

THE ESSENTIALS OF RISK MANAGEMENT

Third Edition (EoRM3)

ONLINE CONTENT FOR CHAPTER 12

Box 12-1 [Updated], Box 12-6 [Updated], Chapter 12 Excerpt of EoRM2

From pp. 413–414 of *The Essentials of Risk Management, Second Edition* (EoRM2)

BOX 12-1 [UPDATED]

CREDIT MARKETS ARE DRIVING LONG-TERM CHANGES IN BANKS

New technologies aren't the only thing driving change in the banking industry. Over the last three decades, the portfolios of loans and other credit assets held by banks have become increasingly more concentrated in less creditworthy obligors. This situation has made some banks more vulnerable during economic downturns, such as when banks experienced huge credit-related losses in sectors such as telecommunications, cable, energy, and utilities (2001–2002); or real estate, financial institutions, and insurance and automobile (2008–2009); or airlines, cruise ships, and hotel chains (2020–2021).

Three forces have combined to lead to a concentration of low-quality credits in loan portfolios:

- First, there is the “disintermediation” of banks that started in the 1970s and continues today. This trend means that large investment-grade firms are more likely to borrow from investors by issuing bonds in the efficient capital markets, rather than borrowing from individual banks.
- Second, current regulatory capital rules make it more economical for banks on a risk-adjusted return basis to extend credit to lower-credit-quality obligors.
- Third, there is enhanced competition from new (mostly unregulated) fintech companies (see Chapter 5 of EoRM3).

Consequently and due to enhanced competition, banks have found it increasingly difficult to earn adequate economic returns on credit extensions, particularly those to investment-grade borrowers. Lending institutions, primarily commercial banks, have determined that it is no longer profitable to simply make loans and then hold them until they mature.

Banks are finding it more and more profitable to concentrate on the origination and servicing of loans, because they have natural advantages in these activities. Banks have built solid business relationships with clients over the years through lending and other banking services. Banks also have hugely complex back offices that facilitate the efficient servicing of loans. The major banks have a distribution network that allows them to dispose of financial assets to retail and

institutional investors, either directly or through structured products. Finally, some banks have developed a strong expertise in analyzing and structuring credits (see Chapter 10 of EoRM3).

Banks are better able to leverage these advantages as they move away from the traditional “buy and hold” business model toward an “originate-to-distribute” (OTD) business model. Under this model, banks service the loans, but the funding of the loans is outsourced to investors and the risk of default is shared with outside parties. Much of this chapter discusses the problems with the execution of the OTD model that helped provoke the 2007–2009 great financial crisis—a mode of execution that required reform. However, the OTD model itself has not gone away and is likely to continue to help shape the future of banking.

From pp. 432–433 of *The Essentials of Risk Management, Second Edition (EoRM2)*

BOX 12-6 [UPDATED]

THE SPECIAL CASE OF SOVEREIGN CDS (SCDS)

SCDS are still a small part of the CDS market with, year-end 2021, an amount outstanding of \$1.1 trillion versus \$8.8 trillion in CDSs as a whole. They also represent a small part of the sovereign debt market when compared to the total government debt outstanding.

However, the market for SCDSs has been growing since the early 2000s and has increased in size noticeably since 2008, while other CDS markets have declined. The post-2008 surge corresponded with a perceived increase in sovereign debt risk, culminating in the European sovereign debt crisis in 2010 and the restructuring of Greek sovereign debt in March 2012.

Although SCDSs can provide useful insurance against governments defaulting, their role has been controversial during the European debt crisis. After accusations that speculative trading was exacerbating the crisis, the European Union decided in November 2012 to ban buying naked sovereign credit default swap protection—that is, where the investor does not own the underlying government bond. The ban had already negatively affected the liquidity and trading volumes of SCDSs that referenced the debt of euro zone countries because of the fear of less efficient hedging.

The measure was criticized by the International Monetary Fund (IMF), which said that it found no evidence that SCDS spreads had been out of line with government bond spreads and that, for the most part, premiums reflected the underlying country’s fundamentals, even if they reflected them faster than the bond market.*

The measure was also criticized on the grounds that sovereign debtholders are not the only ones affected when a country defaults. Every sector is affected except possibly the domestic export sector and the tourism industry. Domestic importers and foreign exporters suffer when the default is followed by a devaluation; financial institutions and investors in domestic corporate debt suffer depreciation in the value of their assets; and domestic companies suffer as their credit risk increases.†

* *Global Financial Stability Report*, International Monetary Fund, April 2013.

† L. M. Wakeman and S. Turnbull, “Why Markets Need ‘Naked’ Credit Default Swaps,” *Wall Street Journal*, September 12, 2012.

According to the IMF report, between June 2005 and April 2013 there were 103 CDS credit events, but only two SCDS credit events with publicly documented settlements (Ecuador in 2008 and Greece in 2012). The most recent SCDS credit event was the March 2012 Greek debt exchange, which was the largest sovereign restructuring event in history. About €200 billion of Greek government bonds were exchanged for new bonds. Holders of the old bonds who had SCDS protection ultimately recovered roughly the par value of their holdings. However, there was uncertainty about the payout of the SCDS contracts in this situation, caused by the exchange of new bonds for old bonds.

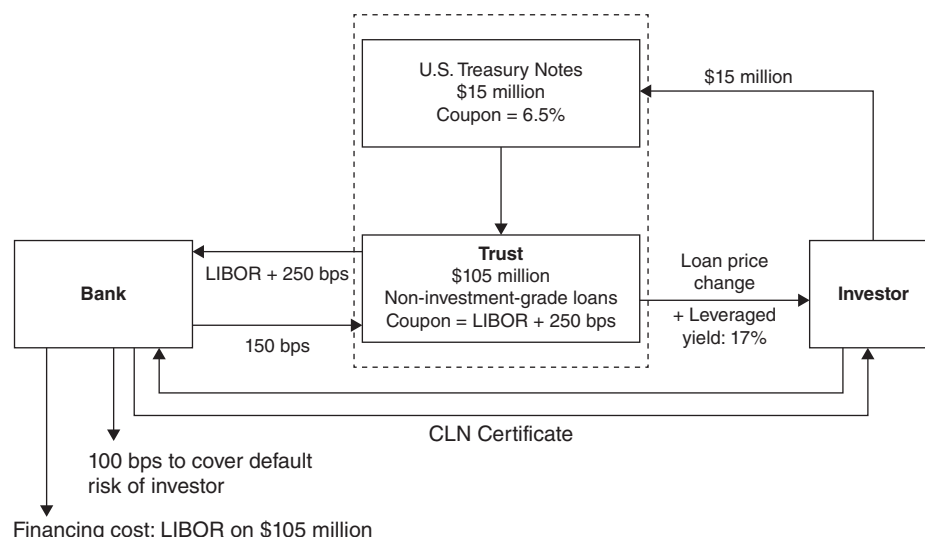
From pp. 445–447 of *The Essentials of Risk Management, Second Edition* (EoRM2)

Asset-Back Credit-Linked Notes

FIGURE 12-7 Asset-Back Credit-Linked Note (CLN)

Structure:

- Investor seeks \$105 million of exposure with a leverage ratio of 7, i.e., while investing only \$15 million in collateral.
- Investor purchases \$15 million of CLN issued by a trust.
- Trust receives \$105 million of non-investment-grade loans that are assumed to yield LIBOR + 250 bps on average.
- \$15 million CLN proceeds are invested in U.S. Treasury notes that yield 6.5%.
- Bank finances the \$105 million loans at LIBOR and receives from the trust LIBOR + 100 bps on \$105 million to cover default risk beyond \$15 million.



- Coupon spread on non-investment-grade loans: 250 bps
- Leveraged yield: 6.5% (U.S. T-notes) + 150 bps $\times$ 7 (leverage multiple) = 17%
- Option premium (default risk of investor) = 100 bps
- Leverage: 7

Figure 12-7 presents a typical CLN structure. The bank buys the assets and locks them into a trust. We assume that \$105 million of non-investment-grade loans with an average rating of B, yielding an aggregate LIBOR + 250 bps, are purchased at a cost of LIBOR, which is the funding rate for the bank. The trust issues an asset-backed note for \$15 million, which is bought by the investor. The proceeds are invested in U.S. government securities, which are assumed to yield 6.5 percent and are used to collateralize the basket of loans. The collateral in our example is $15/105 = 14.3$ percent of the initial value of the loan portfolio. This represents a leverage multiple of 7 ($105/15 = 7$).

The net cash flow for the bank is 100 bps—that is, LIBOR + 250 bps (produced by the assets in the trust), minus the LIBOR cost of funding the assets, minus the 150 bps paid out by the bank to the trust. This 100 bps applies to a notional amount of \$105 million and is the bank's compensation for retaining the risk of default of the issue above and beyond \$15 million.

The investor receives a yield of 17 percent (i.e., 6.5 percent yield from the collateral of \$15 million, plus 150 bps paid out by the bank on a notional amount of \$105 million) on a notional amount of \$15 million, in addition to any change in the value of the loan portfolio that is eventually passed through to the investor.

In this structure there are no margin calls, and the maximum downside for the investor is the initial investment of \$15 million. If the fall in the value of the loan portfolio is greater than \$15 million, then the investor defaults and the bank absorbs any additional loss beyond that limit. For the investor, this is the equivalent of being long a credit default swap written by the bank.

A CLN may constitute a natural hedge to a total return swap (TRS) in which the bank receives the total return on a loan portfolio. Different variations on the same theme can be proposed, such as compound credit-linked notes where the investor is exposed only to the first default in a loan portfolio.