Need for Credit Derivatives in India

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ABSTRACT

The purpose of this paper is to look at how these contracts are structured, give risk management implications and discuss their relevance to the Indian financial market. To discuss the structuring of these instruments, we considered those areas that aid in making the whole contract attractive to the investor. Specifically, we looked at the following structuring variables, i.e. the type of risk transferred, the type of deal structured, the tranching of risk, the credit events and the settlement method. In order to discuss the risk management implications of credit derivatives, we looked at the utility of these instruments for the players such as Commercial Banks, Investment Banks, Investors & Corporate. Finally discussion is concluded by highlighting the explosive nature of these instruments and the need for stringent risk management practices to be in place before the introduction of these instruments and hail the initiative of the RBI to put on hold its plans to introduce these instruments into the Indian market.

Key words : Credit Derivatives, Credit Default Swap, Total Return Swap, Equity Default Swap, Credit Linked Note, Risk Tranching.

Credit Derivatives: An Introduction

Any business entity (primarily, a bank) that conducts its daily operations by giving out loans faces an uncertainty in the repayment of the loans. This uncertainty, which arises primarily out of the borrower's ability to meet its obligations, is termed as *credit risk*. Specifically, credit risk comprises of *default risk*, the risk that the loan is not repaid in full and *downgrade risk*, the risk that borrower's credit rating is reduced by a rating agency, which in turn would reduce the value of the debt.

Any business entity that has an exposure to credit risk frees itself by obtaining credit insurance. The concept is on the same lines as that of a home insurance policy covering the risk of fire the insurance company pays for the damages in case the house catches fire, in return for periodic insurance premium payments by the house owner. A *credit derivative*, put simply, is a modern form of credit insurance, adapted for trade in the financial markets.

A credit derivative is a bilateral financial contract that insures (protects) buyer of the contract against a credit suffering (defined as the *credit event*) on a reference entity (mostly a portfolio of loans or bonds) during a predetermined period. The credit risk assumed by the (protection) seller of the contract is compensated through a periodic fees payment made by the protection buyer. The figure below depicts the fundamental structure of a credit derivative:

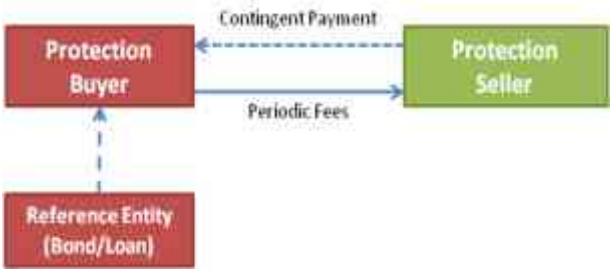

Figure 1: The Fundamental Structure

It must be noted that the protection buyer need not necessarily own the reference entity. A credit derivative views credit risk as an independent commodity by itself and creates an opportunity for trade in the commodity.

Structuring Credit Derivatives

Credit derivatives can be tailored to meet the needs of a wide base of Investors (protection sellers). The tailoring process is known as *structuring*. In a

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credit derivative transaction, the protection buyer can manipulate the following areas such as the Risk, Deal , Risk Tranching, Credit Events, Settlement Method.

The Risk

Based on the type of risk being transferred, credit derivatives can be broadly classified as Credit Default Swaps, Total Return Swaps, Equity Default Swaps. Credit default swaps is the arrangement in which the default coverage payments are swapped for a fixed fees payment. This (Figure 2) is the simplest extension to the structure depicted in Figure 1.

Figure 2: Credit Default Swap

Total return swaps (TRS) involve the parties exchanging the actual cash flows from the reference entity (usually a bond) with returns referenced to a certain reference rate (e.g. LIBOR). In TRS, the protection seller assumes the credit risk as well as the market risk inherent to the reference entity. The Total Return Payer often owns the underlying asset. They agree to pay any dividends and positive returns to the Total Return Receiver. In return the Total Return Receiver agrees to pay the Payer an interest rate (LIBOR + Spread). In addition, if the underlying asset earns negative returns, the Receiver will compensate the Payer.

Figure 3: Total Return Swap

Equity default swaps (EDS) are modeled based on the credit default swap, but not to transfer credit risk they transfer the risk of major diminution in the market value of shares. The credit event, in the case of EDS, is typically a decline (for e.g. 70% or more) in the market price of the reference entity. The protection seller covers the decline on an assumed recovery rate (for e.g. 50%) on the loss incurred.

Figure 4: Equity Default Swap

The Deal

A credit derivative may be either a transaction between two parties (a bilateral deal) or a capital market transaction. The bilateral deals are normally referred to as OTC (Over the Counter) deals. The other possible format is to embed the derivative into some capital market instrument (such as credit linked notes) and offer such instruments to investors in the capital market.

The OTC deals, are more liquid, easy to conclude and mostly single-*obligor* (the recipient of credit) derivatives. The pricing of the OTC derivatives is based on the credit rating of the specific obligor in the market. The OTC deals are off-balance sheet transactions.

The capital market transactions on the other hand, intend to transfer the credit risk from a portfolio of obligors to a Special Purpose Vehicle (SPV), which in turn transmits the risk to the capital market by issuing securities that carry the embedded derivative feature. The obligor's portfolio in a capital market is diversified and the price of the securities is assessed by the extent of diversity, apart from the credit rating of the obligors. The figure below depicts the structure of a credit-linked note (CLN), which is engineered to behave like a bond:

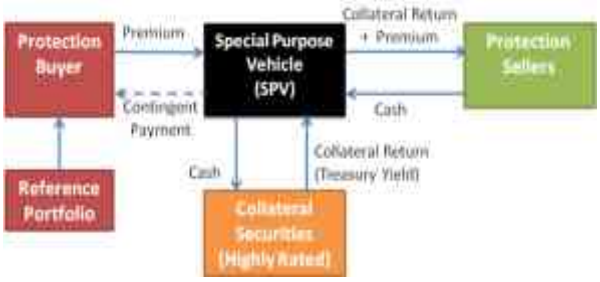

Figure 5: Credit Linked Note

Risk Tranching

Credit derivatives can be manipulated to suit the risk/return profile of the protection sellers. The credit risk of the loan portfolio can be split up into *loss-tranches* (for e.g. 0-5%, 5-15% and 15-30%) that have a differential fee structure. The 0-5% tranche (Junior), which bears the first loss, has the maximum credit risk and hence will have the highest premium. The 5-15% tranche (Mezzanine) will have less credit risk (and thus, less premium) than the junior tranche. Similarly, the 15-30% tranche (Senior) bears the lowest credit risk (and thus, the lowest premium). The figure below depicts the concept of risk tranching:

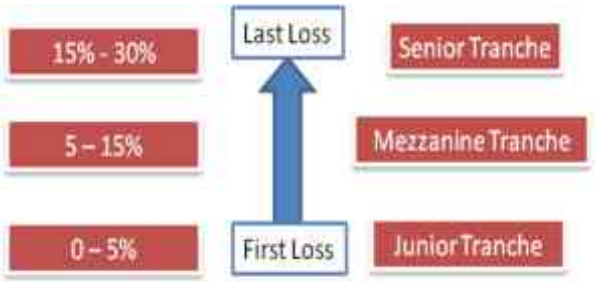

Figure 6: Risk Tranching

The Credit Events

There are six credit events, as documented by ISDA: bankruptcy, failure to pay, obligation default, obligation acceleration, repudiation or moratorium and restructuring. The parties are free to choose one or more events to structure the credit derivative. Parties using non-ISDA document can define their credit events.

A common credit derivative that illustrates the effective use of definition of credit events is the basket derivative, where the credit event is "n^{th} to default". For example, in a basket of ten assets, a "second to default" derivative is triggered after a default is incurred for the second time the first default remains uncovered. The concept is , the joint probability of more than one obligors defaulting is small, while the probability of any one of the ten defaulting is substantial. The result is low premium for getting a portfolio of assets insured.

The Settlement Method

Settlement arises when the credit events take place. There are two methods to settle a credit derivative transaction cash and physical settlement. In cash settlement, the reference asset continues to stay with the protection buyer and the losses incurred (principal + accrued interest) are settled in cash. In physical settlement, the reference entity is physically transferred to the protection seller in exchange for the par value of the entity.

Credit Derivatives: The Risk Management Perspective

Credit derivatives have been growing at an astonishing rate - Figure 7 provides a snapshot. This suggests that market participants find them useful for risk management. To dig deeper into the usefulness of credit derivatives for risk management, we discuss how they are used by four types of market participants Commercial banks, Investment banks, Investors, Corporate.

Commercial banks

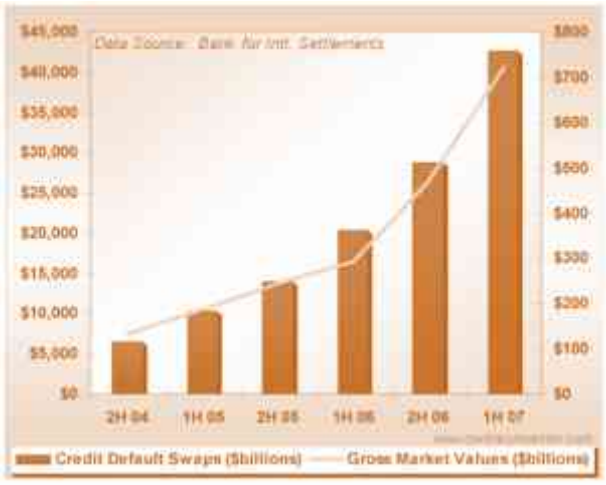

Figure 7: CDS Growth

Banks would stand to benefit from credit derivatives mainly due to two reasons efficient utilisation of capital, Flexibility in developing/ managing a target risk portfolio. Banks use single-obligor Credit Default Swaps to shed the credit risk of issuers to whom they have a large exposure. This helps them to free up the capital which can be used in productive opportunities.

A broader problem for banks than exposure to an individual client was exposure to a particular sector. If a bank felt that a customer's borrowings were increasing the likelihood of default, it could avoid lending more to that customer. But a bank would often have to turn down new business with, say, a strong publishing company that was a good risk, simply because of the bank's existing exposures to other publishing companies. But now a bank can separate the risk of an individual name from the risk of the sector. It can enter into a credit default swap on a portfolio of publishing companies that expressly excludes the strong one, thereby covering itself against the credit risk of every publisher except the customer with which it wants to do business.

Investment Banks

An investment bank can use credit derivatives to manage the risk it incurs when underwriting fixed-income securities (Asset backed securities and bonds). An underwriter assumes credit risk for the short time between when it takes the risk on its own books and when it sells the risk into the market. To minimize this exposure, the investment bank can enter into a short-term CDS on the underwritten securities.

Investors

An investor can use credit derivatives to align his credit risk exposure with his credit risk profile.

There are investors who follow the “buy and hold” policy who seeks to earn a return from a broad exposure to fixed income securities e.g. Insurance companies and Pension funds. Suppose such an investor develops a negative view on a particular sector, say telecom. Firstly, consider an investor who does not use credit derivatives. He can only rebalance his portfolio away from telecom issuers selling some of the telecom bonds he holds. Secondly , consider an investor who does use credit derivatives. He can shift his exposure away from telecom issuers by buying credit protection on telecom issuers using Credit Default Swaps (CDS).

Now consider an investor who follows an “active trader” policy who seeks to earn a return by predicting short term price movements better than other market participants (e.g. Hedge Funds). Suppose there is an investor who is an “active trader” with a view that over the next three months, Issuer XYZ's credit risk standing will improve and Issuer XYZ's credit spreads will tighten. One obvious trade based on such a view is to buy one of Issuer XYZ's bonds or sell credit protection on Issuer XYZ with a single-name credit default swap. However, buying a bond or selling credit protection exposes the investor to the risk that Issuer XYZ defaults, which may be a risk the investor does not want to take. A major benefit of credit derivatives is that the investor can customize his exposure to particular components of credit risk, such as spread risk, default risk, recovery risk, or correlation risk. In the given example, the investor wants to be exposed to the spread risk of Issuer XYZ but not default risk. To achieve this, suppose that the investor sells $10 million notional amount of credit protection on Issuer XYZ with a 10-year maturity and buys $10 million notional amount of credit protection on Issuer XYZ with a 5-year maturity. These two positions have the same $10 million exposure to default risk, but the longer maturity position has a greater sensitivity to credit spreads (higher credit duration).

Corporate

The value of almost any company that sells on credit can be enhanced through the use of credit derivatives. To take a simple case, consider an aircraft manufacturer 'ABC'. ABC's competitive advantage lies in its expertise in designing, manufacturing, and delivering superior aircraft. Unfortunately, its customers "Airlines" - are almost universally 'low-credit-rated', and they all operate in the same sector (highly concentrated exposure to air travel business). Managing the risks that ABC's customers will default, is outside its area of competitive advantage. From ABC's perspective, they are passive risks, and the only reason for bearing them is customer-insistence. Enter

the CDS, which gives ABC a non-invasive and reversible way to lay off the risks of customer default or to reduce sector credit exposure.

Conclusion:

The Reserve Bank of India (RBI) on 19th June 2008 put on hold its plan to allow commercial banks to sell credit derivatives in the country. The main reason given was the terrible experience of western banks offering similar products abroad. ICICI Bank Ltd, India's largest private sector bank, which recently announced a loss of $234 million primarily attributed to the deterioration in market value of their $2.2 billion CDS in international markets.

At a time when managing inflation and growth are top priorities, creating more complexities in the market by introduction of new instruments can make things difficult for the regulator. The bankers in India also need to be taught about these instruments thoroughly before they are introduced as the experience with the handling of forex derivatives has not been good.

The problem with credit derivatives is their high liquidity. In the US, these instruments changed hands to such an extent that most of the holders are not really sure of whether they possess the capability to cover for the credit losses in case of credit events. This phenomenon can be avoided only if there are strict risk-management checks whenever these instruments change hands. In India, the risk-management systems are not sophisticated enough to handle these checks. We are not ready for these instruments yet. The RBI is rational, in not introducing credit derivatives right now but, given their utility, the central bank should look at introducing credit derivatives in India in a year's time.

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