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Financial Instruments for Mitigating Credit Risk

Financial derivatives have greatly enhanced the range of tools available for managing financial risks. Currently, derivatives are widely used to mitigate and reallocate the financial risk related to changes in interest rates, exchange rates, stock prices, and commodity prices. A recent addition to the risk-management toolbox is the credit-related derivative and its variants. These financial instruments are used to manage a lender's credit risk, which is the risk that a borrower will default on a debt obligation. The emergence of these credit-mitigating financial instruments has been particularly useful to financial institutions, such as commercial banks, that extend credit as part of their main business operations.

This *Economic Letter* describes the main types of credit-mitigating financial instruments and the marketplace for them, as well as some issues that will affect this market's future development.

Types of credit-mitigating financial instruments

Credit risk is defined as the risk that the value of a loan (or more generally, a stream of debt payments) will decrease due to a change in the borrower's ability to make payments, whether that change is an actual default or a change in the borrower's probability of default. Credit-mitigating financial instruments permit the owners of these reference credits to transfer this risk to another party, typically known as a guarantor. The function of these instruments is different for the buyers and guarantors. For the buyers, the primary goal is to reduce their exposure and potential losses with respect to a specific borrower or class of borrowers. For the guarantors, the primary goal is to increase their exposure and collect the fees associated with doing so. In both cases, these instruments can help diversify a lending portfolio by reducing its credit risk concentrations.

Credit-mitigating financial instruments fall into two general categories—credit derivatives and collateralized debt obligations (CDOs). Credit derivatives permit lenders to insure against changes in a borrower's credit quality without removing the reference credit from their balance sheets. Recall that a derivative security is a financial instrument whose value is contingent on the performance of another security, in this case, the reference credit. The two main types of credit derivatives are total-rate-of-return (TROR) swaps and credit-default (CD) swaps. Although these instruments are typically discussed in terms of a single loan from a single borrower, they can be and often are applied to pools of loans from different borrowers.

For TROR swaps, the owner of the reference credit passes on the credit's total return (i.e., interest payments and asset appreciation) to the guarantor in exchange for a stream of floating-rate payments, typically the LIBOR interest rate plus some basis points, and a promise of reimbursement for any asset depreciation. The swap has a periodic mechanism for determining the changes in the credit's market value and for making the specified payments. In the case of default, the guarantor would compensate the lender for the almost complete loss of the credit's value.

CD swaps are more like standard insurance contracts. In a CD swap, the owner of the reference credit makes regular floating-rate payments in exchange for a contingent payment based on a defined credit event, such as bankruptcy or a credit-rating downgrade. The contingent payment could be tied explicitly to the value of the reference credit after the credit event, but it could also be determined independently.

In addition to bilateral CD swaps, an alternative structure, known as a credit-linked notes facility, permits credit risk to be spread across a larger number of guarantors. In this structure, a separate company, known as a special purpose financing vehicle (SPV), is established, often by the owner of the reference credit, and it issues debt securities whose payments are linked to the credit quality of a reference credit. Investors purchase these securities, and those funds are used by the SPV to purchase high-quality bonds. The SPV then enters into a CD swap with the owner of the reference credit. If a contingent payment is made to the owner due to a credit event, then the payments to the SPV's debt holders are reduced accordingly. If such a payment is not made, the debt holders receive both the payments from the SPV's purchased bonds and the owner's regular payments.

A CDO requires the owner of the reference credit to remove it from its balance sheet, as in the creation of mortgage-backed securities. CDOs are

based almost exclusively on pools of credits, and the types of credits used as reference assets have expanded beyond investment-grade corporate loans to include junk bonds and equipment leases. In a typical CDO transaction, the reference credits are sold to an SPV, which then issues a variety of securities with differing degrees of repayment risk. Typically, the SPV will issue three tiers of securities. The first tier consists of debt securities that are over-collateralized to achieve a high credit rating and minimize repayment risk. The second tier consists of debt securities that are typically unrated and whose payments are directly linked to the underlying reference credits. The third tier is the residual equity interest in the reference credits, which retains most of the credit risk. Investors in these securities are said to be in a "first-loss" position, since the securities will be the first to lose value in case of a credit event. The originator of the CDO typically retains some of these third tier securities as a sign of confidence in the transaction.

An interesting development in this market is the "synthetic" CDO. In these transactions, an SPV again issues a variety of securities whose payments are linked to the credit quality of reference assets. However, the reference assets are a collection of CD swaps that the SPV has entered into with one or more lenders, not a pool of credits. As with credit-linked notes, the proceeds from selling the synthetic CDO securities are invested in high-quality bonds, and the SPV stands ready to make payments to the owners of the reference credits as specified in the CD swap contracts.

The market for credit-mitigating financial instruments

Since credit-mitigating financial instruments are not traded on a securities exchange, the size of the market is difficult to measure accurately. The most reliable measures of market activity are from surveys, such as the 1999 British Bankers Association (BBA) survey (http://www.bba.org.uk/html/1601.html). It found the global size of the market to be about $600 billion in notional outstanding contracts, which is relatively small compared to the over-the-counter interest rate derivative market estimated at around $64 trillion in 1999. More recent surveys estimate the market for credit-mitigating financial instruments to have grown to over $800 billion in 2000.

The 1999 BBA survey found that about 40% of the transactions in this market were CD swaps on single credits, while about 20% were CDOs and other instruments tied to pools of credits. The CDO sector appears to be the fastest growing. Moody's Investors Services estimated new CDO issuance in 2000 to be more than $120 billion, as opposed to about $90 billion in 1999.

The BBA survey also found that the majority of market participants were commercial banks, making up about 65% of the buyers of these instruments and about 50% of the guarantors. An important reason for the significant role of commercial banks in this market is that originating loans is one of their key businesses. Thus, their need for credit protection would motivate their purchases, and since they have expertise in determining and monitoring the borrower's credit quality, they should also be able to sell credit protection and manage their exposures. The next largest class of market participants includes insurance companies and securities firms, with 10% and 20% share of the buyer market, and about 25% and 15% of the guarantor market, respectively.

Current problems

Like any developing financial market, the market for credit-mitigating financial instruments must address several important issues to ensure its smooth functioning and potential growth. Two key concerns are discussed below.

The first concern is the definitions of credit events used in the contract language of the instruments. This concern first arose in 1998 when Russia defaulted on its sovereign debt. Several lawsuits were initiated due to ambiguities in the instruments' legal language about whether and how the credit protection was to be provided. To reduce such uncertainties in the future, the International Swap Dealers Association (ISDA), a trade association representing participants in the over-the-counter derivatives industry, published a set of credit event definitions in 1999 that help provide a common language for documenting credit derivative transactions.

Still, several documentation issues remain. One is successor language, that is, handling credit protection when a reference credit's company splits into several companies. Given the generally idiosyncratic nature of such events, it is difficult to write general contract language that effectively keeps track of where the original firm's principal assets have gone. A potentially more significant issue arises with debt restructuring and whether it should constitute a credit event that triggers the credit protection. The 1999 ISDA definitions included debt restructuring as a trigger event, but subsequent restructurings showed that this choice entailed significant moral hazard. If a bank has purchased protection that would be provided in the case of debt restructuring, then the bank has an incentive to encourage such a restructuring in its dealings with the reference credit's company. In fact, several major market participants have begun quoting separate prices for CD swaps that do and do not include debt restructuring in the contract language. ISDA issued some supplemental guidelines in May of 2001 to begin addressing such concerns.

The second concern is that the market for these financial instruments has not yet been tested in a

recession, despite several individual credit events over the past few years. The dearth of data on the dynamics of credit ratings and defaults over the business cycle has limited historical studies of how the market might perform. It is not yet clear how the market will do in the current environment, with the weakening global economy and the increased corporate defaults and restructuring in the U.S. A particular concern is that even though these instruments can be used to reduce credit risk, they can also lead to risk concentrations. Recent losses by the American Express Corporation in the CDO market were limited to that firm, but similar losses could spread across financial firms and raise systemic concerns for financial regulators.

Conclusion

Credit risk is present in every financial transaction that includes credit extension, such as purchasing debt securities, making loans, or establishing trade financing. The development of financial instruments for mitigating and transferring credit risk has begun and has much promise. However, many challenges remain. Important concerns such as documentation and liquidity must be addressed in the near future. Furthermore, the issues of contract transparency and systemic risk must also be addressed to reduce regulators' concerns about the widespread use of credit-mitigating financial instruments.

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