

Present Status and Problems in the Credit Risk Transfer (CRT) Market

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1. European Insurers are Shaken by U.S. Bankruptcies

Last December, UAL Corp., parent company of the world's second largest airline, effectively went bankrupt after filing for bankruptcy under Chapter 11. The bankruptcy is noteworthy not only as the largest in U.S. aviation history (with liabilities listed at 22.8 billion dollars), but for having strong repercussions across the Atlantic among European insurance companies. In fact, financial markets have been deeply concerned that the UAL bankruptcy might trigger a chain of bankruptcies in Europe's insurance industry.

In the past, U.S. corporate debt was mostly held by U.S. banks. However, due to the recent growth of the credit derivatives market, much of this debt is believed to be held by European insurers, raising strong concerns about their financial soundness. The extent of this phenomenon is not known due to the scarcity of data. However, common wisdom holds that insurers are the largest risk takers in the credit derivatives market.¹

In countries with advanced financial engineering, the credit risk transfer (CRT) market continues to grow each year while leaving many problems unresolved. In this paper, we review the findings of a report on CRT released by the BIS (Bank for International Settlements) this January, and examine the current status and problems in the CRT market.²

2. CRT Instruments and Market Size

The major instruments comprising the CRT market are shown in Figure 1. The instruments are categorized by whether they involve an individual (single name) or multiple (portfolio) borrowers, and are funded or unfunded. Funding refers to whether assets are transferred along with the risk. See the footnote below for a further description.³

¹ According to a survey by *Risk Magazine*.

² BIS, Committee on the Global Financial System, *Credit Risk Transfer* (2003). This paper draws on but does not summarize the findings of the report.

³ In a credit default swap (CDS), a counterparty insures the lender against credit default in exchange for

Figure 1 CRT Instruments

	Funded	Unfunded
Single name	Loan trading	Credit guarantee, letter of credit Insurance policy (surety bond, credit insurance, etc.) Credit derivative (credit default swap, total return swap, etc.)
Portfolio	Credit-linked note ABS Cash CDO	Credit derivative (basket default swap, etc.) Synthetic CDO

Source: Bank for International Settlements, *Credit Risk Transfer*, January 2003.

As Figure 2 shows, the CRT market has experienced rapid growth.⁴ Growth has been particularly strong in credit derivatives and collateralized debt obligations (CDO), a security backed by a pool of bonds, loans and other assets. Compared to total bank credit, the value of credit risk being transacted in the CRT market is still relatively small. Still, the CRT market deserves attention since it is expected to keep growing strongly for several more years.

Figure 2 Size of the CRT Market

(U.S. \$ billion)

Year	Loan trading	Credit derivatives	ABS			CDO		Total bank credit
	U.S.		U.S.	Europe	Australia	U.S.	Europe	
1995	34		315		7	1		23,424
1996	40		403		10	1		23,576
1997	61	180	517		15	19		23,309
1998	78	350	684		19	48		26,018
1999	79	586	816	68	27	85	42	26,904
2000	102	893	947	80	33	125	71	27,221
2001	118	1,189	1,114	134	38	167	114	27,442
2002	117	1,952	1,258	50	54	232	70	29,435

Note: Values for 2002 are interim values.
Source: BIS, *Credit Risk Transfer*.

Below we examine the problems confronting the CRT market at both the contract level and financial system level. In particular, we discuss changes in the role of credit rating agencies.

regular periodic payments (premiums). This premium is based on the interest rate spread between corporate and government bonds. A CDS with multiple assets is called a basket default swap. In a total return swap, the cash flow generated from reference assets is paid out in exchange for premiums. Credit-linked notes (CLN), issued by a special purpose company, have an embedded credit default swap allowing the issuer to transfer a specific credit risk. If a credit event does not occur with the reference assets, the face amount is redeemed like an ordinary note; otherwise the reference assets are redeemed. Asset-backed securities (ABS) are securities backed by the cash flow generated from a pool of assets. Collateralized debt obligations (CDS) are backed by the cash flow generated from a pool of corporate bonds or other debt.

⁴ Since these figures are based on unreleased surveys, their reliability must be taken into account.

3. Problems at the Contract Level

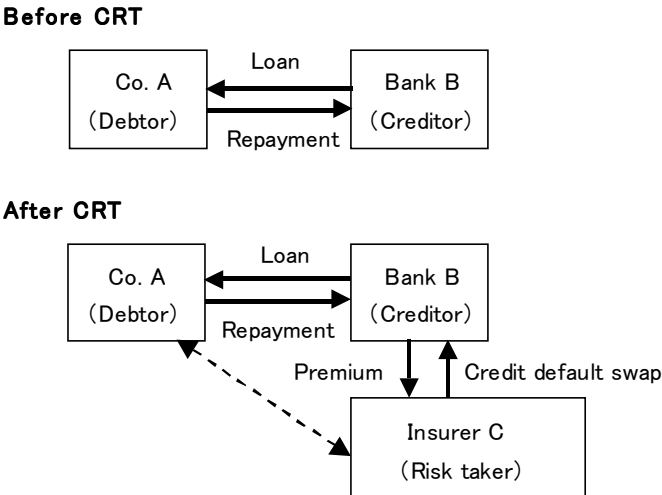
When credit risk transfers are performed with the instruments shown in Figure 1, the conventional contractual relationship of creditor and borrower is by a new third party risk taker. This alters the creditor's incentives and thus raises market failure issues.

Let us consider the case of company A, who receives a loan from bank B. Bank B uses a credit default swap (CDS) to transfer the credit risk of company A's loan to insurance company C (Figure 3).

Bank B has had a long relationship with company A, and thus is more familiar with its situation than insurer C. Thus bank B can negotiate a CDS with insurer C on advantageous terms by revealing biased information. This is the problem of asymmetrical information which exists between bank B and insurer C regarding company A.

Moreover, credit risk transfers using credit derivatives are usually arranged by bank B at its own discretion without informing company A. Thus while the relationship between A and B often appears unchanged following the CRT (in that B remains in the position of monitoring A's credit rating), B has in fact lost its incentive to monitor A and thus may neglect to actively do so. This problem is called the principal/agent problem between bank B (agent) and insurer C (principal).⁵

Figure 3 Example of Credit Risk Transfer



Another problem is that if the rights and obligations of bank B and insurer C are not clearly specified in the contract, one side may incur unfair losses. If bank B (or insurer C) can

⁵ With a stock company, which is owned by shareholders (principal) and managed by managers (agent), shareholders cannot fully know what managers are doing, and must control them with proper incentives.

influence the occurrence of a credit event stipulated in the contract, we have what is called incomplete contracting.

Of course, several measures already exist to deal with these problems. For information asymmetry, measures include: (1) single name CRT instruments are restricted to companies for which sufficient information is publicly available, (2) for asset-backed securities (ABS), mortgage loans or credit card loans in the portfolio are chosen randomly or by a third party, (3) if securities with different credit ratings are created from a CDO, part of the lowest-rated securities must be owned by the original creditor. While the third measure can be applied to the principal/agent problem, another problem arises in that the credit risk transfer function is partially lost.

Regarding the incomplete contracting problem, two measures are: (4) to work out problems between the original creditor (bank B) and new risk taker (insurer C), and (5) to use standardized contracts. While measure (4) has the advantage of being a case-by-case approach, it can impede market liquidity, making measure (5) the preferred choice. In actuality, the standard contract for credit derivatives developed by the ISDA (International Swaps and Derivatives Association) is gaining acceptance.⁶ However, unresolved issues still remain, as will be discussed later.

Furthermore, when credit risk is transferred using unfunded instruments, the original creditor must assume a counterparty risk—breach of contract by the new risk taker. While counterparty risk is usually dealt with by providing collateral, the type of collateral may be restricted.⁷ In addition, even if the appropriate collateral has been set, counter-party risk can still increase suddenly, causing a shortage of collateral. Also, the counter-party risk can also be correlated with the borrower's credit risk.⁸ For the creditor, counterparty risk management is critical but difficult to evaluate appropriately.

Disclosure of CRT usage by financial institutions is vital to shareholders of the financial institutions concerned. However, disclosure standards at present are very low among banks and insurance companies. According to one report, while banks had disclosed some information, almost none had engaged in comprehensive disclosure. The same was true of insurance companies; not one company had revealed the effect of CRT on overall credit risk.

⁶ Several revisions have been made following the release of the *1999 ISDA Credit Derivatives Definitions*, the latest one being in February 2003.

⁷ For example, in some countries, insurance companies and mutual companies are prohibited from providing collateral.

⁸ If a strong positive correlation exists between both parties, the CRT instrument will have a low value. This is because if the borrower defaults, the risk taker is also very likely to default as well.

4. Growing Role of Credit Rating Agencies

As credit risk transfer technology and markets develop further in the future, risk takers will increasingly come to rely on credit risk monitoring by rating agencies. While the primary reason is the voluminous data that rating agencies have regarding borrowers, another important reason is the increase in CRT instruments (such as CDO) to rearrange the credit risk of other companies. As such instruments increase, not only will risk takers will be less inclined to directly monitor the creditworthiness of individual borrowers, but monitoring itself will become more difficult.

Market participants inevitably must rely on credit rating agencies when making investment decisions. In the still new CRT market, credit ratings play the same role as in the bond market. For example, single-name CDS instruments are restricted to companies that have ratings. Moreover, the primary assets in CDOs are also rated.

Credit rating agencies also perform roles unique to the CRT market. For example, they provide ratings for portfolio CRT instruments. This requires that an assessment of default correlations, which they do quantitatively with proprietary models. Other unique roles include the legal evaluation of contracts, and evaluation of unique instruments.

But while rating agencies are playing an increasingly important role in the CRT market, many problems remain unresolved. For example, from a financial engineering perspective, the models they use to evaluate portfolio CRT instruments are arcane, and their ability to evaluate the effect of default correlation is questionable. From our own experience, default correlation has a strong effect, and results can vary widely depending on the model and parameters used. Moreover, it is extremely difficult to estimate parameters from observed data. In actuality, considering how the results obtained from their models greatly affect their rating decisions, and how announced ratings significantly impact the market, we can only say that the current models are unsatisfactory and need to be improved.

5. Problems at the Financial System Level

The development of credit risk transfer has important implications for financial system stability. However, it also raises strong concerns, prompting the BIS report to conclude that it is too early to determine whether CRT will stabilize the financial system. Below we examine the problems raised in the report.

First is the lack of transparency of information. As stated earlier, corporate disclosure regarding CRT is inadequate at present. There is insufficient information on how the use of

CRT instruments will redistribute credit risk, and where credit risk will concentrate as a result. This point is a major source of concern in promoting financial system stability.

Second, the diversification or concentration of credit risk cannot be controlled in the overall financial system. By reallocating credit risk, banks can diversify risk among themselves and thus create a stabilizing effect. This effect increases as risk is reallocated more widely among other financial institutions, non-financial companies, and abroad. However, CRT transactions tend to be concentrated among a small number of entities, and CDS intermediation in particular is dominated by a handful of large banks and securities firms. They confidently claim that risk management is not a problem since their books are either balanced or the positions taken are very small. However, risk management is actually a very thorny problem. For instance, holding equivalent long and short positions of CDSs for a particular company will not cancel out risks if the contract expiration dates do not match. Thus we are not reassured when intermediaries claim to have achieved risk diversification by holding large CRT positions with delicate risk characteristics.

Indeed, the fact that the intermediaries are concentrated among a handful of banks and securities firms is in itself a problem—operational failures could trigger market turmoil, and a loss of confidence could seriously damage the market’s liquidity because unsecured CRT instruments would no longer be traded.

Third is the contract-level problem mentioned earlier of incomplete contracts. For example, the CDS market arose from the concept that credit risk could be transferred by contracts without actually selling loans. Market growth will depend on whether a system is established that enables fair contracts that contracting parties can mutually agree to. However, since credit risk is much more diverse than market risk, the goal of achieving complete contracts is elusive. While some progress is being made amid the expanding market, this remains a critical problem.

An important point is whether contracts include restructuring as a credit event.⁹ Some risk takers think that including restructuring as a credit event makes the contract advantageous to the original creditor. On the other hand, creditors tend to think that credit risk transfers are incomplete without restructuring.¹⁰ Many bank supervisory authorities have stated that for CRT instruments to be effective in reducing credit risk, restructuring needs to be included

⁹ Restructuring refers to interest reduction, principal reduction, extension of payment date, and debt subordination. In Japan, standard credit events are bankruptcy, failure to pay, and restructuring. The first two generally coincide with the definition of default used by rating agencies. Usually, CDSs have a larger spread vis a vis government bonds than do corporate bonds. This is thought to be because CDSs include restructuring as a credit event.

¹⁰ According to some risk takers, including restructuring as a credit event increases the CDS spread, which is favorable for investment. On the other hand, there are creditors who want restructuring excluded so that the CDS spread approaches corporate bonds, making them favorable as a hedge for corporate bonds.

as a credit event. It remains to be seen whether the ISDA can present a proposal that is acceptable to all parties. However, failure to do so would hamper the speedy development of the CDS market, according to the BIS report.

Fourth is the problem of accounting. The fact that accounting rules vary by industry and product type hampers the development of the CRT market. Ideally, when creditors hedge against credit risk, the original asset and hedge asset should be evaluated in the same way (book value or market value). However, inconsistent accounting rules undoubtedly discourage at least some companies from participating in the CRT market. Market participants thus are keenly interested in the ongoing debate on how to implement market value accounting.

Finally, there is the problem of regulation. The well known BIS equity regulations concerning credit risk do not apply equally to the banking and insurance industries. Thus as the UAL case shows, CRT makes it possible to concentrate credit risk in the relatively less regulated insurance industry. To deal with this situation, we need to consider a more wide ranging and integrated regulatory approach that goes beyond the banking industry.