets out a number of standard Credit Events. The ISDA documentation is structured in a way where the parties to the credit default swap have the right to elect specific credit events to be applicable to the transaction. Set out below is an analysis of the nature of credit protection given by each Credit Event:

A. CREDIT EVENTS

1. *Bankruptcy*

Bankruptcy in the 1999 Definitions mirrors the wording of Section 5(a)(vii) of the ISDA Master Agreement. It is widely drafted so as to be triggered by a variety of events associated with bankruptcy or insolvency proceedings under English law and New York law, as well as analogous events under other insolvency laws.

ISDA is aware that the scope of the definition of Bankruptcy may be wider than insolvency-related events falling within the credit assessment criteria used by rating agencies. Certain actions taken by the reference entity, for instance, a board meeting or a meeting of shareholders to consider the filing of a liquidation petition, could be argued as being in furtherance of an act of bankruptcy and thus triggering a Credit Event, even though such act would not generally be considered a bankruptcy event in the context of credit assessment by a rating agency. Therefore, the inclusion of this Credit Event could provide credit protection ahead of such circumstances.

By contrast, a guarantee would not typically provide any protection against insolvency-related events ahead of an actual failure to pay.

2. *Obligation Acceleration*

Obligation Acceleration covers the situation, other than a Failure to Pay, where the relevant obligation becomes due and payable as a result of a default by the reference entity before the time when such obligation would otherwise have been due and payable. The Default Requirement builds in a minimum threshold which the relevant sum being accelerated must exceed before the Credit Event occurs.

The scope of this Credit Event forms a subset of that of Obligation Default. Thus if Obligation Default is specified as a Credit Event in the relevant credit derivatives transaction, this Credit Event will only be of relevance if the Default Requirement is lower than that in respect of the Obligation Default.

The credit considerations are discussed under Obligation Default below.

3. *Obligation Default*

Obligation Default covers the situation, other than a Failure to Pay, where the relevant obligation becomes capable of being declared due and payable as a result of a default by the reference entity before the time when such obligation would otherwise have been capable of being so declared. The Default Requirement builds in a minimum threshold which the relevant sum being defaulted or capable of being accelerated must exceed before the Credit Event occurs.

It may be important to note that the concept of "default" used in the present context refers to a default under the relevant provisions of the relevant contract or agreement.

4. *Failure to Pay*

Failure to Pay is defined to be a failure of the reference entity to make, when and where due, any payments under one or more obligations. Grace periods for payment are taken into account.

The failure of payment is critical to the credit risk borne by a protection buyer under a credit derivative product. A failure to pay by an underlying reference entity also encompasses the situations in which guarantee payments are generally triggered.

5. *Repudiation/Moratorium*

Repudiation/Moratorium deals with the situation where the reference entity or a governmental authority disaffirms, disclaims or otherwise challenges the validity of the relevant obligation. A default requirement threshold is specified.

6. *Restructuring*

Restructuring covers events as a result of which the terms, as agreed by the reference entity or governmental authority and the holders of the relevant obligation, governing the relevant obligation have become less favourable to the holders than they would otherwise have been. These events include a reduction in the principal amount or interest payable under the obligation, a postponement of payment, a change in ranking in priority of payment or any other composition of payment. A default threshold amount can be specified.

This approach purports to adopt an objective approach by identifying specific events that are typical elements of a restructuring of indebtedness. As restructuring events could be those undertaken by a reference entity that would result in the credit quality being improved or remaining the same, the Credit Event under the 1999 Definitions is specified not to occur in circumstances where the relevant event does not result from a deterioration in the creditworthiness or financial condition of the reference entity.

B. CONCLUSIONS

As concluded in Part I of this Annex, ISDA believes that applying the Failure to Pay and Bankruptcy credit events set out in the 1999 Definitions adequately cover the circumstances under which obligations of a guarantor under a guarantee would be triggered.

ANNEX 4 : RESTRUCTURING SUPPLEMENT TO THE 1999 ISDA CREDIT DERIVATIVES DEFINITIONS

Any or all of the following definitions and provisions may be incorporated into a document by wording in the document indicating that, or the extent to which, the document is subject to the 1999 ISDA Credit Derivatives Definitions (as published by the International Swaps and Derivatives Association, Inc. ("ISDA")), as supplemented by the Restructuring Supplement (the "Definitions"). All definitions and provisions so incorporated in a document will be applicable to that document unless otherwise provided in that document, and all terms defined in these Definitions and used in any definition or provision that is incorporated by reference in a document will have the respective meanings set forth in these Definitions unless otherwise provided in that document. Any term used in a document will, when combined with the name of a party, have meaning in respect of the named party only. This Supplement is dated May 11, 2001.

I. The Definitions are hereby supplemented by adding the following Section 2.29.

Section 2.29. Restructuring Maturity Limitation. If Physical Settlement and "Restructuring Maturity Limitation Applicable" are specified in a Confirmation and Restructuring is the only Credit Event specified in a Credit Event Notice delivered by Buyer, then a Deliverable Obligation may be included in the Portfolio only if it is a Fully Transferable Obligation with a final maturity date not later than the Restructuring Maturity Limitation Date.

"Restructuring Maturity Limitation Date" means the date that is the earlier of (x) 30 months following the Restructuring Date and (y) the latest final maturity date of any Restructured Bond or Loan, provided, however, that under no circumstances shall the Restructuring Maturity Limitation Date be earlier than the Scheduled Termination Date or later than 30 months following the Scheduled Termination Date.

"Restructuring Date" means, with respect to a Restructured Bond or Loan, the date on which a Restructuring is legally effective in accordance with the terms of the documentation governing such Restructuring.

"Restructured Bond or Loan" means an Obligation which is a Bond or Loan and in respect of which the Restructuring that is the subject of a Credit Event Notice has occurred.

"Eligible Transferee" means each of the following:

- (a) (i) any bank or other financial institution;
- (ii) an insurance or reinsurance company;
- (iii) a mutual fund, unit trust or similar collective investment vehicle (other than an entity specified in clause (c)(i) below); and
- (iv) a registered or licensed broker or dealer (other than a natural person or proprietorship);

provided, however, in each case that such entity has total assets of at least U.S.\$500 million;

- (b) an Affiliate of an entity specified in the preceding clauses (a);

- (c) each of a corporation, partnership, proprietorship, organization, trust or other entity

- (i) that is an investment vehicle (including, without limitation, any hedge fund, issuer of collateralized debt obligations, commercial paper conduit or other special purpose vehicle) that (1) has total assets of at least U.S.\$100 million or (2) is one of a group of investment vehicles under common control or management having, in the aggregate, total assets of at least U.S.\$100 million; or

(ii) that has total assets of at least U.S.\$500 million; or

(iii) the obligations of which under an agreement, contract, or transaction are guaranteed or otherwise supported by a letter of credit or keepwell, support, or other agreement by an entity described in clauses (a), (b), (c)(ii) or (d); and

(d) a Sovereign, Sovereign Agency or Supranational Organization;

All references in this definition to U.S.\$ include equivalent amounts in other currencies.

“Fully Transferable Obligation” means a Deliverable Obligation that is either Transferable, in the case of Bonds, or capable of being assigned or novated to all Eligible Transferees without the consent of any person being required, in the case of any Deliverable Obligation other than Bonds. For purposes of determining whether a Deliverable Obligation is Transferable or is capable of being assigned or novated to Eligible Transferees, such determination shall be made as of the Physical Settlement Date for the portion of the Portfolio to be delivered on such Physical Settlement Date, taking into account only the terms of the Deliverable Obligation and any related transfer or consent documents which have been obtained by the Buyer.

Any requirement that notification of transfer of a Deliverable Obligation be provided to a trustee, fiscal agent, administrative agent, clearing agent or paying agent for a Deliverable Obligation shall not be considered to be a requirement for consent for purposes of this Section 2.29.

II. The Definitions are hereby supplemented by adding the following Section 4.10.

Section 4.10. Limitation on Obligations in Connection With Section 4.7.

Notwithstanding anything to the contrary in Section 4.7,

- (a) the occurrence of, agreement to, or announcement of, any of the events described in Section 4.7(a)(i) to (v) shall not be a Restructuring where the Obligation in respect of any such events is not a Multiple Holder Obligation.
- (b) “Multiple Holder Obligation” means an Obligation that (i) at the time the Credit Event Notice is delivered, is held by more than three holders that are not Affiliates of each other and (ii) with respect to which a percentage of holders (determined pursuant to the terms of the Obligation) at least equal to sixty-six-and-two-thirds is required to consent to the event which would otherwise constitute a Restructuring Credit Event.

III. The Definitions are supplemented by adding the following Section 2.30.

Section 2.30. Pari Passu Ranking; Section 4.7(a)(iv).

- (a) For purposes of determining whether an obligation satisfies the “Pari Passu Ranking” Obligation Characteristic or Deliverable Obligation Characteristic, the ranking in priority of payment of the Reference Obligation shall be determined as of the later of (i) the Trade Date specified in the related Confirmation and (ii) the date on which such obligation was issued or incurred and shall not reflect any change to such ranking after such date.
- (b) For purposes of Sections 4.7(a)(iv), “a change in the ranking in priority of payment of any Obligation, causing the subordination of such Obligation” means only the following: an amendment to the terms of such Obligation or other contractual arrangement pursuant to which the requisite percentage of holders of such Obligations (“Subordinated Holders”) agree that, upon the liquidation, dissolution, reorganization or winding up of the Reference Entity, claims of holders of any other Obligations will be satisfied prior to the claims of Subordinated Holders. For the avoidance of doubt, the provision of collateral, credit support or credit enhancement with respect to any obligation will not, of itself, constitute a change in the ranking in priority of payment of any Obligation causing the subordination of such Obligation.

IV. The Definitions are supplemented by adding the following Section 3.11.

Section 3.11. Credit Event Notice After Restructuring. Notwithstanding anything to the contrary in these Definitions, upon the occurrence of a Restructuring Credit Event during the Term of the Credit Derivative Transaction:

- (a) a Notifying Party may deliver multiple Credit Event Notices with respect to such Credit Derivative Transaction, each such Credit Event Notice setting forth the amount of the Floating Rate Payer Calculation Amount to which such Credit Event Notice applies (the "Exercise Amount");
- (b) if the Notifying Party has delivered a Credit Event Notice that specifies an Exercise Amount that is less than the then outstanding Floating Rate Payer Calculation Amount, the rights and obligations of the parties shall, with effect from the date such Credit Event Notice is effective, be construed as if the parties had entered into two Credit Derivative Transactions, one of which has a Floating Rate Payer Calculation Amount equal to the Exercise Amount and, upon satisfaction of the Conditions to Payment, will be settled in accordance with the applicable Settlement Method, and the other of which will have a Floating Rate Payer Calculation Amount equal to the Floating Rate Payer Calculation Amount outstanding prior to such Credit Event Notice minus the Exercise Amount and will continue in effect;
- (c) the Exercise Amount in connection with a Credit Event Notice describing a Credit Event other than a Restructuring must be equal to the then outstanding Floating Rate Payer Calculation Amount (and not a portion thereof); and
- (d) the Exercise Amount in connection with a Credit Event Notice describing a Restructuring must be in the amount of 1,000,000 units of the currency in which the Floating Rate Payer Calculation Amount is denominated or an integral multiple thereof.

ANNEX 5 : REGULATORY CAPITAL TREATMENT OF CREDIT DERIVATIVES IN THE TRADING BOOK : A RISK SENSITIVE PROPOSAL

A. INTRODUCTION

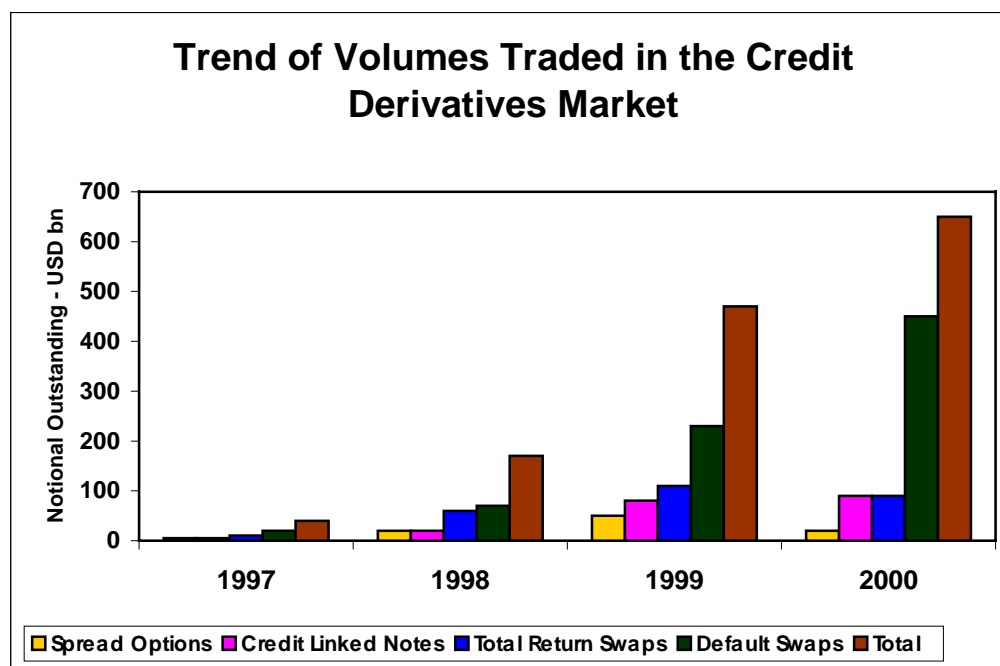
This paper sets out new proposals for a regulatory capital treatment of credit default swaps and related instruments in a firm's trading book. This proposal has several desirable features:

- it is fully compliant with the current Basel Capital Accord and its implementation within the European Union's Capital Adequacy Directives, and is also fully compatible with the New Capital Adequacy Framework;
- it is risk sensitive, and is based on the techniques leading firms use for managing and monitoring risk in their credit derivatives books;
- it is flexible, intuitive, and not over-burdensome to implement.

B. CURRENT PRACTICE

The current regulatory capital treatment for single name default swaps is typically based on the hedging of bond positions. That is, the guidance starts from the basis that the bond is central, and that credit derivatives are used as part of a bond portfolio. Although this was perhaps true in the early days of credit derivatives, market makers and leading traders in credit derivatives now very much hedge credit derivatives with credit derivatives. Bonds play only a relatively minor role. This is partly due to the increasing liquidity of the credit derivatives market, as evidenced by Figure One; it is also due to the changing nature of the reference obligation.

Figure One – The Volume Trend in Credit Derivatives



(SOURCE: RISK MAGAZINE AND BBA CREDIT DERIVATIVES SURVEY 1999/2000)

Initially, the reference obligation was used so that credit derivatives were tied to specific securities: protection was bought or sold on particular bonds rather than on particular obligors. However, this was both awkward and unsuitable: awkward because it limited the hedging instruments for a credit derivative to those based on the same reference instrument and the reference instrument itself; unsuitable because the ubiquity of cross default clauses meant that the default of one bond usually caused that of many others of the same obligor.

The market quickly realised that the purpose of the reference instrument was simply to define the obligor and the recovery rate (which defines the Loss Given Default); the latter reflecting simply the bond's place in the capital hierarchy of an issuer. There should be no difference in a default swap referencing two different bonds of the same issuer providing they cross default, have the same seniority, and both are of the same or longer maturity than the swap. Once this realisation had become commonplace, and the standard credit derivatives contract amended to reflect it, greater liquidity came to the market. The result is a market where it is common for *any* bond (or often bond or loan) of a given seniority and issuer to be deliverable into a default swap.

The best evidence of increased liquidity created by uniform documentation is the explosive growth in the volume of single name default swaps traded in 1999 and 2000, that is since the 1999 ISDA Credit Derivatives Definitions came into currency. Indeed, the much higher liquidity in the vanilla default swap market has directly contributed to the growth in volumes of certain other types of credit derivatives by virtue of default swaps' central role in engineering and hedging these other instruments.

Next we turn to basket instruments (including synthetic securitisations). Growth has been considerable in this area of the market, and liquidity has increased sharply. In particular, as liquidity has become common in many single names, basket default swaps are now hedged with single name default swaps rather than with bonds. This again means that any capital treatment must be successful not just in a mixed bonds and swaps environment, but also one of pure basket and single name default swaps. To quote the Basel Committee, we seek:

"A balance between an appropriate capital charge for imperfect hedging and a capital relief which gives sufficient recognition to sound risk mitigation techniques."

The treatment should also be mindful of leading risk management and economic capital practice. This focuses on the underlying risk of a credit derivative—the seniority and maturity of the exposure to a given obligor, rather than on a bond underlying—so it provides a valuable lead. Finally, the treatment should be practical, in the sense of having reasonable data requirements. We contend that this is questionable for the current approach: if a firm is short a credit derivative into which the holder could deliver *any* senior instrument of a given obligor in the event of default, then potentially it would have to monitor every possible such instrument to calculate its regulatory capital despite the fact that all such instruments have identical PDs/LGDs. These requirements are onerous and add little value: a treatment based on the real risk of the short position would be more satisfactory.

C. FEATURES OF THE MARKET

Our proposals are based on several key observations of the market for default protection. To summarise:

- The credit derivatives market for single names is now sufficiently liquid that most leading dealers hedge credit derivatives with other credit derivatives. Bonds are often unattractive hedges for they must be held and funded on balance sheet, and shorting corporate bonds can be expensive or impossible.
- This liquidity is based on a generic contract construction, the 1999 ISDA standard. This contract has been tested in a number of defaults since its introduction (for example with credit events on Owens, Corning and Laidlaw).
- The 1999 Definitions are generic in the sense that they cite a specific reference obligation, yet may be discharged by the delivery of any other obligation (of the same obligor) that ranks *pari passu*.
- The risk of a contract depends only on maturity, the issuer of the reference obligation, and that obligation's ranking in liquidation: the other features are irrelevant to the derivative's suitability as a hedge.
- Basket default swaps are common products, and are often hedged with default swaps on the component names. These hedges are determined by the bond equivalent of the basket in a given name, a quantity that is straightforward to calculate and forms the basis of hedging.

D. FRN APPROACH - SINGLE NAME DEFAULT SWAPS

The fundamental building block of our proposed approach is a generic floating rate note ("FRN") which is characterised by:

- an obligor;

- maturity; and
- the ranking in liquidation of the stratum of capital defined in the contract.

We will therefore translate default swaps on single names into a generic FRN with the same obligor and seniority as the swap's reference obligation. The start date and end date of the FRN are defined by the corresponding default swap's start date and end date. Consider the following example: on 14th March 2001 a firm buys protection to last five years on Hasbro Inc., the contract being referenced to its 6.15% senior unsecured bond which matures on 15th July 2008. We would therefore create a short notional senior unsecured FRN in Hasbro Inc. beginning on 15th March 2001 and maturing on 15th March 2006. Exactly the same notional position would be created if the firm were instead to buy protection referenced to Hasbro's 8.5% senior unsecured bond which matures on 15th March 2006.

The *bond equivalent* of a default swap is defined as the notional amount of (the same) default swap required to hedge the existing position at new market spreads. Stated mathematically, the bond equivalent is:

$$\text{Original Default Swap Notional} \times D(\text{Original Default Swap}) / D(\text{Par Default Swap})$$

where $D(S)$ is the sensitivity of a default swap, S , to a one basis point change in the credit spread of the underlying. The bond equivalent therefore reflects all the information in the market about the credit spread of the issuer, and hence is more sensitive to risk than, for instance, the notional of the default swap. Details of the sensitivities for three real default swaps and the bond equivalents they imply are given in the Appendix. The value assigned to each FRN is the bond equivalent of the default swap. To see how this depends on credit spreads, consider a real example:

Example – Bond Equivalent

- Suppose we buy protection on USD 10m notional of Hasbro Inc.'s senior unsecured obligations for five years. The bond equivalent changes with the price of protection as follows:

Change in Market Spread*	Bond Equivalent – USD
-100	10,418,063
-75	10,313,275
-50	10,209,343
-25	10,106,268
0	10,000,000
+25	9,902,676
+50	9,802,156
+75	9,702,483
+100	9,603,656

*The change in market spread is the change in the spread of a default swap with zero NPV in the current market, i.e. a par default swap.

By definition, the bond equivalent is exactly USD10M if the prevailing market spread is the same as the spread at which a par swap trades. Note, though, that as the bond becomes riskier and protection becomes more expensive, the bond equivalent declines. Thus in this setting a fixed bond hedged with a credit derivative becomes more unhedged as credit spreads widen.

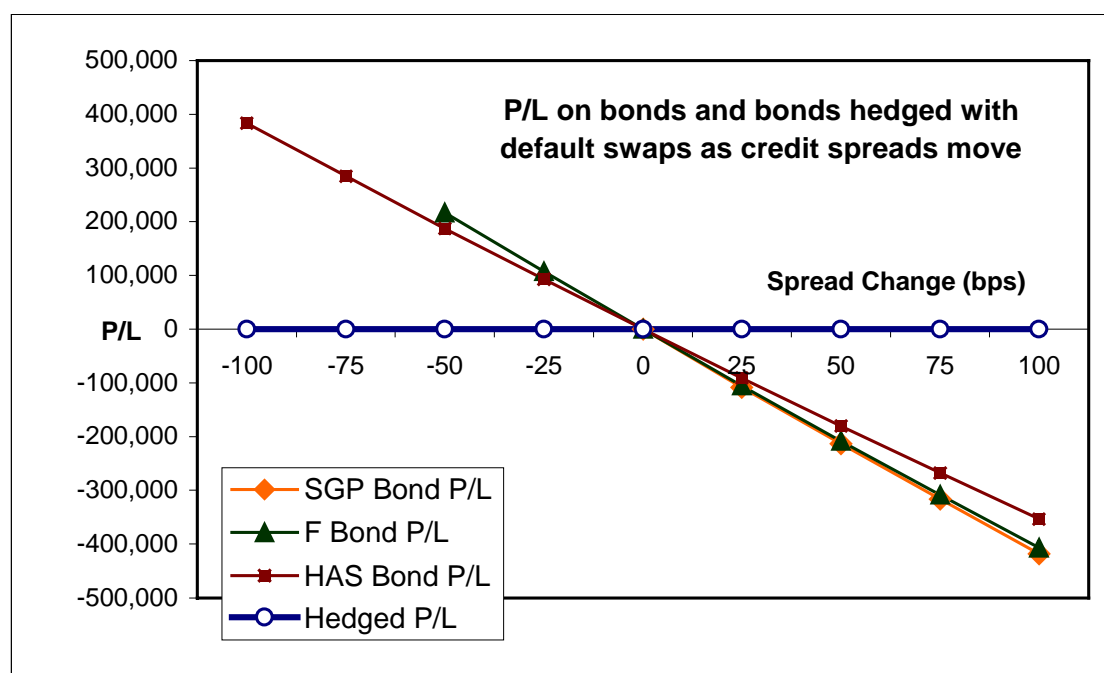
Hedging Characteristics of Default Swaps

In order to understand this phenomenon better, it might be helpful to consider the behaviour of default swaps in more detail.

First, to illustrate the efficacy of the credit derivative hedge, we show the P/L on a naked bond position and on that bond hedged by a matching default swap. Specifically, for each of the bonds shown, we suppose that a credit derivative of matching maturity has been purchased at the market spread and that credit spreads subsequently move by the amount shown. As can be seen from Figure Two, the mark to market on the credit derivative is highly correlated with that of the bond, and the combined position is much better hedged than the naked bond. This, combined with the relative liquidity of the default swap gives us comfort that default swaps can offer very good hedges to specific risk.

Figure Two: P/L for a various naked 5 year bond positions, and the same bonds hedged with 5 year par default swaps

Bonds used: Schering Plough (SGP, Rated AA2, 5y spread = 32bps), Ford Motor Co. (F, Rated A2, 5y spread = 100bps), Hasbro Inc. (HAS, Rated BB1, 5y spread = 445bps)



We shall now look at the effect of movements in credit spreads on capital charges. As credit spreads move, the bond equivalent will move as we described above. The market risk charge is calculated under two methods: a) the FSA's current guidance; and b) the new method. Under the FSA's current guidance the market risk charge for the hedged position is simply the charge for General Market Risk ("GMR"); no charge for Specific Risk ("SR") arises because the notional of the swap matches the notional of the bond at all nodes. Note that the charge for the hedged position declines at exactly the same rate as the charge for the unhedged position.

Under the new method we observe different behaviour. A charge for SR arises at all nodes where the bond notional does not match the default swap's delta – that is at all nodes except that corresponding to the original market. As before, GMR will apply to the entire bond notional. Remember that each bond is a Qualifying Debt Security which means that each will attract a SR charge at 1.6 per cent under the 1988 Capital Accord. It is possible, however, that Hasbro's rating (Baa3) might fall as spreads increase which would increase its SR charge to 8 per cent.

Spread Shift Bp	Charge for SGP Position		Charge for F Position		Charge for HAS Position	
	Guidance	New Method	Guidance	New Method	Guidance	New Method
-100	-	-	-	-	\$336,799	\$343,488
-75	-	-	-	-	\$333,629	\$338,641
-50	-	-	\$331,903	\$335,377	\$330,522	\$333,872
-25	-	-	\$328,375	\$330,105	\$327,478	\$329,179
0	\$325,017	\$325,017	\$324,922	\$324,922	\$324,496	\$324,496
25	\$321,548	\$323,261	\$321,542	\$323,240	\$321,573	\$323,114
50	\$318,154	\$323,034	\$318,235	\$321,582	\$318,710	\$321,814
75	\$314,833	\$321,296	\$314,998	\$319,948	\$315,904	\$320,531
100	\$311,583	\$318,141	\$311,830	\$318,336	\$313,154	\$319,265

Figure Three – Comparison of Market Risk Charges Under FSA's Guidance and The New Method

We have seen that if the credit spread falls below the original market level the default swap's delta will be greater than the bond notional. In the new method, this implies that the firm has an 'excess' of

default swap which will attract an SR charge linked to the excess notional. If, however, the spread rises above the original market level, the default swap's delta is less than the bond notional which implies that the firm has an 'excess' of bonds which also attracts an SR charge. The charge in this instance is, however, linked to the bond's market value rather than its notional value.

The key observation is that the market risk charge for a bond and its corresponding default swap is higher at all nodes under the new method than under the FSA's current guidance, the exception being the central node where the charges under both methods are equal. Indeed, the difference in charge is greatest the further we move from the central node. This result is pleasing because we know that the position is fully hedged only at this central node (the original market) and that the hedge becomes less efficient as spreads diverge from their original level. The new method is therefore more sensitive to risk.

Netting

The netting of credit derivatives whose maturities do not match — but which otherwise can be netted — is a complex issue and does not easily lend itself to treatment by simple rules. The current Basel proposals on specific risk in the trading book remain grossly at variance with firms' risk management practice, and this area deserves further study.

Specific Risk Charge

The charge for Specific Risk is simply the product of the Specific Risk weight and the net value of the FRN after netting.

E. THE FRN APPROACH FOR BASKET DEFAULT SWAPS

The real advantage of the FRN approach becomes clear when we consider basket default swaps. In an N-asset basket with N obligors, we create FRNs for each one, with the appropriate seniority, start and end dates. The value assigned to each FRN is simply the Bond Equivalent.

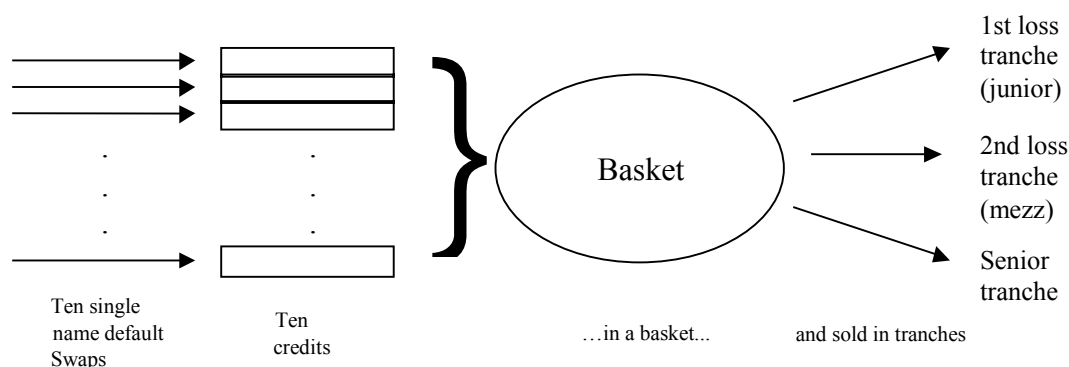
Example – Basket Structures and Bond Equivalents

Consider a First to Default Basket Swap referenced to 5 issuers, each protected to USD100m. Using an industry standard model, we calculate the bond equivalent as follows:

Issuer	Notional USDm	Bond Equivalent USDm	Capital Stratum
ABC1	100	72.65	Subordinated
ABC2	100	52.87	Senior unsecured
ABC3	100	50.04	Senior unsecured
ABC4	100	50.03	Senior unsecured
ABC5	100	48.76	Senior unsecured

This treatment has a number of advantages:

- First, the bond equivalent is the best hedge given current market conditions. Any capital treatment which does not incorporate widening credit spreads risks being imprudent.
- Secondly, it automatically guarantees the correct treatment of risk free structures.



To see this in more detail, consider a basket of ten credits where a firm has bought the exposure using ten single name default swaps and sold it again using first loss swap (equity tranche), a second loss swap (mezzanine tranche) and a remaining loss swap (senior tranche). If the three tranches precisely cover the basket, the firm has no risk. In our proposal, for each credit, the sum of the values of the FRNs for a given obligor for the equity, mezzanine and senior tranches will equal that of the single name default swap on the other side. No other treatment we are aware of has this desirable property of assigning a zero capital charge to this zero market risk structure.

Appendix

Data for Schering Plough

SGP							
Spread Bump	Value Bonds	of Value of DS	Bond's SDV01	DS's SDV01	PL from Case	Change ATM Base SDV01	DS's Notional ATM DS to Hedge Original DS
-100	-	-	-	-		-	-
-75	-	-	-	-		-	-
-50	-	-	-	-		-	-
-25	-	-	-	-		-	-
0	10,000,514	0	4,318	-4,360	0	-4,360	10,000,000
25	9,893,785	107,786	4,225	-4,267	1,057	-4,313	9,891,811
50	9,789,349	213,257	4,134	-4,134	2,093	-4,267	9,688,434
75	9,687,156	316,464	4,045	-4,045	3,106	-4,221	9,582,986
100	9,587,156	417,456	3,959	-3,998	4,098	-4,176	9,572,433

Data for Ford

F							
Spread Bump	Value Bonds	of Value of DS	Bond's SDV01	DS's SDV01	PL from Case	Change ATM Base SDV01	DS's Notional ATM DS to Hedge Original DS
-100	-	-	-	-		-	-
-75	-	-	-	-		-	-
-50	10,212,412	-217,021	4,391	-4,437	-2,209	-4,342	10,217,113
-25	10,103,848	-107,341	4,298	-4,342	-1,093	-4,296	10,108,123
0	9,997,599	0	4,206	-4,249	0	-4,249	10,000,000
25	9,893,615	105,055	4,117	-4,159	1,070	-4,204	9,892,743
50	9,791,846	207,872	4,029	-4,070	2,118	-4,159	9,786,351
75	9,692,243	308,501	3,943	-3,984	3,144	-4,115	9,680,823
100	9,594,759	406,989	3,859	-3,899	4,149	-4,072	9,576,158

Data for Hasbro

HAS							
Spread Bump	Value Bonds	of Value of DS	Bond's SDV01	DS's SDV01	PL from Case	Change ATM Base SDV01	DS's Notional ATM DS to Hedge Original DS
-100	10,363,057	-383,099	3,944	-3,991	-4,525	-3,831	10,418,063
-75	10,265,497	-284,374	3,864	-3,910	-3,360	-3,792	10,313,275
-50	10,169,910	-187,644	3,786	-3,831	-2,218	-3,753	10,209,343
-25	10,076,253	-92,868	3,710	-3,754	-1,098	-3,715	10,106,268
0	9,984,486	0	3,635	-3,678	0	-3,678	10,000,000
25	9,894,568	90,991	3,562	-3,604	1,076	-3,640	9,902,676
50	9,806,460	180,154	3,490	-3,532	2,131	-3,603	9,802,156
75	9,720,123	267,525	3,420	-3,461	3,165	-3,567	9,702,483
100	9,635,519	353,143	3,351	-3,392	4,179	-3,531	9,603,656

ANNEX 6: LINEARITY IN THE OPERATIONAL RISK CHARGE

1- INTRODUCTION

ISDA, the BBA and LIBA ('the Associations') have prepared this joint paper to focus on one specific and, in their opinion, problematic element of the Basel Committee and EU authorities' proposals for a capital charge for operational risk – namely the 1:1 linear scaling of the charge⁶⁹. This paper is submitted in an attempt to advance debate on this specific issue, which the Associations consider to be in need of prompt and careful analysis.

If necessary, the issues outlined in this paper could form the subject of a more detailed and thorough study pursued on a collaborative basis by industry and regulators and targeting data-rich areas. The Associations believe that non-linear scaling should be introduced from day one and that this issue merits analysis as a key factor, in the first instance ahead of finalising capital proposals but also subsequently as part of a formal, scheduled review of the impact of the rules on operational risk that they believe should be conducted within a limited time after implementation. The Associations further believe that regulatory support of any such study will be a critical factor in its effectiveness.

As currently proposed, a firm's capital charge will increase as an undifferentiated function of its size, as measured by a certain indicator or set of indicators. This is true of all three stages of the 'evolution' proposed in CP2. The Associations consider that this creates a disproportionate burden on larger firms, when both conceptual and empirical study suggests that, for individual firms, size is *very weakly correlated* to operational loss *and in diminishing proportion*. In other words:

- 1) the size of a firm (by whatever indicator one chooses to measure that size) fails to explain the majority of the variability of operational loss; and
- 2) such relationship as there is between size and loss is one of diminishing effect – for every unit increase in size, the increase in operational loss becomes smaller.

In particular, there is evidence to suggest that *both* the severity *and* the frequency of loss should *not* be thought of as the linear function currently proposed. This evidence is consistent with good theoretical reasons why this should be the case.

2- CONCEPTUAL ISSUES

The main conceptual reasons for considering that operational loss does not increase as a simple 1:1 linear function of the size of a firm are as follows. Fundamentally, a firm's exposure to operational risk is a function of how it is managed and this key variable dominates remaining variables. A larger firm has the opportunity and incentive to invest in effective management, both in terms of governance and day-to-day risk control. Arguably, in fact, it cannot *become* big in the first place without investing in effective management, and this investment will to some extent be reflected in its loss experience.

The intuition behind linear scaling is that a firm will incur more errors, the more business it does. Yet even a modest increase in business will necessitate the introduction of efficiencies, in order to be sustainable; at the same time, a failure to introduce these efficiencies would be quite apparent to any objective observer.

Other things being equal, a larger firm will have stronger earnings (reinforced by economies of scale), and so more to spend on improvements in controls and control structures, including quality of staff, external support and systems. Many such improvements will be permanent in nature. Others will be readily renewed.

Larger firms will also have more opportunity to diversify earnings sources and run risks that are independent of each other, both within the category of operational risk and across risk categories. In practice, even without diversification (which may be limited for some large specialist firms), it is the core areas of a firm's business that are likely to be the largest, entailing:

⁶⁹ Henceforth in this paper the term 'linear function' or 'linear scaling' will be shorthand for the 1:1 linear function, unless otherwise specified.

- i) the greatest experience and related governance and risk management skills; and
 - ii) the greatest incentive to invest in controls.
- Moreover, strength of earnings gives a greater loss-absorption capacity.

In areas such as transaction processing, firms have found that higher volumes of activity are strongly associated with higher levels of automation, with reduced potential for manual error. Increased automation in turn means more emphasis on tested business continuity plans. (Typically, higher volumes are also associated with higher levels of market liquidity; combined with controls and automation, greater market liquidity reduces the potential for loss from trading errors.)

Research by one member firm suggests that risk in some circumstances will be exactly the same, regardless of size of indicators such as gross income. The capacity and standard deal size of some traded markets would mean that anyone with a transaction processing error could be hit in equal measure by an eventuality such as a sudden and large rise in interest rates. In other words, the inherent riskiness of certain situations outweighs the size effect.

It may be true that, across the industry *in aggregate* there is some higher degree of correlation between loss levels and gross income. (For instance, analysis of US financial-institution losses in excess of \$50 million suggests this, though only when looking across *all* risk types.) However, this is not the same as saying that the relationship holds true for individual institutions, where the firm-specific factors discussed above will come into play. Expert opinion is that there may be a stronger statistical relationship between size and operational risk in individual business lines, but that the same underlying factors will dictate that a diminishing relationship applies here too.

Looking at other industries, for instance pharmaceuticals, it is apparent that the starting point in analysing risk and size is different: it is quality control. In a competitive environment, a larger firm simply cannot afford to lag behind a smaller one in this respect, and will use its size to achieve economies of scale that allow it to ensure this. It seems highly likely that there will be parallels for this phenomenon in the operational aspects of financial services.

It is important to note that a non-linear relationship does not necessarily discriminate against smaller firms or business lines – it assumes a standard level of risk (defined by the calibration of the charge) and then lower levels based on the real economic effects of running a larger business. Under current proposals, however, a larger firm, which is likely to be generating more revenue per unit of capital, will be penalised by a higher capital charge.

It might be argued that, on its own, greater size does not guarantee proportionally lower levels of risk. Theoretically this must be true. However, to the extent that greater size does not guarantee proportionally lower levels of risk, other readily detectable factors –for instance, external factors, material risk concentrations, or lack of experience in a given business line – may be monitored. This approach offers a more rational starting point; the alternative is to assume that becoming smaller necessarily reduces one's risk, which does not accord with either any conceptual rationale or empirical evidence.

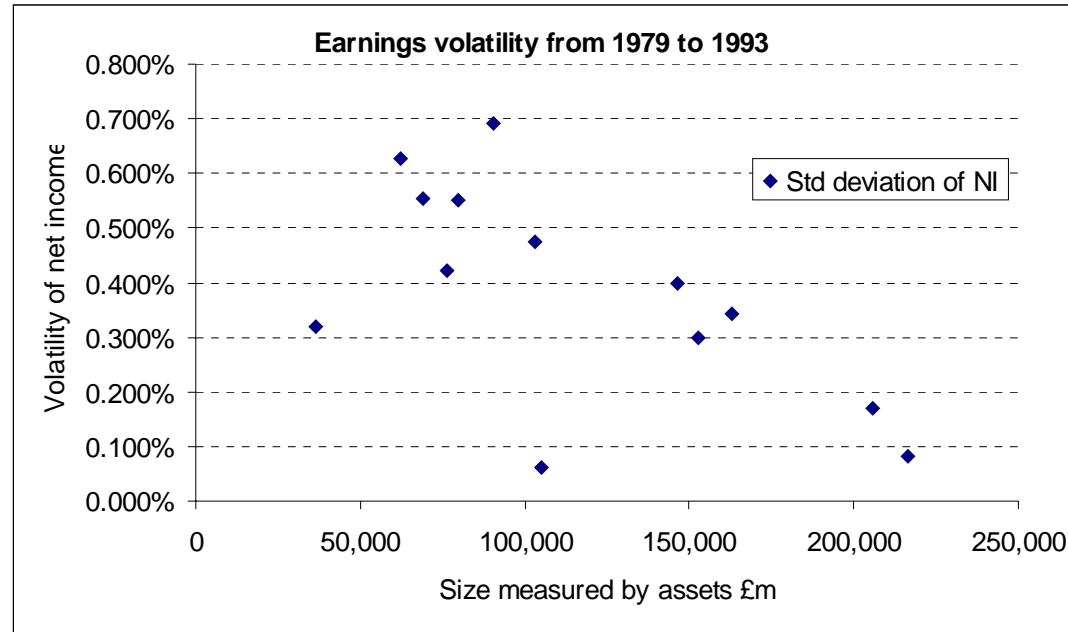
It is also argued that there is evidence of different firms of varying sizes having similar amounts of economic capital for operational risk as a proportion of total economic capital. Aside from the pitfalls associated with such figures for economic capital for operational risk, which render them of little value in calculating regulatory capital requirements⁷⁰, it is important to bear in mind that any such allocations of economic capital are made in the context of the calculation of credit and market risk economic capital, where non-linear portfolio models are used. For the percentage of economic capital allocated to operational risk to remain similar in firms of different sizes, therefore, suggests that there is a non-linear function for operational risk capital.

3- VOLATILITY OF EARNINGS

Research carried out by member firms shows that volatility of earnings will tend to *diminish* as the size of the firm increases. The chart below analyses this relationship (using standard deviation of net income as its measure) for a number of firms over the period 1979-93 – naturally, this may include

⁷⁰ See section IV of the ISDA response for details on this.

some diversification benefit, but as argued above, larger firms have more opportunity to diversify. This conclusion is also supported by a paper published by the Federal Reserve Board of New York in 1995⁷¹.



The data plotted in the chart above, all taken from public accounts, is as follows:

	A	B	C	D	E	F	G
Assets (£m)	216,576	205,870	163,116	152,862	146,334	104,923	103,318
Net income σ (%)	0.083	0.171	0.344	0.300	0.399	0.061	0.474
	H	I	J	K	L	M	
Assets (£m)	90,465	79,757	76,431	68,989	62,218	36,294	
Net income σ (%)	0.691	0.549	0.421	0.554	0.628	0.320	

Net income after tax, minority interests and exceptional items

4- MAGNIFIED DISTORTIONS

A further consideration is that reliance on a linear function exacerbates the double-counting that exists elsewhere in the proposed Accord. It is beyond the scope of this paper to deal in detail with those double-counting effects but these have already been highlighted in public fora and the issue is expected to form a part of several responses to the current round of consultation. Among the effects is the inclusion of a ‘W’ factor for legal risks in relation to credit risk mitigation techniques in spite of the fact that legal risk is explicitly envisaged as included in the definition of operational risk.

Moreover, it is a stated intention of the Basel Committee to calibrate the operational risk charge conservatively in the absence of precise industry data. Given that the charge is also expected to be calibrated to an average, a linear function will amplify in an inappropriate way a charge that is already quite likely to be too high for some firms.

Many questions remain about the use of activity-based indicators. It is beyond the scope of this paper to go into detail on this. Ultimately, however, these are relatively crude proxies⁷² and this therefore is another way in which the weaknesses of linear scaling will magnify risk-insensitivity in the Accord.

⁷¹ FRBNY Economic Policy Review, July 1995

⁷² For instance, use of gross income will be especially penal for high-margin firms.

Similarly, because of the way the Stage II ('Standardised Approach' charge) is structured, a firm which does not correspond to the model average, with the relevant number of business lines in the proportions set by the weightings, will run the risk of a charge that is not consistent with the risks they really run. Also in relation to Stage II, the 'beta' factors entail an averaging effect which, when scaled up, will be magnified, potentially inappropriately.

As regards use of indicators, experience at some member firms has shown that, aside from the issues around the form of scaling and around the choice of particular indicators, scaling on the basis of any one factor grossly oversimplifies the picture, and would therefore constitute a further form of 'double distortion'. (An analogy for this phenomenon is healthcare, where it does not make sense to allocate spending on the basis of population numbers alone, and where it would be essential to take into account other factors.)

Taking the example of transaction volumes, while the *frequency* of loss may increase as some function of the *number* of transactions, the *severity* of loss would logically be a function of the *size* of those transactions. Although a larger firm will have a greater capacity for large deals, in practice most of the increase in business size at firms typically comes from an increase in the number of transactions, which might affect the frequency of loss but will not affect the severity.

It might be fair to say that, if a *larger* number of indicators all *simultaneously* suggested a greater level of risk, then the equation could be different. In that case, however, the function could equally well be non-linear in *increasing* proportion. However, this sort of circumstance is presumably precisely what 'Pillar II' of the new regime should be capturing. It is, in the Associations' opinion, instructive that EFIRM (the European Financial Institution Risk Managers' Forum) views size as of minimal relevance. Its June 2000 paper on risk mitigation for operational risk⁷³ is based on the clear understanding that other issues are dominant in assessing vulnerability to operational loss.

5- INCENTIVES

It is appropriate when analysing the impact of scaling to examine not only the technical risk-sensitivity of the approach but also the likely effect on behaviour. Mis-specification of the sort identified would not provide the incentive for firms to grow, the *relative* advantage being in remaining small. Similarly, there would be relatively less incentive to invest in controls: although these would tend to reduce operational losses and thereby reduce the volatility of earnings, this earnings protection would not be rewarded in the capital treatment. And because there is no allowance for the risk and earnings diversification that is in practice achieved by larger firms, the incentive to run a diversified business would be greatly weakened.

These are at best questionable incentives. They are also effectively business decisions on behalf of firms, that help neither those that are already large nor those which might aspire to become large.

While diversification benefits should be recognised, it is equally important to ensure fair treatment of large yet specialised firms. The Associations strongly believe that any proposals, including scaling factors, should be tested for impact on such firms.

6- STATISTICAL CONSIDERATIONS

Strictly, there is no reason for the scaling function to be monotonic (ie, smooth), at least in relation to individual firms. When a firm reaches some given size, it becomes cost effective to introduce some extra form of control, which will actually result in a drop in losses, for example, implementing straight-through processing, or having a stand-by system ready to ensure that there is no break in system availability. However, as the size at which such changes are implemented will vary from firm to firm, there is really no practical alternative to a monotonically increasing function.

The intuitive and statistical conclusion is that the function will be curved and that even a square root function will be relatively conservative. Those responsible for database initiatives report that, based on

⁷³ 'First Considerations on Risk Mitigation in the Regulatory Discussion on Capital Charges for Operational Risk'

research carried out to date, they would recommend a function significantly more favourable to larger firms, namely to the power of one-quarter⁷⁴.

As noted above, in modelling operational losses there is a distinction made between **frequency** and **severity**. *For the purpose of scaling*, the current proposals in CP2 do not make this distinction in any of the three stages. (Inclusion of the 'Loss Distribution Approach' would, of course, obviate the whole problem, as it would be based on true risk numbers.)

Severity

The study referred to in footnote 4 makes a strong case that *severity* of loss has a weak and diminishing relationship with size. Thus, for every hundred-dollar increase in indicators such as gross income, a firm's operational losses are only likely to increase by \$100^{0.25}.

As stated above however, even this relationship has to be seen in context. Regression analysis performed by the authors of the study on the relationship produced an 'R²' statistic of around 5%. As the study makes clear, this means that "around 95% of the loss variability in the data is attributable to factors other than the independent variable [ie, size of firm]". The authors of this study add: "If the size of a firm is so weakly related to its size of loss, what are the causes of loss variability? We suspect that the vast majority of the variability is caused by factors such as inherent differences in risk (based on the type of business conducted), the competence of management, and the quality of the internal control environment." Insurance company experience leads to the same conclusion. As has been pointed out elsewhere, recognition of controls is an essential element, albeit difficult to incorporate into a capital structure.⁷⁵

Frequency

As one OpRisk modelling expert⁷⁶ consulted by the Associations has pointed out, empirical evidence suggests that loss *frequency* appears to follow a Poisson process. In such a distribution, the mean number of losses is equal to the variance, the one defining the other. A consequence of this is that, if the probability of an event doubles, then the mean of the distribution (and hence the variance) will double; but, as risk is driven by the standard deviation (and since standard deviation is equal to the square root of variance), this increases in proportion to the *square root*. In fact, in such a distribution, the larger the mean frequency (for $m > 1$), the smaller the ratio of the standard deviation to the mean, and the 'tighter' or less volatile the overall distribution. Even if mean frequency does bear a linear relationship to size – which is itself a questionable assumption – the frequency relationship at the confidence levels typically targeted for regulatory capital purposes would necessarily be non-linear.

It is impossible to disentangle the question of scaling from the question of 'expected' versus 'unexpected' loss. For expected loss, there continues to be a strong case that pricing/earnings should be taken into account and that, for the high-frequency-low-impact losses which undeniably constitute the richest data-set in regards to operational risk, the relevant question will be strength of earnings relative to such expected loss. As noted above, other things being equal, a larger firm will have stronger earnings, offsetting any increase in expected loss. (Earnings may go down in a recession, but so will business activity.) Severity data is the most clearly non-linear (as demonstrated in the article cited) and this is especially relevant to the question of unexpected loss (UL). In an operational risk context, UL is principally driven by low-frequency-high-impact losses – ie, occasional large losses, where assumptions as to severity are crucial and should be the ones that underpin capital requirements.

7- SUMMARY / PROPOSAL

In conclusion, the evidence that exists points clearly and consistently towards a non-linear function as the means to scale up or down capital requirements for operational risk. This would create incentives that are better aligned with business practice and be consistent with both theory and the experience of

⁷⁴ In an article in 'Operational Risk' in January 2000, Shih J, A Samad-Khan and P Medapa propose the equation $L = R^\alpha \times F(\theta)$, where loss L relates to Revenue size R scaled by α . ($F(\theta)$ is the residual term not explained by any variation in size.) According to this study, α would be 0.25. The data used for the study were obtained from the PricewaterhouseCoopers OpVaR database of publicly reported operational losses, containing at the time of the study over 4700 losses in excess of \$1million. NetRisk report findings consistent with this.

⁷⁵ 'Operational Risk Regulatory Approach Discussion Paper' ISDA, September 2000

⁷⁶ Ali Samad-Khan

firms. Such an approach would also be a major component of a more risk-sensitive charge, as it would offset some of the approximations being made in other aspects of the charge. (A Loss Distribution Approach would go even further in this direction.)

The Associations believe that the scaling of operational risk capital charge is an issue of such magnitude that the approach should be amended in the final capital proposals and, in addition, should be reviewed post implementation of the rules. The Associations view this as an issue of capital allocation rather than calibration, and as such not an obstacle to progress on structuring a capital charge.

The Associations would accordingly like to propose that, in addition to immediate change to the proposals, further detailed research be done on this subject, in order to base changes on the greatest possible amount of evidence. The proposed research would take into account the experience of individual firms, data modellers and insurance practitioners. Collection of the necessary data would focus on data-rich areas, particularly in fields such as transaction processing, using in-sample and out-of-sample testing. (For instance, approaches could be made to central counterparties and message processors, in which case regulatory support would clearly be necessary.)

The Associations are willing to undertake this work with a view to reporting to the Basel Committee and the European Commission on its findings. This should be feasible within a time-frame of around six months, consistent with the continuing dialogue on the refinement of the operational risk capital charge.