

Report of The Working Group on Introduction of Credit Derivatives in India

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Mumbai**

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1. Introduction

1.1 Banks are major players in the credit market and are, therefore, exposed to credit risk. Credit market is considered to be an inefficient market. On the one hand, market players like banks and financial institutions mostly have loans and little of bonds in their portfolios. They have competitive advantage in pricing and back office capabilities and therefore, earn comparatively high returns on loans. On the other hand, the mutual funds, insurance companies, pension funds and hedge funds have mostly bonds in their portfolios, with little access to loans because of lack of back office capabilities required for processing, monitoring and supervising loans. Thus, they are deprived of high returns of loans portfolios.

1.2 The market in the past did not provide the necessary credit risk protection to banks and financial institutions. Neither did it provide any mechanism to the mutual funds, insurance companies, pension funds and hedge funds to have an access to loan market to diversify their risks and earn better return. Even within the groups of banks and financial institutions, some of them had concentrated portfolios because of location or client specific business commitments. As a result, credit was sub-optimally held across financial institutions and investors.

1.3 Credit derivatives were, therefore, developed to provide a solution to the inefficiencies in the credit market. Internationally, banks are able to protect themselves from the credit risk through the mechanism of credit derivatives. However, credit derivative has not yet been used by banks and financial institutions in India in a formal way.

1.4 With a view to understanding the concept, products and types of credit derivatives, the need and scope for allowing banks and financial institutions to use credit derivatives in India and also to study the regulatory issues in this regard, a Working Group with the following

members was set up in the Department of Banking Operations and Development, Reserve Bank of India:

<u>Name of the Organisation/Dept.</u>	<u>Name of the Officer / Designation</u>
1. State Bank of India	Shri A. Ghosh, General Manager, Credit Policy and Procedures Department
2. ICICI Bank	Ms. Vishakha Mulye, Joint General Manager
3. Citibank	Shri Ravi Savur, Vice President
4. HSBC	Shri Anand Krishnamurthy, Deputy Head – Interest Rates
5. Bank of America	Shri Joydeep Sengupta, Vice President -Head Derivative Advisory
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7. Reserve Bank of India, Department of Banking Supervision	Shri Amrendra Mohan, General Manager
8. Reserve Bank of India, Exchange Control Department	Shri R.N. Kar, Deputy General Manager
9. Reserve Bank of India, Industrial & Export Credit Department	Ms. Rose Mary Sebastian, General Manager
10. Reserve Bank of India, Department of Banking Operations & Development	Shri B. Mahapatra, General Manager (Convenor)

1.5 The Group deliberated on the issues involved over a few meetings. On the basis of the deliberations and the feedback received, this Report of the Group has been prepared. The report is arranged in three chapters, viz., the conceptual aspects of credit derivatives, need and scope for credit derivatives in India and regulatory issues pertaining to credit derivatives. A summary of recommendations of the Group has been furnished at the end. The Group would like to place on record the valuable support provided to it by S/Shri K. Damodaran, Deputy General Manager, S.K. Kar, Assistant General Manager and T. Murali Mohan, Manager from the RBI, Rajeev Barua from Deutsche Bank, Shri Saurabh Jain from ICICI Bank and Shri M.R.Madhavan from Bank of America. The Group also would like to thank Ms. Kanchan Tupe from RBI for extending excellent secretarial support.

2. Conceptual Aspects of Credit Derivatives

2.1 The origin of credit derivatives can be traced back to the securitisation of mortgaged-back market of 1980s. In securitisation, the credit risk was hedged only by eliminating the credit product from the books of credit provider altogether. The credit derivative, in the present form, was formally launched by Merrill Lynch in 1991 (with USD 368 million). However, the market did not grow much till 1997. The size of the market was USD 40 and 50 billions respectively in 1996 and 1997. The market has now acquired a critical mass of over USD one trillion, half of which is concentrated at London. The average transaction size is between USD 10 to 25 million and the average tenor, which was less than two years, has now gone up to five years. However, there are only a few active players in the market and the secondary market is still illiquid.

Definition

2.2 Credit derivatives are **over the counter** financial contracts. They are usually defined as “off-balance sheet financial instruments that permit one party (beneficiary) to transfer credit risk of a reference asset, which it owns, to another party (guarantor) **without actually selling** the asset”. It, therefore, “**unbundles**” credit risk from the credit instrument and trades it separately. Credit Linked Notes (CLNs), another form of credit derivative product, also achieves the same purpose, though CLNs are on-balance sheet products.

2.3 Another way of describing credit derivative is that it is a financial contract outlining potential exchange of payments in which at least one leg of the cash flow is linked to the “performance” of a specified underlying credit sensitive asset.

Characteristic Features

2.4 The characteristic features of credit derivative are as under:

- (i) Credit derivative is a **contract** between two counterparties. One is the credit risk protection buyer or beneficiary and the other is the credit risk protection seller or guarantor.
- (ii) The protection buyer or beneficiary pays a fee, called **premium** as in insurance business, to protection seller or guarantor.
- (iii) The **reference asset** for which credit risk protection is bought and sold is pre-defined. It could be a bank loan, corporate bond / debenture, trade receivable, emerging market debt, municipal debt, etc. It could also be a portfolio of credit products.
- (iv) The **credit event** for which protection is bought or sold is also pre-defined. It could be bankruptcy, insolvency, payment default, delinquency, price decline or rating downgrade of the underlying asset / issuer.
- (v) The **settlement** between the protection buyer and protection seller on the credit event can be cash settled. It could also be settled in terms of the physical financial asset (loan or bond, etc.). If the protection seller is not satisfied with the pricing or valuation of the asset in the credit event, it has the right to ask for physical settlement.
- (vi) Credit derivatives use the International Swaps and Derivatives Association (ISDA) master agreement and the legal format of a derivative contract.

Types of Credit Derivatives

2.5 Credit derivatives can be divided into two broad categories:

- (a) Transactions where credit protection is bought and sold; and
- (b) Total return swaps.

(a) Transactions Where Credit Protection Is Bought And Sold

It is a bilateral derivative contract on one or more *reference assets* in which the protection buyer pays a fee through the life of the contract in return for a *contingent payment* by the protection seller following a *credit event* (e.g. failure to pay, credit rating downgrade, etc.) of

the reference entities. Credit default swap is an example of a credit derivative transaction where credit protection is bought and sold.

In a **Credit Default Swap (CDS)**, one party agrees to pay another party periodic fixed payments in exchange for receiving “credit event protection”, in the form of a payment, in the event that a third party or its obligations are subject to one or more pre-agreed adverse credit events over a pre-agreed time period. Typical credit events include bankruptcy, failure to pay, obligation acceleration, restructuring, and repudiation/moratorium.

It is the CDS market’s convention to refer to the party that makes the periodic payments for credit event protection as the **Protection Buyer**. Conversely, the party that provides the credit event protection is referred to as the **Protection Seller**. The third party and the specific obligation, if any, on which credit event protection is concurrently bought and sold are referred to as the **Reference Entity** and **Reference Obligation**, respectively.

In most instances, the Protection Buyer makes quarterly payments to the Protection Seller. The periodic payment is typically expressed in annualized basis points of a transaction’s notional amount. In the instance that no pre-specified credit event occurs during the life of the transaction, the Protection Seller receives the periodic payment in compensation for assuming the credit risk on the Reference Entity/Obligation. Conversely, in the instance that any one of the credit events occurs during the life of the transaction, the Protection Buyer will receive a compensating payment.

The **form of the compensation** will depend on whether the terms of a particular CDS calls for a physical or cash settlement. In a physically settled transaction, the buyer of protection would deliver the reference obligation (or an obligation of equal or higher payment priority) to the Protection Seller and receive the face value of the Reference Obligation.

Alternatively, in a cash settled transaction, the Protection Seller makes a cash payment to the Protection Buyer based on a formula that the two parties agree upon at the inception of the contract. Generally, the formula specifies that the Protection Seller pays the Protection Buyer the difference between par and the then prevailing market value of a Reference Obligation following one of the specified credit events. In some cases, the cash payment is a fixed amount decided at the inception of the contract. The CDS is discussed in greater details in Appendix A.

The other such credit derivatives are credit default option and credit linked notes. If the fee is paid fully in advance, the transaction is referred to as a **credit default option**. If the credit default swaps or options are embedded in a bond issuance, it is called a **credit linked note**. In this case, the investor in the credit linked note is the protection seller, while the issuer is the protection buyer. The interest rate risk and liquidity risk of the reference assets remain with the protection buyer until maturity or occurrence of a credit event, whichever is earlier.

(b) Total Return Swaps

Total Return Swaps (TRS) are bilateral financial contracts designed to synthetically replicate the economic returns of an underlying asset or a portfolio of assets for a pre-specified time. One counterparty (the TR payer – the protection seeker) pays the other counterparty (the TR receiver – the protection provider) the total return of a specified asset, the reference

obligation. In return, the TR receiver typically makes regular floating payments. These floating payments represent a funding cost of the TR payer. In effect, a TRS contract allows the TRS receiver to obtain the economic returns of an asset without having to fund the assets on its balance sheet. As such, a TRS is a primarily off-balance sheet financing vehicle.

When the underlying obligation is a fixed income instrument, the total return payment would consist of interest, fees (if any), and any change in the reference obligation's value. Any appreciation or depreciation in the reference obligation's value is typically determined on the basis of a poll of dealers. TRS contracts can specify that change-in-value payments be made either on a periodic interim basis (which will reduce the credit risk between the two parties to the contract) or at maturity.

Should the underlying asset decline in value by more than the coupon payment, the TRS receiver must pay the negative total return, in addition to the funding cost, to the TRS payer. At the extreme, a TRS receiver can be liable for the extreme loss that a reference asset may suffer following, for instance, the issuing company's default.

In instances when change-in-value payments are to be made at the maturity, the change-in-value payment is sometimes physically settled. In such cases, the TR payer physically delivers the reference obligation to the TR receiver at the maturity of the TRS contract in return for cash payment of the reference obligation's initial value.

Since a TRS frequently requires periodic exchanges of cash flows based in part on a mark-to-market of the underlying asset, the reference asset of a TRS is typically liquid and traded asset. When illiquid assets are referenced, alternate pricing arrangements are used.

A TRS's reference obligation can be a single asset—such as a particular bond or loan—or an index or basket of assets. TRS that reference baskets of credits or indices are becoming increasingly common due the cost-effective access they provide to portfolios of credit risk. That is, index-based TRS provide investors with their desired portfolio exposure while eliminating the cost of executing a large number of individual cash transactions to obtain it.

The maturity of the TRS does not have to match the maturity of the reference obligation, and in fact is usually shorter than the maturity of the underlying asset. Though shorter in maturity, the TRS receiver is naturally exposed to full duration exposure of the underlying asset. In a number of instances, TRS are drafted to allow either party to cancel the transaction at the anniversary date of the contract. In most instances, TRS referencing a single name typically terminate upon default of the underlying asset or other such defined credit events. At such time, the asset can be delivered and the price shortfall paid by the TR receiver. A TRS can continue despite default or other credit event if the TR receiver posts the necessary collateral.

2.6 In contrast to credit default swaps—which only transfer credit risk—a TRS transfers not only credit risk (i.e. the improvement or deterioration in credit profile of an issuer), but also market risk (i.e. any increase or decrease in general market prices). In addition, TRS contrasts with CDS since payments are exchanged among counterparties upon changes in market valuation of the underlying and not only upon the occurrence of a credit event as is the case with CDS contracts.

2.7 The different types of credit derivatives, viz., Credit Default Swaps (CDS), Credit Linked Deposits (CLDs), Credit Linked Notes (CLNs), Repackaged Notes, Collateralised Debt Obligations (CDOs), etc. are discussed in greater details in Appendix A.

3. Need and Scope for Credit Derivatives in India

Benefits from Credit derivatives

3.1 One of the more successful products introduced in India in the recent past has been the Interest Rate Derivative product. Currently, there has been an increase in the use of this product with a number of hedging benchmarks and the entry of a large number of market players. The success of this product is due to the fact that it has helped the market to transmit the interest rate risk from one participant to another. This transmission of the interest rate risk allows for the risk to be hedged away by the risk averse players and reside in players who are risk takers and /or those who are able to bear the risk.

3.2 Similarly, credit risk also requires an effective transmission mechanism. It is now imperative that a mechanism be developed that will allow for an efficient and cost effective transmission of credit risk amongst market participants. The current architecture of the financial market is either characterized by lumpiness in credit risk with the banks and development financial institutions (DFIs) or lack of access to credit market by mutual funds, insurance companies, etc.

3.3 The major hedging mechanism now available with banks and DFIs to hedge credit risk is to sell the loan asset or the debentures it holds. Banks and Development Financial Institutions require a mechanism that would allow them to provide long term financing without taking the credit risk if they so desire. They could also like to assume credit risk in certain sectors / obligors.

3.4 On the other side, investors, including banks and DFIs, would also be looking for additional yields. In an environment of declining yields, investors would welcome mechanisms where they can earn an additional yield by taking on credit risk. There exists now in India an investor base, which can be segmented along tenor lines. The mutual fund industry has investment appetite in the short end - upto 5 years, the banking industry has appetite in the middle segment - between 5 and 8 years, while the insurance companies have appetite at the very long end - over 8 year band. It is now necessary to have a mechanism that will allow credit risk to be extracted from portfolios, tranced according to tenor and risk profile (i.e. credit rating) and transferred to those agents that are most comfortable holding the credit risk with the appropriate characteristics.

3.5 Credit derivatives will give substantial benefits to all kinds of participants, including the financial system as a whole, such as:

- Banks would stand to benefit from credit derivatives mainly due to two reasons – efficient utilisation of capital and flexibility in developing/ managing a target risk portfolio. Currently, banks in India face two broad sets of issues on the credit leg of their asset – blockage of capital and loss of opportunities, for example:

- (i) Banks generally retain assets – and hence, credit risk – till maturity. This results in a blocking up of bank’s capital and impairs growth through churning of assets.
 - (ii) Due to exposure norms that restrict concentration of credit risk on their books, banks are forced to forego attractive opportunities on existing relationships.
- Asset portfolio of banks is largely constrained by distribution system and sales relationships. New banks possess capital but have to overcome high costs in building an asset portfolio. Similarly, existing banks may want to diversify portfolio but may be unable to do so because of stickiness of client relationships and switching costs.

3.6 Credit derivatives would help resolve these issues. Banks and the financial institutions derive four main benefits from credit derivatives; viz:

- Credit derivatives allow banks to transfer credit risk and hence free up capital, which can be used in productive opportunities.
- Banks can conduct business on existing client relationships in excess of exposure norms and transfer away the risks. For example, a bank which has hit its exposure limits with a client group may have to turn down a lucrative guarantee deal under current scenario. But, with credit derivatives, the bank can take up the guarantee and maintain its exposure limits by transferring the credit risk on the guarantee or previous exposures. This will allow banks to maintain client relationships.
- Banks can construct and manage a credit risk portfolio of their own choice and risk appetite unconstrained by funds, distribution and sales effort. Banks can acquire exposure to, and returns on, an asset or a portfolio of assets by simply writing a credit protection.
- Credit risk would be diversified – from “banks/DFIs alone” to other players in the financial markets and lead to financial stability.

Analogies to Conventional Banking Products

3.7 Credit derivatives are an evolution of conventional banking products for the transfer of credit risk such as Guarantees, Letters of Credit and Unfunded Sub-Participation. A credit default swap is akin to these products. The guarantee, letter of credit or unfunded sub-participation are manners in which the credit risk on a third party can be transferred between two parties; under which if the underlying credit i.e. the borrower defaults, then the guarantor has to make good the obligation to the lender; thus the guarantor takes the risk of the borrower defaulting on the obligation. In a credit default swap, the buyer of protection (“buyer”) gets an assurance from the seller of protection (“seller”), that if the underlying credit defaults, the seller will compensate the buyer for the loss that it suffers due to the default of the underlying credit.

3.8 A credit linked deposit / note enables the buyer to take on credit risk of a certain credit by subscribing to the deposit/ note of the issuer. It is similar to a funded sub-participation in a loan or bond, except that the borrower is not the same as the entity whose credit risk the investor takes. Thus, the buyer is exposed to the credit risk of the underlying asset as well as the note issuer. The basic elements of credit derivatives, thus, are the same as normal commercial banking products.

3.9 Apart from the above, the credit derivatives have the following benefits/ advantages over other products:

(a) **Other instruments / mechanisms would be less efficient.**

- Insurance, guarantees and securitisation are less liquid mechanisms in the first place.
- Credit insurance also leads to increase in intermediation because only insurance companies can write this. Due to this banks cannot directly participate in exposures of other banks for managing their own portfolio exposure and diversification attributes.
- Guarantees are limited by the current prohibition on banks from offering guarantees in favour of other banks or financial institutions.
- Classical securitisation transactions involve substantial transaction costs.

(b) **Financial intermediaries also stand to gain through indirect participation in credit-linked returns.**

Currently, intermediaries like insurance companies and mutual funds are not permitted to take certain kinds of direct exposure like lending. However, they would be able to write credit protection and earn returns on assets to which they have no access today. Also, intermediaries that lack the selling relationships would be able to participate in exposures and returns that are otherwise not available to them.

(c) **Non banking participants gain from credit derivatives primarily through hedging of credit risk exposure.**

Vendors and suppliers can hedge credit risk without recourse to funding, especially if funded limits are being used fully. Sovereign risk can also be hedged away by use of credit derivatives.

(d) **The financial system would primarily benefit due to increased usage of capital and more efficient pricing of exposures.**

With credit exposures being transferred across institutions, capital is likely to be used more efficiently as players having excess capital can take up credit risks, allowing capital-scarce players to generate more business. This leads to an overall gain to the system.

3.10 Since credit risk can be transferred, credit spreads may narrow as illiquidity is no longer a significant risk.

Nature of Participants in the Indian Market

3.11 *In order to ensure that the credit market functions efficiently, it is important to maximise the number of participants in the market to encompass banks, financial institutions, NBFCs, mutual funds, insurance companies and corporates.*

3.12 Banks would typically be both buyers and sellers of credit risk in the market. There may be cases where a bank believes that it is overexposed to a particular credit or industry. In such case, the bank will wish to buy protection. Conversely, there may be sectors or highly rated companies or fast growing companies to which a bank has little or no exposure. Entering the consortium may be a time consuming exercise. In such case, the bank will wish to sell protection. Buying and selling of participation in the priority sector is one example where credit derivatives, albeit in a different form, has been practiced for several years.

3.13 Financial Institutions and NBFCs may also find themselves in a similar position to the banks and are thus likely to be both buyers and sellers in the market.

3.14 Mutual funds and insurance companies that have an investment where they anticipate spread widening would typically be buyers of protection. Similarly, mutual funds and insurance companies that are looking for yield enhancement and believe that spreads of a given company are expected to narrow would typically be sellers of protection. Mutual funds and insurance companies may also sell protection as a means to diversify their portfolio and broaden their asset base.

3.15 Companies may participate in the credit derivatives market to either buy or sell protection. One instance where a company would wish to buy protection is when it is overexposed to one or more buyers. Conversely, parent companies sometimes provide guarantees to banks on behalf of subsidiaries and these could easily be structured as credit derivatives.

4. Regulatory Issues Pertaining to Credit Derivatives

4.1 Credit derivatives help in diversifying credit risk, improve earning and lower the risk profile of the institution. However, improper use of credit derivatives may result in an imprudent risk profile. Credit derivatives expose participants to risks familiar to commercial banks, like credit, liquidity, price, legal (compliance), foreign exchange and reputation risks. Regulators, therefore, require banks to address these issues before dealing in credit derivatives. Some of the important regulatory issues are highlighted below:

Policies and Procedures for Valuation and Risk Control

4.2 Banks / FIs, etc. using credit derivatives should have adequate systems in place to manage associated risks. :

- Policy duly approved by the Board of Directors;
- Adequate MIS to make senior management aware of the risks being undertaken;
- Credit risk acquired through a credit derivative is captured within bank's normal credit approval and monitoring regime;
- Systems to assess and account for the possibility of default correlation between reference asset and the protection provider;
- Procedure to determine an appropriate liquidity reserve to be held against uncertainty in valuation. This is important especially where the reference asset is illiquid like a loan.
- Valuation adjustments are recorded to decrease the asset or increase the liability arising from the initial valuation of a credit derivative transaction by the bank's approved mathematical models.[^]

4.3 The objective of the risk management policy should be as follows:

[^] The purpose of the valuation adjustments are to report in the bank's statements of accounts the "fair" economic value that the bank expects to realise from its credit derivative portfolios based upon current market prices and taking into account credit and market risk characteristics arising from those portfolio positions.

- To ensure that the valuation and risk assessment of a portfolio's position is fair but cautious.
- To ensure that adjustments are calculated independent of the business.
- To allow the size and reasons for adjustments to be transparent to the business management.
- To allow the business to concentrate upon the true value added of its trading activities.
- Ensure that best market practice is followed.

Issues Relating to Participants

4.4 As mentioned in the earlier section, maximising the number of participants will ensure an efficient market. For this reason, the participants suggested include banks, Financial Institutions, NBFCs (all regulated by RBI) and Mutual Funds, Insurance companies and corporates. Under current RBI regulations, banks are precluded from issuing guarantees favouring financial institutions, other banks and/or other lending agencies for the loans extended by the latter. In order to permit credit derivatives transactions to commence, this restriction needs to be lifted.

4.5 It is important, from a regulatory perspective, to protect the interests of those participants who might be less knowledgeable about credit derivatives. The protection could be as under:

- (a) Ensuring that the types of transactions entered into by the counterparty are not inappropriate for their needs;
- (b) Ensuring that the senior most levels of management at the counterparty are involved in transactions;
- (c) Ensuring that counterparties do not enter into transactions that violate other rules and regulations.

4.6 Towards this end, the regulation of credit derivatives may cover the following:

- (a) Banks, Financial Institutions, or NBFCs, Mutual Funds / Insurance companies / corporates that enter into credit derivatives transactions should be made responsible for ensuring that the transactions are appropriate for the counterparty entering into such transactions.
- (b) Banks, Financial Institutions or NBFCs, Mutual Funds / Insurance companies / corporates that enter into credit derivatives transactions should not be permitted to do so without obtaining from the counterparty, a copy of a resolution passed by their Board of Directors, authorising the counterparty to transact in credit derivatives.
- (c) Banks, Financial Institutions or NBFCs, Mutual Funds / Insurance companies / corporates that enter into credit derivatives transactions should also take necessary steps to ensure that the transaction entered into by the counterparty complies with other regulations in force.

4.7 Internationally, some of the biggest players in the market are insurance companies and mutual funds. Hence, they should be allowed to participate as both protection seller and protection buyer (more of a hedging role).

Issues Relating to Legal and Documentation

4.8 The market for credit derivatives is highly dependent upon legal enforceability and thus, requires stringent documentation standards. Given this, there is a high likelihood that participants may wish to draft their own sets of documentation. One method of ensuring that the market is efficient and is not encumbered by varying types of documents is to standardise the documentation used by the participants. The International Swaps and Derivatives Association (ISDA) has done extensive work on documentation of all derivatives including credit derivatives. Therefore, it would be preferable if transactions be covered by the 1992 ISDA Master Agreement and the 1999 ISDA Credit Derivatives Definitions and subsequent supplements to the 1999 ISDA Credit Derivatives definitions. The only exception to this should be Credit Linked Notes that are typically issued as bonds and are therefore subject to the documentation requirements of bonds.

Issues Relating to Exposure Norms

Computation of Credit Exposure to Individual/Group Borrowers

4.9 As has been described in the Monetary and Credit Policy Statement of April 2001, exposure ceilings for all fund based and non-fund based exposures will be computed in relation to total capital as defined under capital adequacy standards. This practice will naturally be applicable to determining the exposure arising out of credit derivative transactions as well. As regards the treatment of non-fund based credit limits, from April 1, 2003 exposure calculation will be computed on the basis of 100% of non-fund based exposures replacing the current proportion at 50%.

4.10 In the case of Credit Derivatives, exposure for a specific credit derivative will be driven mainly by whether the holder of the credit derivative is the protection buyer or the protection seller. This will make the treatment of credit derivatives for exposure norms somewhat different from other derivatives such as interest rate swaps and currency swaps.

4.11 While determining the overall sectoral / borrower group / individual company exposure, suitable reduction should be given in the level of exposure with respect to the credit protection bought by means of credit derivatives. The protection buyer is, however, exposed to the credit risk of protection seller in case of insolvency.

4.12 Conversely, the protection seller's exposure would increase as the protection seller acquires what is equivalent to a credit exposure on the reference asset. For the credit protection seller, the method of measuring exposure that would be applicable would be similar to the manner in which non-fund based credit limits such as guarantees are reckoned.

4.13 Once the exposure is computed to individual/group entities, banks will have to ensure that they are within the overall ceiling as laid out in the RBI guidelines.

Other issues related to exposure norms

4.14 The benefits available under special category of assets such as priority sector lending/export finance should be made available to the credit protection seller in the event that the underlying asset is/are such assets.

4.15 Sufficient provisioning (as computed based on what would be the provisioning applicable if the reference asset were on the seller's books) would have to be carried out by the credit protection seller if it is offering credit protection on a non-performing asset.

Issues Relating to Capital Adequacy Requirements

4.16 For an orderly development of the credit derivatives market, guidelines on capital adequacy rules for participants to a credit derivative transaction should be promulgated. As there are no internationally accepted capital adequacy guidelines for credit derivatives, an approach similar to the guidelines for existing credit transfer products such as financial guarantees should be adopted. The Basel Committee on Banking Supervision (BCBS) in the second Consultative Paper on the New Capital Adequacy Framework have suggested the capital treatment for credit derivatives which may be adopted with suitable modification in India while implementing the New Accord. Some of these aspects are discussed below:

Minimum Conditions

4.17 Before granting capital relief to any form of credit derivative, the supervisor must be satisfied both that the bank fulfils minimum conditions relating to risk management processes and that the credit derivative is **direct, explicit, irrevocable and unconditional**. These conditions are explained below.

Direct

The credit protection must represent a direct claim on the protection provider.

Explicit

The credit protection must be linked to specific exposures, so that the extent of the cover is clearly defined and incontrovertible.

Irrevocable

Other than a protection purchasers non-payment of money due in respect of the credit protection contract, there must be no clause in the contract that would allow the protection provider unilaterally to cancel the credit cover.

Unconditional

There should be no clause in the protection contract that could prevent the protection provider from being obliged to pay out in a timely manner in the event that the original obligor fails to make the payment(s) due.

Operational requirements for credit derivatives

4.18 In order for protection from a credit derivative to be recognised, the following conditions must be satisfied:

- (a) The credit events specified by the contracting parties must, at a minimum, include:
 - failure to pay the amounts due according to reference asset specified in the contract;
 - a reduction in the rate or amount of interest payable or the amount of scheduled interest accruals;
 - a reduction in the amount of principal or premium payable at maturity or at scheduled redemption dates;
 - a change in the ranking in the priority of payment of any obligation, causing the subordination of such obligation.
- (b) Contracts allowing for cash settlement are recognised for capital purposes insofar as a robust valuation process is in place in order to estimate loss reliably. There must also be a clearly specified period for obtaining post-credit-event valuations of the reference asset, typically no more than 30 days;
- (c) The credit protection must be legally enforceable in all relevant jurisdictions;
- (d) Default events must be triggered by any material event, e.g. failure to make payment over a certain period or filing for bankruptcy or protection from creditors;
- (e) The grace period in the credit derivative contract must not be longer than the grace period agreed upon under the loan agreement;
- (f) The protection purchaser must have the right/ability to transfer the underlying exposure to protection provider, if required for settlement;
- (g) The identity of the parties responsible for determining whether a credit event has occurred must be clearly defined. This determination must not be the sole responsibility of the protection seller. The protection buyer must have the right/ability to inform the protection provider of the occurrence of a credit event;
- (h) Where there is an asset mismatch between the exposure and the reference asset then:
 - the reference and underlying assets must be issued by the same obligor (i.e. the same legal entity); and
 - the reference asset must rank *pari passu* or more junior than the underlying asset, and legally effective cross-reference clauses (e.g. cross-default or cross-acceleration clauses) must apply.

Presence of mismatches:

4.19 In many credit derivative transactions, it is difficult to achieve an effective hedge due to the existence of mismatches and therefore, suitable adjustments should be made to the extent of credit protection obtained on account of presence of such mismatches as outlined below:

- (a) Asset mismatches: Asset mismatch will arise if the underlying asset is different from the reference obligation (in case of cash settlement) or deliverable obligation (in case of physical settlement). It should be ascertained that there are no asset mismatches before offering complete capital relief to a protection buyer from the underlying credit.
- (b) Maturity mismatches: If the maturity of the credit derivative contract is less than the maturity of the underlying asset, then it would construe as a maturity mismatch though the protection buyer would be completely hedged if the contract maturity were to be higher than the maturity of the underlying asset. In the event of a maturity mismatch, the regulatory capital to be allocated can be based on either of the views adopted for the purpose of computation of capital adequacy requirements as illustrated below:
 - If the measure of capital adequacy signifies that the concerned financial entity is adequately capitalized at the particular point in time when capital adequacy is computed, then 100% capital relief should be provided as at that instant there would

exist credit protection for the protection buyer. However, no relief should be provided if the residual maturity of the credit protection is less than one year. This can be followed irrespective of the extent of mismatch in the maturity of the credit derivative and the maturity of its underlying asset.

- **Means of Computing unhedged positions** – If the measure of capital adequacy signifies that the financial entity shall remain solvent in the long term then the extent of capital relief to be made available for credit derivative transactions with a maturity mismatch should take into account the unhedged position that is likely to arise in the future. The computation of capital adequacy for such mismatched positions may be computed in one of the following ways:
 - The risk weight on the mismatched position can be equal to the weighted average of the risk weight of the credit protection seller till the maturity of the credit derivative and the risk weight of the unhedged portion of the underlying credit till its maturity.
 - The unhedged maturity of the underlying credit in the future may be taken as a forward commitment and risk weighted at an appropriate credit conversion factor to the risk weightage applicable for the underlying credit.
- (c) Currency mismatches: A currency mismatch is caused if the credit derivative contract is denominated in a currency different to the underlying asset. In such an event, the credit protection obtained should be marked to market to the prevailing exchange rate and if the value of credit protection (valued in terms of the currency of the underlying asset) is less than the value of the underlying asset, the residual risk must be risk-weighted on the basis of the underlying asset.

Issues related to Accounting

4.20 Normal accounting entries for credit derivative transactions are fairly straightforward depending on cash flows that take place at various points in time during the tenor of the transaction. e.g. for a credit default swap, there will be periodic payment of fees by the protection buyer to the protection seller. If there is a credit event, then settlement will be appropriately accounted depending on whether cash settled or settled via physical exchange versus par payment.

4.21 However, accounting treatment for credit derivatives has entered a transition period as regulatory bodies around the world push for increased disclosure and transparency of derivative transactions. Financial Accounting Standards Board (FASB) in the US has taken a lead with the release of Financial Accounting Standard 133 (FAS 133) in 1998 – Accounting for Derivative Instruments and Hedge Activities. In June 2000, the FASB issued FAS 138, Accounting for Certain Derivative Instruments and Certain Hedging Activities – An Amendment of FASB Statement No. 133. These rules establish a market value and hedge accounting framework for derivatives that goes into effect for fiscal year beginning after June 15, 2000. These standards apply to US multinationals and financial institutions as well as all foreign firms who are obliged to follow US GAAP (Generally Accepted Accounting Principles). In a related development, the International Accounting Standards Committee (IASC), a London based organisation approved IAS 39 in late 1998, which sets comprehensive accounting requirements for financial instruments for international companies. IAS 39 has gone in effect since beginning of 2000 for companies that report under IAS standards. Though both standards are identical, there are some minor differences.

4.22 While the Working Group does not intend to go into entire details of these standards, some salient features are covered below:

Fair Value Accounting

4.23 Basic premise is that derivatives create assets and liabilities that should be captured on the balance sheet at fair value. However they do allow historical cost or other specific accounting treatment in many circumstances. Thus fair value treatment will apply to Interest-Rate / Currency Swaps, Purchase / Written Options, Futures / Forwards, Free standing credit derivatives – permissible exclusions are financial guarantees, climactic variable contracts, equity indexed contracts, traditional insurance, etc.

4.24 Hybrid contracts (e.g.- debt with call / put options, or with cap / floor feature) comprising both a standard host contract and an embedded derivative must be bifurcated with the derivative portion being fair valued. If the embedded derivative can not be reliably identified and measured then the entire hybrid contract must be fair valued. As an exemption from this treatment, embedded derivatives that do not materially alter the nature of the host contract are deemed “clearly and closely related” and may be excluded from the scope of fair value accounting.

4.25 In essence, all derivatives within the scope of the standard must be fair valued at least on a quarterly basis. The changes in fair value must be reported in current earnings unless hedge accounting is allowed in which case some or all of the change in the value of the hedging instrument should be posted directly to the Other Income (OI) account on the balance sheet. This amount would be reversed out of OI and matched in earnings with the impact of the offsetting hedged exposure.

Disclosures

4.26 Banks and other financial institutions undertaking credit derivative transactions would be required to make appropriate disclosures in their annual accounts.

5. Summary of Recommendations

5.1 The Group had deliberated on the various issues relating to the introduction of credit derivatives in India, viz., the benefits, need and scope for the introduction of credit derivatives, the regulatory issues involved and the risk management issues likely to surface as discussed in the previous chapters. On the basis of the discussions, the Group recommends that, to begin with, banks, Financial Institutions, NBFCs, Mutual Funds, Insurance companies and corporates may be allowed to introduce credit derivatives subject to compliance of the following conditions:

(i) Risk Management Systems:

- The Board of Directors of the bank/FI, etc. has approved the policy in this regard;
- The bank/FI/NBFC has adequate MIS to make Board of Directors and senior management aware of the risks being undertaken;
- Credit risk acquired through a credit derivative is captured within bank’s/FIs/NBFC’s normal credit approval and monitoring regime;

- The bank/FI/NBFC has systems to assess and account for the possibility of default correlation between reference asset and the protection provider;
- The bank/FI/NBFC has a procedure to determine an appropriate contingency plan against uncertainty in valuation. This is important especially where the reference asset is illiquid like a loan.
- Valuation adjustments are recorded to decrease the asset or increase the liability arising from the initial valuation of a credit derivative transaction by the bank's approved mathematical models.
- Further, it is important to protect the interests of those participants who might be less knowledgeable about credit derivatives. The protection could be as under:
 - Ensuring that the types of transactions entered into by the counterparty are not inappropriate for their needs;
 - Ensuring that the senior levels of management at the counterparty are involved in transactions;
 - Ensuring that counterparties do not enter into transactions that violate other rules and regulations.
 - Banks, Financial Institutions and NBFCs that enter into credit derivative transactions should be responsible for ensuring that the transactions are appropriate for the counterparty entering into such transactions.
 - Banks, Financial Institutions and NBFCs that enter into credit derivative transactions should not be permitted to do so without obtaining from the counterparty, a copy of a resolution passed by their Board of Directors, authorising the counterparty to transact in credit derivatives.
 - Banks, Financial Institutions and NBFCs that enter into credit derivative transactions should also take necessary steps to ensure that the transaction entered into by the counterparty complies with other regulations in force.

Given that the participation is being restricted to banks and FIs, NBFCs, Mutual Funds, insurance companies and corporates, each of the counterparty can judge for themselves whether it is in their interest and whether it is within the relevant rules and regulations.

(ii) Documentation:

The credit derivative transactions should be covered by the ISDA Master Agreement 1992 and the ISDA Credit Derivatives Definitions 1999. The only exception to this should be Credit Linked Notes that are typically issued as bonds and are, therefore, subject to the documentation requirements of bonds. However, the suggested documentation should be agreeable by both the parties

(iii) Exposure Norms:

- In the case of credit derivatives, exposure for a specific credit derivative will be driven mainly by whether the holder of the credit derivative is the protection buyer or the protection seller.
- While determining the overall sectoral / borrower group / individual company exposure, suitable reduction should be given in the level of exposure with respect to the credit protection bought by means of credit derivatives. Conversely, the protection seller's exposure would increase as the protection seller acquires what is equivalent to a credit exposure on the reference asset. Once the exposure is computed to individual/group

entities, banks/FIs will have to ensure that they are within the overall ceiling as laid out in the RBI guidelines.

- The benefits available under special category of assets such as priority sector lending/export finance should be made available to the credit protection seller in the event that the underlying asset is/are such assets.
- Sufficient provisioning (as computed based on what would be the provisioning applicable if the reference asset were on the seller's books) would have to be carried out by the credit protection seller if it is offering credit protection on a non performing asset.

The protection buyer should not make any provision for a reference asset that has turned to NPA.

(iv) Capital adequacy:

For capital adequacy purposes, the banks should adopt an approach similar to the guidelines for existing credit transfer products such as financial guarantees. Before being granted capital relief to any form of credit derivative, the banks/ FIs must fulfill minimum conditions relating to risk management processes and that the credit derivative is direct, explicit, irrevocable and unconditional.

(v) Accounting:

- The normal accounting entries for credit derivative transactions should be fairly straightforward depending on cash flows that take place at various points in time during the tenor of the transaction, e.g., for a credit default swap, there will be periodic payment of fees by the protection buyer to the protection seller. If there is a credit event, then settlement will be appropriately accounted depending on whether cash settled or settled via physical exchange versus par payment.
- However, all derivatives within the scope of the standard must be fair valued at least on a quarterly basis. The changes in fair value must be reported in current earnings unless hedge accounting is allowed in which case some or all of the change in the value of the hedging instrument should be posted directly to the Other Income (OI) account on the balance sheet. This amount would be reversed out of OI and matched in earnings with the impact of the offsetting hedged exposure.

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Appendix A

I. Credit Default Swaps

Introduction

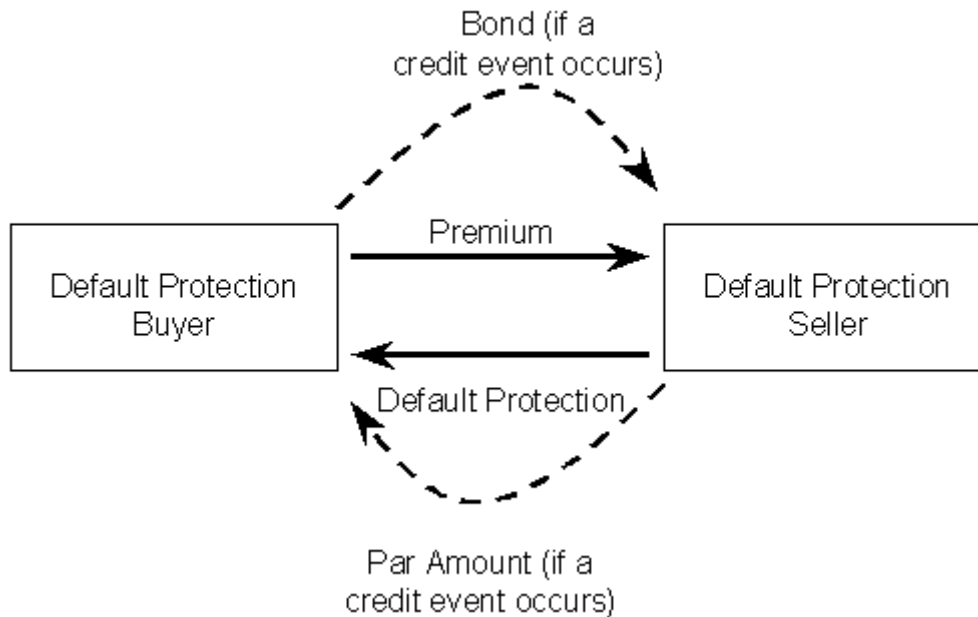
1. The Credit Default Swaps (CDS) have grown rapidly in the credit risk market since their introduction in the early 1990s. It is believed that current usage is but a small fraction of what it will ultimately represent in the credit risk markets. In particular, the CDS market will become as central to the management of credit risk as the interest rate swap market is to the management of market risk.

Description

2. In a CDS, as shown below in Figure 1, one party agrees to pay another party periodic fixed payments in exchange for receiving “credit event protection”, in the form of a payment, in the event that a third party or its obligations are subject to one or more pre-agreed adverse credit events over a pre-agreed time period. Typical credit events include bankruptcy, failure to pay, obligation acceleration, restructuring, and repudiation/moratorium. With few exceptions, the legal framework of a CDS – that is, the documentation evidencing the transaction – is based on a confirmation document and legal definitions set forth by the International Swaps and Derivatives Association, Inc. (ISDA).

3. It is the CDS market’s convention to refer to the party that makes the periodic payments for credit event protection as the *Protection Buyer*. Conversely, the party that provides the credit event protection is referred to as the *Protection Seller*. The third party and the specific obligation, if any, on which credit event protection is concurrently bought and sold are referred to as the *Reference Entity* and *Reference Obligation*, respectively.

Figure 1 **Physically Settled Credit Default Swap**

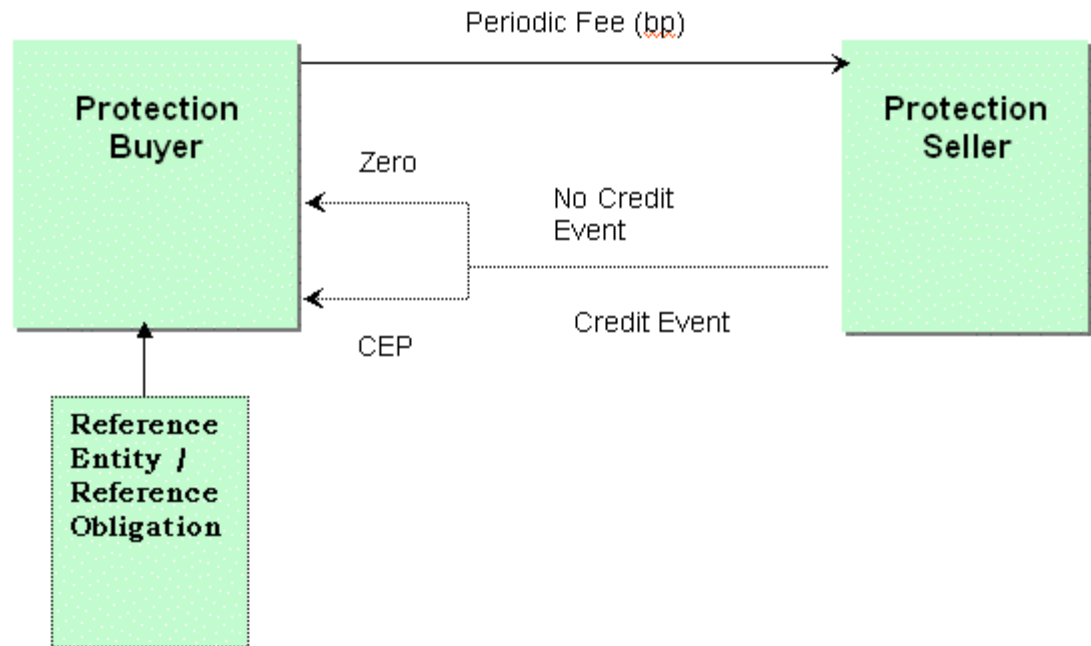


4. In most instances, the Protection Buyer makes quarterly payments to the Protection Seller. The periodic payment is typically expressed in annualized basis points of a transaction’s notional amount. In the instance that no pre-specified credit event occurs during the life of the transaction, the Protection Seller receives the periodic payment in compensation for assuming the credit risk on the Reference Entity/Obligation. Conversely, in the instance that any one of the credit events occurs during the life of the transaction, the Protection Buyer will receive a compensating payment.

5. The **form of the compensation** will depend on whether the terms of a particular CDS calls for a physical or cash settlement. In a physically settled transaction, the buyer of protection would deliver the reference obligation (or an obligation of equal or higher payment priority) to the Protection Seller and receive the face value of the Reference Obligation.

6. Alternatively, in a cash settled transaction, the Protection Seller makes a cash payment to the Protection Buyer based on a formula that the two parties agree upon at the inception of the contract. Generally, the formula specifies that the Protection Seller pays the Protection Buyer the difference between par and the then prevailing market value of a Reference Obligation following one of the specified credit events. In some cases, the cash payment is a fixed amount decided at the inception of the contract. Figure 2 pictorially shows the transactions under a cash settled CDS.

Figure 2
Cash Settled Credit Default Swaps



CEP refers to Credit Event Payment.

7. Thus, the CDS is a swap transaction under which:

- On start date, no payments are made by either party; and
- On periodic interim dates, Protection Buyer pays to Protection Seller pre-agreed amounts; and
- If a Credit Event does not occur, no further payments are made at maturity; or
- If a Credit Event occurs and physical settlement applies, the transaction shall accelerate and Protection Buyer shall deliver the Deliverable Obligations (defined below) to Protection Seller against payment of a pre-agreed amount; or
- If a Credit Event occurs and cash settlement applies, the transaction shall accelerate and Protection Seller shall pay to Protection Buyer the excess of (a) the par value of the Deliverable Obligations on start date over (b) the prevailing market value of the Deliverable Obligations upon occurrence of the Credit Event. (The procedure for determining market value of Deliverable Obligations is defined in the ISDA definitions or may be defined in the related Confirmation), or a pre-determined amount agreed by both parties on inception of the transaction.

8. Characteristics of Credit Default Swap

- Transforms asset specific credit risk to reference entity risk
- Contingent settlement, which is triggered by a Credit Event, can be calculated in several ways. Settlement options include:
 - physical delivery of Reference Obligation (or other Deliverable Obligations) in exchange for par value
 - cash settlement equal to $[(\text{Par} - \text{Recovery Value}) * \text{notional}]$
 - cash settlement equal to an agreed % of notional e.g. 50% of the notional of the transaction.

- “Deliverable Obligations” defines what assets are eligible for delivery as settlement in a physical delivery contract. Usually includes Reference Obligation but will often be broader to include other Obligations
- “Obligations” defines what assets may trigger a Credit Event

9. Uses and Benefits of Credit Default Swaps

- Effective tool for hedging against changes in Credit Spreads - Default swaps are dynamic, market-sensitive products whose mark-to-market performance is closely related to changes in credit spreads. As a result, they are an effective tool for hedging (or for assuming exposure to) changes in credit spread as well as default risk.
- Ability to create custom maturity products - An investor wants a three-year maturity and duration exposure to an issuer that has only 2-year and 10-year securities outstanding. Selling a three-year Default Swap on the 10-year security can create the required exposure. In effect, the investor will have taken on the credit risk for the duration of the swap, i.e. 3 years.
- Management of concentration of credit risk within credit portfolios - An investor who owns a portfolio of credits can alter the concentration risk of their portfolio by buying or selling credit risk on different names and varying maturities by using credit default swaps.
- Management of credit limits - For banks that have loans or transactions with counterparties that require further funding but are constrained because of internal or regulatory credit limits, credit default swaps can allow the bank to reduce the credit exposure to that counterparty without damaging the business relationship.

Pricing of CDS

10. CDS premium quotations are typically in basis points per year. The cash market equivalent would be the credit spread over Government bonds at which a given corporate trades, e.g. 200 basis points over 5 year Govt of India bonds.

If a counterparty seeks to go short credit risk (i.e. to sell protection on a given asset), a credit derivatives dealer can hedge the transaction by actually buying the asset. Therefore, the credit spread over risk-free assets (e.g. Government of India bonds of equal tenor) are a good indication of where the CDS premium on an asset will trade. The reasons that the CDS premium will not be exactly equal to the credit spread include:

- (a) the fact that CDSs offer the ability to transfer credit risk confidentially and efficiently, which will increase the price of the CDS;
- (b) the fact that Government of India bonds cannot be sold short and therefore, interest rate risk cannot be removed completely in the hedge, which will also increase the price of the CDS;
- (c) banks may have greater demand for the credit risk of certain underlyings and this may reduce the price of the CDS; and
- (d) the default protection buyer is taking credit risk on the default protection seller.

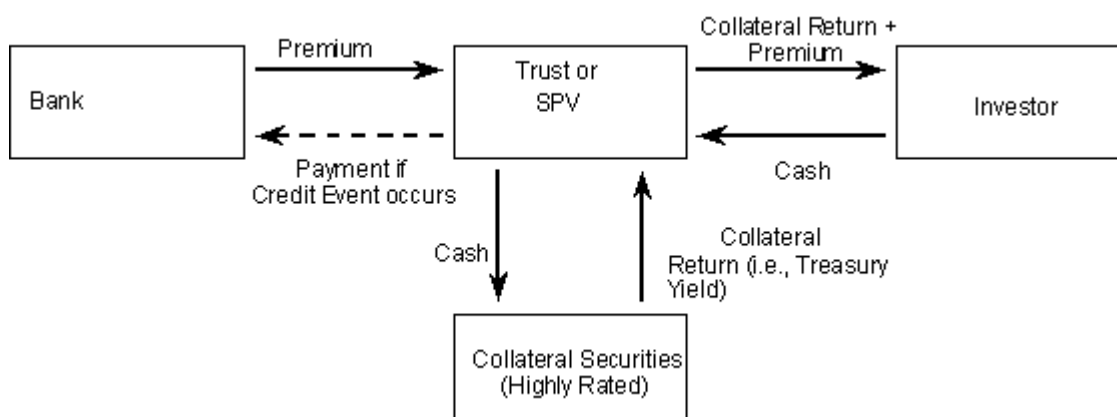
Appendix B and C give pricing and ISDA terms in detail.

II. Credit Linked Notes

11. The Credit-Linked Note (CLN) market is one of the fastest growing areas in the credit derivatives sector. It is, a combination of a regular note (bond or deposit) and a credit-option. Since it is a regular note with coupon, maturity and redemption, it is an on-balance sheet equivalent of a credit default swap. Under this structure, the coupon or price of the note is linked to the performance of a reference asset. It offers borrowers a hedge against credit risk and investors a higher yield for buying a credit exposure synthetically rather than buying it in the publicly traded debt.

12. Credit Linked Notes (CLNs), as seen in Figure 3, are created through a Special Purpose Vehicle (SPV), or trust, which is collateralized with AAA-rated securities. CLNs can also be issued directly by a bank or financial institution or non-banking finance company. Investors buy the securities from the trust (or issuing bank) that pays a fixed or floating coupon during the life of the note. At maturity, the investors receive par unless the referenced credit defaults or declares bankruptcy, in which case they receive an amount equal to the recovery rate. Here the investor is, in fact, selling the credit protection in exchange for higher yield on the note.

Figure 3
Credit Linked Note Structure



13. If the issuer is a trust, it enters into a default swap with a deal arranger. In the case of default, the trust pays the dealer par minus the recovery rate in exchange for an annual fee. This annual fee is passed on to the investors in the form of a higher yield on the notes. In this structure, the investors can obtain higher yield for taking the same risk as the holder of the underlying reference credit. The investor does, however, take the additional risk, albeit limited, of its exposure to the AAA-rated trust or issuing bank. The Credit-Linked Note allows a bank to lay off its credit exposure to a range of credits to other parties.

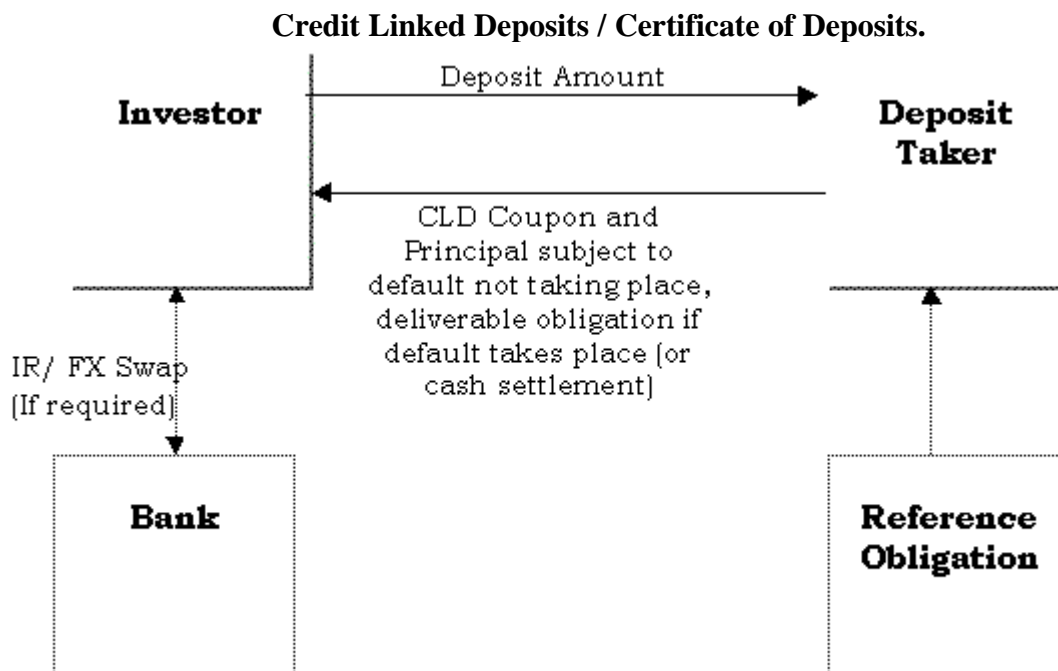
III. Credit Linked Deposits/ Credit Linked Certificates of Deposit

14. Credit Linked Deposits (CLDs) are structured deposits with embedded default swaps. Conceptually they can be thought of as deposits along with a default swap that the investor sells to the deposit taker. The default contingency can be based on a variety of underlying assets, including a specific corporate loan or security, a portfolio of loans or securities or sovereign debt instruments, or even a portfolio of contracts which give rise to credit

exposure. If necessary, the structure can include an interest rate or foreign exchange swap to create cash flows required by investor.

15. In effect, the investor is selling protection on the reference obligation and earning a premium in the form of a yield spread over plain deposits (this is akin to the investor investing money or buying a bond issued by the Reference Entity to earn higher yield than plain deposits). If a credit event occurs during the tenure of the CLD, the deposit accelerates and the investor would get the Deliverable Obligation instead of the Deposit Amount.

Figure 4



16. “Credit Linked Deposits, Credit Linked Certificates of Deposits or Credit Linked Notes” are transactions under which deposit taker/note issuer is the Protection Buyer and the depositor/investor is the Protection Seller, such that:

- On start date, Protection Seller deposits/pays notional amount to Protection Buyer; and
- On periodic interim dates, Protection Buyer pays to Protection Seller pre-agreed coupon on notional amount; and
- If a Credit Event does not occur, Protection Buyer redeems deposit/note at full notional amount at maturity; or
- If a Credit Event occurs and physical settlement applies, the deposit/note shall accelerate and Protection Buyer shall deliver the Deliverable Obligations to Protection Seller; or
- If a Credit Event occurs and if cash settlement applies, the transaction shall accelerate and Protection Seller shall pay to Protection Buyer the prevailing market value of the Deliverable Obligations upon occurrence of the Credit Event.

17. Characteristics

- Notes can be structured as Medium Term Notes or trust certificates - (This shall be subject to regulatory guidelines, if any)
- Amount of principal redemption is linked to the recovery value of the Reference Obligations. In the event of default, principal redemption may be cash or physical delivery of the Reference Obligations
- In the case of no default, investors continue to have exposure to the Deposit taker/ issuer of the Medium Term Notes or the underlying collateral of the trust
- Deposits/ Notes can also be structured to provide varying principal protection

18. Uses and Benefits of CLDs

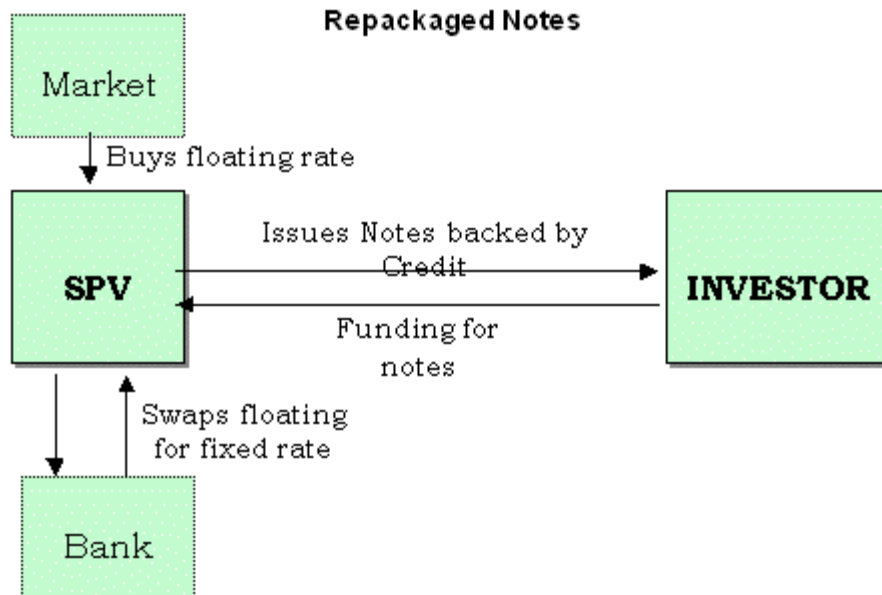
- Access - CLDs enable investments in credits when there are no cash markets available for that credit.
- Synthetic Maturity - CLDs can be created with customized maturity structures and credit features that are otherwise not available in the cash market.
- Credit Lines - Banks can issue CLDs that are linked to loan credits in their portfolios. This can free up credit lines to a particular borrower, as well as give non-bank investors access to credit opportunities that may otherwise not normally be available in the capital markets.
- Elimination of Counterparty risk - As the CLD is a funded transaction by the investor in the CLD, there is no counterparty risk as there would be with buying protection using a credit default swap.

IV. Repackaged Notes

19. Repackaging involves placing securities and derivatives in a Special Purpose Vehicle (SPV) which then issues customized notes that are backed by the instruments placed. SPV can be incorporated either locally or offshore.

20. The difference between repackaged notes and CLDs (Credit Linked Deposits) is that while CLDs are default swaps embedded in deposits/notes, repackaged notes are issued against collateral - which typically would include cash collateral (bonds / loans / cash) and derivative contracts. Figure 5 below pictorially depicts the transactions under a Repackaged Note.

Figure 5 **Repackaged Notes**



21. Repackaging involves incurring of initial set-up costs (of the SPV) and an additional transaction cost, but that cost is more often than not justifiable, given the tailor-made investment that the investor can make.

22. Another feature of Repackaged Notes is that any issue by the SPV has recourse only to the collateral of that issue.

Benefits and Uses of Repackaged Notes

23. The motivation behind repackaging is to offer the investor a customized product. Securities may have certain attractive features and other not-so-attractive features. Repackaging helps eliminate these not-so-attractive features. For example, a security may be unappealing because of denomination in an inaccessible currency, or because of absence of a liquid market or simply because the interest rate risk may not be in the form the investor wants. Repackaging through an SPV helps eliminate these unappealing features. Repackaged Notes, being clearable through recognised clearing systems can have greater liquidity and better delivery facilities.

24. In summary, the main benefits of using repackaged notes are:

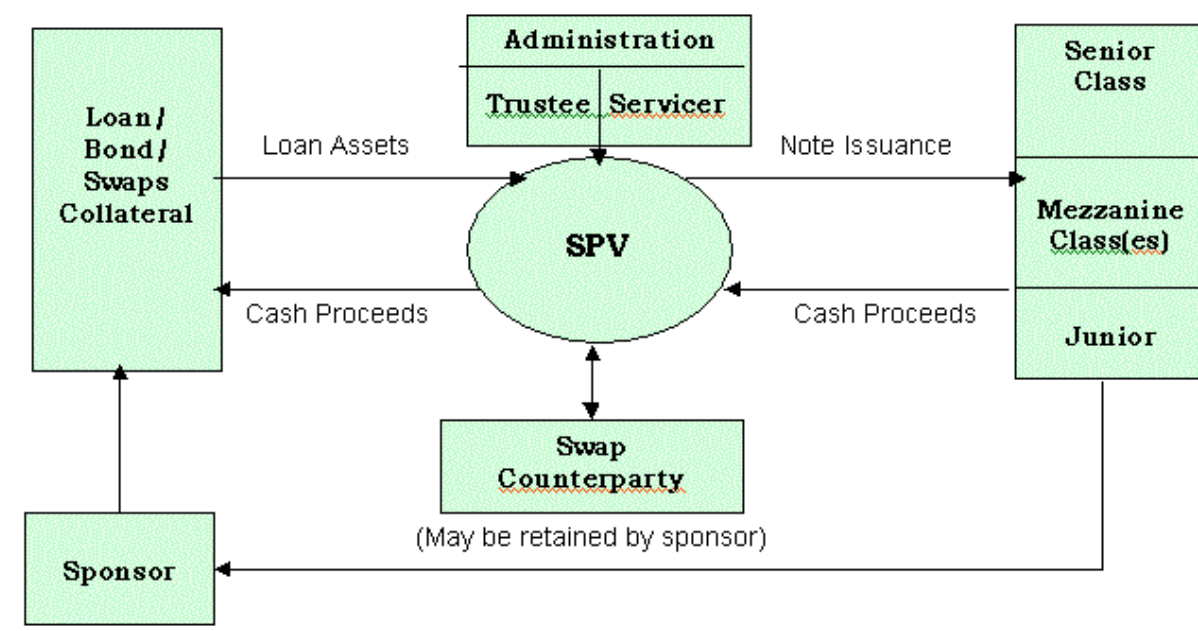
- **Increased market access** - As the issued notes are frequently eurobonds or medium-term notes, the market for these types of products is wider.
- **Meets the needs of restricted investors** - Several investors can invest in bonds/notes but cannot transact in swaps or other types of securities. The repackage note allows the investor to receive the desired exposure without breaching internal guidelines.
- **Choice of documentation** - The repackaged notes documentation is not limited to ISDA and so documentation is more flexible.
- **Tailor-made package of risk** - Investors can tailor their risk to a single credit, portfolio of credits, leverage their risk or create exotic payout structures.

V. Other forms of Repackaged Notes

Collateralised Debt Obligations (CDOs)

25. CDOs are specialized repackaged offerings that typically involve a large portfolio of credits. Both involve issuance of debt by a SPV based on collateral of underlying credit(s). The essential difference between a repackaging programme and a CDO is that while a simple repackaging usually delivers the entire risk inherent in the underlying collateral (securities and derivatives) to the investor, a CDO involves a horizontal splitting of that risk and categorizing investors into senior class debt, mezzanine classes and a junior debt. CDO may be subject to local debt registration / regulatory requirements. The transactions under a CDO is shown in figure 6.

Figure 6
Collateralised Debt Obligations.



26. Explanation of Related Terms

Sponsor: The entity that places the portfolio in the SPV

Senior Debt: That portion of funding, which has the lowest risk weight, or the highest rated debt

Mezzanine Debt: That portion of funding, which has debt in ascending order of risk weights, or in descending order of ratings

Equity: The balance funding, which has the highest risk weight, or the lowest rated debt.

27. CDOs may be further categorized, based on the structure with which funding is raised. The funding could be raised by issuing bonds, which are called Collateralised Bond Obligations (CBOs) or by raising loans, which are called Collateralised Loan Obligations (CLOs).

28. Since the underlying credit is not a single asset but a **portfolio** of assets, the risk that it carries is a composite risk. To elucidate, some assets may have greater credit risk than others and there is a degree of correlation that each asset has with other assets in the portfolio. This means that the probability and timing of default/ downgrade could vary. Also, the cash flows from each of the assets are not uniform. This presents with a new risk, which is reinvestment. To put it differently, it is possible to issue debt with different risk weights, which means that it is possible to sell senior and mezzanine levels of debt. Also, there is an equity component, which may be sold off or retained by the sponsor.

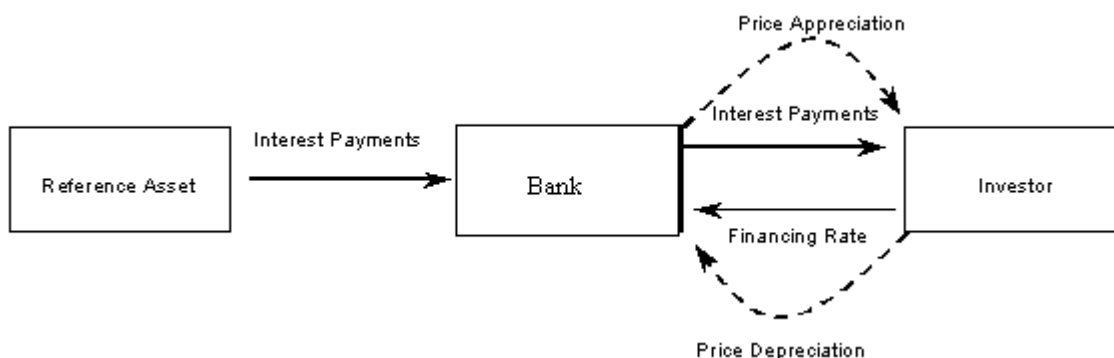
Benefits and Uses of CDOs

29. The most important benefit of a CDO is that the underlying portfolio can be sliced into various risk categories and can be sold to different investors who have different risk appetites. There is a first loss tranche of the portfolio that has the greatest risk of default and also therefore, the highest yield. As the risk diminishes, the yield diminishes. Banks find it very convenient to sell off entire portfolios to investors having different risk appetites by having different tranches, rather than selling investments individually.

VI. Total Return Swaps

30. Total return swaps (TRS) are bilateral financial contracts designed to synthetically replicate the economic returns of an underlying asset or a portfolio of assets for a pre-specified time. As illustrated in Figure 7, one counterparty (the TR payer) pays the other counterparty (the TR receiver) the total return of a specified asset, the reference obligation. In return, the TR receiver typically makes regular floating payments. These floating payments represent a funding cost. In effect, a TRS contract allows the TRS receiver to obtain the economic returns of an asset without having to fund the assets on its balance sheet. As such, a TRS is a primarily off-balance sheet financing vehicle.

Figure 7
Total Return Swap



31. When the underlying obligation is a fixed income instrument, the total return payment would consist of interest, fees (if any), and any change in the reference obligation's value. Any appreciation or depreciation in the reference obligation's value is typically determined

on the basis of a poll of dealers. TRS contracts can specify that change-in-value payments be made either on a periodic interim basis (which will reduce the credit risk between the two parties to the contract) or at maturity.

32. Should the underlying asset decline in value by more than the coupon payment, the TRS receiver must pay the negative total return, in addition to the funding cost, to the TRS payer. At the extreme, a TRS receiver can be liable for the extreme loss that a reference asset may suffer following, for instance, the issuing company's default.

33. In instances when change-in-value payments are to be made at the maturity, the change-in-value payment is sometimes physically settled. In such cases, the TR payer physically delivers the reference obligation to the TR receiver at the maturity of the TRS contract in return for cash payment of the reference obligation's initial value.

34. Because a TRS frequently requires periodic exchanges of cash flows based in part on a mark-to-market of the underlying asset, TRS typically reference liquid, traded assets. When illiquid assets are referenced, alternate pricing arrangements are used.

35. A TRS's reference obligation can be a single asset—such as a particular bond or loan—or an index or basket of assets. TRS that reference baskets of credits or indices are becoming increasingly common due the cost-effective access they provide to portfolios of credit risk. That is, index-based TRS provide investors with their desired portfolio exposure while eliminating the cost of executing a large number of individual cash transactions to obtain it.

36. The maturity of the TRS does not have to match the maturity of the reference obligation, and in fact is usually shorter than the maturity of the underlying asset. Though shorter in maturity, the TRS receiver is naturally exposed to full duration exposure of the underlying asset. In a number of instances, TRS are drafted to allow either party to cancel the transaction at the anniversary date of the contract. In most instances, TRS referencing a single name typically terminate upon default of the underlying asset or other such defined credit events. At such time, the asset can be delivered and the price shortfall paid by the TR receiver. A TRS can continue despite default or other credit event if the TR receiver posts the necessary collateral.

37. **In contrast to credit default swaps**—which only transfer credit risk—a TRS transfers not only to credit risk (i.e. the improvement or deterioration in credit profile of an issuer), but also market risk (i.e. any increase or decrease in general market prices). In addition, TRS contrast with CDS in that payments are exchanged among counterparties upon changes in market valuation of the underlying, not only upon the occurrence of a credit event as is the case with CDS contracts.

Pricing

38. TRS pricing is based on a dealer's cost to fund its hedge. Generally speaking, a static hedge would consist of a TR payer's cost of purchasing the asset at trade inception, funding and servicing the asset on balance sheet for the duration of the transaction, and selling the asset at trade maturity. As such, the cost of the trade depends mainly on the funding cost of the TR payer and any regulatory capital charges incurred. A TRS payer's funding cost is

naturally a function of its creditworthiness/rating. A regulatory charge in turn—assuming a bank is the TR payer—depends on the BIS risk weightings of the reference obligation.

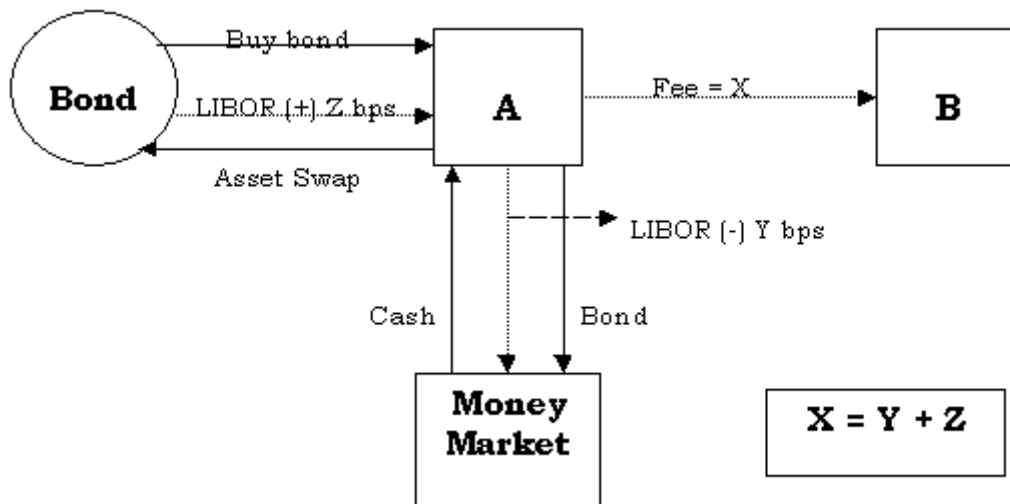
39. Secondly, TRS pricing also needs to account for counterparty risk and repo financing (if available) for the reference obligation. A TRS payer can either seek to be compensated for the counterparty risk—that is, the possibility that a TR receiver might default on its payments—by either charging a higher funding cost, or more typically, by requiring collateral to be posted.

40. Naturally, perfect hedges are not always available. In those instances, TRS pricing also needs to include additional compensation for the basis risk borne by the TRS payer arising from the imperfect hedge.

Appendix B Pricing of Credit Default Swaps

Pricing based on Cash Market credit spreads

41. A credit default swap is a transfer of credit risk to the protection seller. The pricing must therefore, be based on credit spreads in the Cash Market. Besides the cash market, spreads in the futures markets and the swap markets play an important part in influencing prices. Market liquidity and the ability of the market maker to finance a hedging transaction also influence prices of default swaps.



42. When an investor purchases an asset that includes credit risk, the return on the investment includes a spread premium over the risk-free rate to compensate for the risk of default and loss (as well as a liquidity premium). Credit spreads for many financial assets are readily observable in the marketplace.

43. Since credit default swaps represent exchanges of credit risk between counterparties, intuitively they should be (and frequently are) priced based on credit spreads on cash market benchmarks. More specifically, the pricing is driven by a combination of cash market credit

spread levels and the market maker's ability to finance a hedging transaction in the cash market.

44. For example, recently four-year default swaps on American Express (Aa3/A+) were bid at 28 bp and offered at 42 bp. (A dealer would pay a 28 bp annual premium to buy protection, and sell protection in return for a 42 bp annual premium.) A roughly comparable maturity American Ex-press debenture (6 ³/₄% of June 2004) was offered (on an asset swap basis) at LIBOR + 17 bp and bid at LIBOR + 28 bp (see table on next page).

- **If a dealer purchases protection**, it can generate income to pay this premium by purchasing the reference asset on an asset swap basis (to isolate credit risk) and financing the position either at its borrowing cost or in the repo market. The breakeven financing rate is quite simply the asset swap yield (5.17%) less the default swap premium (28 bp), or 4.89%. If the dealer can obtain cheaper financing it earns positive carry, or alternatively, can afford to pay a higher premium. If the reference asset cannot be financed in the repo market, as in India, then the pricing of the default swap will be driven by the market maker with the most favourable cost of funds –typically a highly rated bank. Other market makers with higher cost of funds must accept negative carry if they buy protection.
- **If a dealer sells protection**, it can hedge its exposure by borrowing and selling the reference asset and investing the cash proceeds in a risk-free asset. In the event of default or other credit event, the risk-free asset is redeemed at par and the shorted reference asset is re-purchased at the then current market level and returned to the original owner. The remaining cash (par less the cost of repurchasing the defaulted asset) is then paid to the protection buyer counterparty. Assuming the dealer borrows and shorts the reference security, it must receive a risk-free rate on the proceeds and a default premium sufficient to cover the coupon on the borrowed security. In the American Express example, the breakeven rate is the bid side asset swap rate on the reference security (5.28%) less the default swap premium (42 bp), or 4.86%. At a higher rate the dealer earns positive carry. Note the breakeven risk-free rate is above the general collateral (GC) rate, implying that this is a negative carry transaction. Alternatively, the market maker could use the proceeds of the short sale to pay down its liabilities (effectively investing at its borrowing cost). If the market maker is a highly rated bank the incremental risk is small. But dealers with higher cost of funds must either accept negative carry in this transaction or invest in a more risky asset, such as its own liabilities or commercial paper. Note also if the underlying security could be financed at a special (below GC) rate buyers of protection may be willing to pay a higher default swap premium, resulting in a lower breakeven rate for sellers of protection. Whether favourable financing translates into higher default spread levels will depend of course on the interaction of supply and demand for protection on the credit.

Default Swap Breakeven Analysis

Reference Asset: American Express (Aa3/A+) 6 ³/₄% of June 2004
 Default Swap Term: 4 years

3M US LIBOR	Asset Swap Spread (bp)	Default Swap	Breakeven Funding	General Collateral
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	(%)		Premium	Rate	Rate
Bid Protection	5.00%	17 bp	28 bp	4.89%	4.80%
Ask Protection	5.00%	28 bp	42 bp	4.86%	4.75%

45. To facilitate the comparison we have presented this analysis based on the asset swap spread levels of the cash security. If instead the market maker who sells protection and hedges through borrowing and selling the reference asset is obligated to pay the original owner a fixed coupon, then the floating asset-swapped yield can be swapped to fixed. It can be seen then that pricing of a default swap depends on an interaction of the pricing or spread on the underlying reference asset, the financing rate for the reference asset, and the swap curve. It is also apparent that holding other variables constant, the price of the default swap will change as the credit spread on the underlying cash instrument changes.

46. A good example of how these variables interact is the performance of Brazilian IDU bonds in the 1998-99. During a highly volatile period, default swap spreads tracked asset swap spreads on IDUs. But the differential between these spread series also varied significantly, from near zero in July 1998 (when asset swap spreads were near default swap levels) to as low as a negative 290 bp in November (when asset swaps were substantially less than default swap levels). This variation has been largely a result of changing conditions in the repo market for certain emerging market bonds (including IDUs), which have traded at aggressively special levels at times. The availability of cheap repo market financing for reference securities allowed market makers to increase their bid for protection relative to asset swap spreads. In addition, there are a number of other factors that may lead to differences between observed pricing on a default swap and the pricing implied by this asset swap/repo market framework:

Liquidity – One problem is that the default swap market may offer limited liquidity. Since credit derivatives are OTC products negotiated separately between individual counterparties, they may be less liquid than the underlying reference credit. This will tend to drive a wedge between the default swap premium and the cash market implied premium and causes the actual premium to be higher than the implied premium. A related problem is that the default swap market tends to be characterised by periods of one-sidedness - i.e., periods when investors either mostly want to buy protection, or to sell protection. Market makers may have difficulty laying off risk in a one-sided market (by entering into an offsetting default swap) or hedging positions if underlying reference assets are not readily available in the cash market. This will result in wider bid/ask spreads, but may also affect the relative level of credit premiums in the cash and default swap markets. Alternatively, sometimes the default swap market may offer more liquidity or ease of transacting than in the underlying cash market, especially in emerging markets and high yield sectors. In these situations, the default swap market plays a role that is in essence similar to the futures market vis-a-vis the underlying government bond market. Just as the futures market provides a liquid medium for investors to express a view about the underlying cash market even though individual cash bond issues may be difficult or expensive to transact, the default swap market allows investors to express a view about a reference entity without having to enter into (in many cases) highly inefficient cash market transactions.

Correlation – Correlation is primarily an issue at the individual portfolio level, and as such it should not affect the pricing of default swaps per se in reasonably liquid markets. But in a still developing market, correlation problems may give rise to technical supply and demand factors. If correlation in a given portfolio is relatively high or a portfolio has high concentrations that could be highly correlated in certain scenarios, a portfolio manager may be willing to pay a relatively high price (relative to cash market credit premiums) to purchase protection to hedge credit risk. Alternatively a portfolio manager may accept a relatively low premium to sell protection and thereby diversify credit exposure. Over time, however, this activity should actually lead to a more efficient market for default swaps. Using default swaps to manage credit risk in a portfolio context has received much attention in the past year, but to date, most credit portfolio managers are either not actively managing their portfolios in this way or have taken only tentative steps. In many organisations, it has been very difficult to gather the data required to develop robust credit models. As more people and institutions become familiar with quantitative credit techniques and commercially available models become more robust, we expect credit derivatives will be used more widely to manage portfolio credit risk and correlation-related issues. This in turn will enhance market liquidity.

Counterparty risk – In a credit default swap transaction, the protection buyer has counterparty exposure to the protection seller. If the protection seller and the issuer of the reference credit default simultaneously, the buyer will suffer the full loss despite having paid for default protection. Thus the protection buyer must ensure that the correlation risk between the protection seller and the reference asset is low. In times of low credit concerns (perhaps in periods of high economic growth), buyers of protection will tend not to focus on counterparty risk and A-rated counterparties may be able to sell protection on equivalent terms as AAA-rated counterparties. In periods of high credit concerns, however, buyers of protection might eschew counterparties rated below, say, A1 at any price.

Appendix C

ISDA TERMS

47. The under-mentioned definitions are sample definitions that merely seek to illustrate possible definitions. These definitions may be different for different trades. The International Swaps and Derivatives Association, Inc. (ISDA) has provided definitions¹ of terms used in such agreements. Some of the important terms are:

- **Reference Entity** : Reference Entity means each entity specified as such in the related Confirmation and any Successor. A Reference Entity can be a single name or a basket of names. It can be a Corporate, Institution or a Sovereign Entity. A Reference Entity may be one as principal or as a guarantor.
- **Reference Obligation** : Reference Obligation means any obligation specified as such or of a type described in the related Confirmation (if any are so specified or described) and any Substitute Reference Obligation.

¹ For further details, refer “1999 ISDA – Credit Derivatives Definitions”

- **Credit Event** : Credit Event means with respect to a Credit Derivative Transaction, one or more of Bankruptcy, Failure to Pay, Obligation Acceleration, Obligation Default, Inconvertibility, Repudiation/ Moratorium or Restructuring, as specified in the related Confirmation. If an occurrence would otherwise constitute a Credit Event, such occurrence will constitute a Credit Event whether or not such occurrence arises directly or indirectly from: (a) any lack or alleged lack of authority or capacity of a Reference Entity to enter into any Obligation, (b) any actual or alleged unenforceability, illegality, impossibility or invalidity with respect to any Obligation, however described, (c) any applicable law, order, regulation, decree or notice, however described, or the promulgation of, any change in, the interpretation by any court, tribunal, regulatory authority or similar administrative or judicial body with competent or apparent jurisdiction of any applicable law, order, regulation, decree or notice, however described, or (d) the imposition of, or any change in, any exchange controls, capital restrictions or any other similar restrictions imposed by any monetary authority, however described.
- **Obligation:** Obligation means each obligation of each Reference Entity (whether as principal or surety or otherwise) described by the Obligation Category and the Obligation Characteristic specified in the related Confirmation.
- **Deliverable Obligation:** Deliverable Obligation means any Obligation of a Reference Entity determined pursuant to the method described in the related Confirmation that is payable in an amount equal to its outstanding principal balance or Due and Payable Amount, as applicable, and is not subject to any counterclaim, defense or right of setoff by a Reference Entity; each Reference Obligation unless specified in the related Confirmation as an Excluded Deliverable Obligation and any other obligation of a Reference Entity specified in the related Confirmation. A Deliverable Obligation may be wider in scope than the Reference Obligation. The Reference Obligation determines the rank of each Deliverable Obligation.

Credit Event Definitions

48. If an occurrence would otherwise constitute a Credit Event, such occurrence will constitute a Credit Event whether or not such occurrence arises directly or indirectly from:

- (a) any lack or alleged lack of authority or capacity of a Reference Entity to enter into any Obligation,
- (b) any actual or alleged unenforceability, illegality, inconvertibility, impossibility or invalidity with respect to any Obligation, however described,
- (c) any applicable law, order, regulation, decree or notice, however described, or the imposition of, or any change in, any exchange controls, capital restrictions or any other similar restrictions imposed by any monetary or other authority, however described.

49. **Bankruptcy** means a Reference Entity:

- (i) is dissolved (other than pursuant to a consolidation, amalgamation or merger),
- (ii) becomes insolvent or is unable to pay its debts or fails or admits in writing its inability generally to pay its debts as they become due,
- (iii) makes a general assignment, arrangement or composition with or for the benefit of its creditors,
- (iv) institutes or has instituted against it a proceeding seeking a judgement of insolvency or bankruptcy or any other relief under any bankruptcy or insolvency law or other similar

- law affecting creditors' rights, or a petition is presented for its winding-up or liquidation, and, in the case of any such proceeding or petition instituted or presented against it, such proceeding or petition
- (a) results in a judgement of insolvency or bankruptcy or the entry of an order for relief or the making of an order for its winding-up or liquidation or
 - (b) is not dismissed, discharged, stayed or restrained in each case within 30 days of the institution or presentation thereof,
- (v) has a resolution passed for its winding-up, official management or liquidation (other than pursuant to a consolidation, amalgamation or merger),
 - (vi) seeks or becomes subject to the appointment of an administrator, provisional liquidator, conservator, receiver, trustee, custodian or other similar official for it or for all or substantially all its assets,
 - (vii) has a secured party take possession of all or substantially all its assets or has a distress, execution, attachment, sequestration or other legal process levied, enforced or sued on or against all or substantially all its assets and such secured party maintains possession, or any such process is not dismissed, discharged, stayed or restrained, in each case within 30 days thereafter,
 - (viii) causes or is subject to any event with respect to it which, under the applicable laws of any jurisdiction, has an analogous effect to any of the events specified in clauses (i) to (vii) (inclusive), or
 - (ix) takes any action in furtherance of, or indicating its consent to, approval of, or acquiescence in, any of the foregoing acts.

50. **Obligation Acceleration.** "Obligation Acceleration" means one or more Obligations have become due and payable before they would otherwise have been due and payable as a result of, or on the basis of, the occurrence of a default, event of default or other similar condition or event (however described), other than a failure to make any required payment, in respect of a Reference Entity under one or more Obligations in an aggregate amount of not less than the Default Requirement.

51. **Obligation Default** means one or more Obligations have become capable of being declared due and payable before they would otherwise become due and payable as a result of, or on the basis of, the occurrence of a default, event of default, or other similar condition or event (however described), other than a failure to make any required payment, in respect of a Reference Entity under one or more Obligations in an aggregate amount of not less than the Default Requirement.

52. **Failure to Pay** means, after the expiration of any applicable (or deemed) Grace Period (after the satisfaction of any conditions precedent to the commencement of such Grace Period), the failure by a Reference Entity to make, when and due, any payments in an aggregate amount of not less than the Payment Requirement under one or more Obligations.

53. **Repudiation/Moratorium** means a Reference Entity or Governmental Authority (a) disaffirms, disclaims, repudiates or rejects, in whole or in part, or challenges the validity of, one or more Obligations in an aggregate amount not less than the Default Requirement, or (b) declares or imposes a moratorium, standstill or deferral, whether de facto or de jure, with respect to one or more Obligations in an aggregate amount of not less than the Default Requirement.

54. **Restructuring** means that, with respect to one or more Obligations, including as a result of an Obligation Exchange, and in relation to an aggregate amount of not less than the Default Requirement, any one or more of the following events occurs, is agreed between the Reference Entity or a Governmental Authority and the holder or holders of such Obligation, or is announced (or otherwise decreed) by the Reference Entity or any Governmental Authority in a form that is binding upon the Reference Entity, and such event is not provided for under the terms of such Obligation in effect as of the later of the Trade Date and the date as of which such Obligation is issued or incurred:

- (i) a reduction in the rate or amount of interest payable or the amount of scheduled interest accruals;
- (ii) a reduction in the amount of principal or premium payable at maturity or at scheduled redemption dates;
- (iii) a postponement or other deferral of a date or dates for either (A) the payment or accrual of interest or (B) the payment of principal or premium;
- (iv) a change in the ranking in priority of payment of any Obligation, causing the subordination of such Obligation; or
- (v) any change in the currency or composition of any payment of interest or principal.

55. Notwithstanding the above, none of the following shall constitute a Restructuring with respect to any Obligation:

- (a) the payment in Euros of interest or principal in relation to an Obligation denominated in a currency of a Member State of the European Union that adopts or has adopted the single currency in accordance with the Treaty establishing the European Community, as amended by the Treaty on European Union;
- (b) the occurrence of, agreement to or announcement of any of the events described in (i) to (v) above due to an administrative adjustment, accounting adjustment or tax adjustment or other technical adjustment occurring in the ordinary course of business, and
- (c) the occurrence of, agreement to or announcement of any of the events described in (i) to (v) above in circumstances where such event does not directly or indirectly result from a deterioration in the creditworthiness or financial condition of the Reference Entity.

56. If an Obligation Exchange has occurred, the determination as to whether one of the events described in (i) to (v) above has occurred will be based on a comparison of the terms of the Obligation immediately before such Obligation Exchange and the terms of the resulting Obligation immediately following such Obligation Exchange

Other Definitions relating to Credit Events:

58. **Governmental Authority** means any de facto or de jure government (or any agency, instrumentality, ministry or department thereof), court, tribunal, administrative or other governmental authority or any other entity (private or public) charged with the regulation of the financial markets (including the Central Bank) of a Reference Entity or the jurisdiction of organization of a Reference Entity

58. **Obligation Currency** means the currency or currencies in which the Obligation is denominated

59. **Obligation Exchange** means the mandatory transfer (other than in accordance with the terms in effect as of the later of the Trade Date or date of issuance of the relevant Obligation) of any securities, obligations or assets to holders of Obligations in exchange for such Obligations. When so transferred, such securities, obligations, or assets will be deemed to be Obligations.

60. **Payment Requirement** means USD 1 million or its equivalent in the currency in which an Obligation is denominated.

61. **Default Requirement** means USD 10 million or its equivalent in the currency in which an Obligation is denominated.