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# Financial Innovations in Leveraged Commercial Loan Markets

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As the world's financial markets become increasingly integrated and globalized, the demand for new types of investments continues to grow. Especially with the liberalization of international equity and debt markets, institutional investors continue to find new ways to realize the benefits of asset class diversification. Interestingly, the globalization of *traditional* asset markets has also increased domestic attention to *asset classes* that are *altogether new.*

Banks loans are one such asset class that has generated much recent attention. In particular, non-investment grade, leveraged commercial and industrial ("C&I") bank loans have numerous attractions for investors.[1] Notable among them are low rates of loss in events of default, performance that is largely uncorrelated with that of other major asset classes, floating-rate repricing characteristics (which makes them largely immune to interest rate risk) and respectable "Sharpe" ratios (a widely accepted measure of risk relative to returns).[2]

Until 1988, participation in leveraged C&I lending markets *for investment purposes* was nearly impossible. The advent of loan syndication and securitization in the 1980s opened up access to the commercial loan market for non-banks, including insurance companies and institutional investors. Nevertheless, readily available financial products based on commercial loan performance remained absent from the financial landscape.

In the last five years, an explosion in loan-based financial innovations has created new opportunities for investment in C&I bank loans *as an asset class.* Participation by hedge funds in these new instruments is already significant, and mutual and pension funds are showing increased interest as well. Aside from the investment opportunities presented by these novel loan-based securities and derivatives, these recent financial innovations in loan markets also promise to reinforce the existing trend in banking away from *financial intermediation* and toward what has been called *information intermediation.* As we argue below, this trend is actually helping to ensure the long-run viability of commercial banks.[3]

This article surveys recent financial innovations in leveraged commercial lending markets and explores how these new financial products will broaden institutional investors' access to leveraged commercial loans as an asset class. We begin by summarizing the process of financial innovation. In the context of that innovation process, we then present an overview of the historical evolution in leveraged commercial lending. The remaining sections explore the mechanics of three recent loan-based financial innovations—collateralized loan obligations, loan-based total return swaps, and leveraged loan-based structured notes. The article closes by speculating on the likely impact of these innovations on commercial banks.

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1. A "leveraged" commercial loan is defined by convention as a loan whose spread over the London Interbank Offered Rate ("LIBOR") exceeds 150 basis points per annum.

2. *See* Elliot Asarnow, "Corporate Loans as an Asset Class," *Journal of Portfolio Management* (Summer 1996).

3. Recent trends in commercial banking are explored briefly in Edward E. Furash, "Managing the Seven Deadly Transitions," *ABA Banking Journal*, Vol. 89, No. 7 (July 1997).

## THE PROCESS OF FINANCIAL INNOVATION

The relations among financial innovations, markets, and institutions have been analyzed extensively, and the same pattern emerges time and again. New products are created, markets for trading those products arise, and financial institutions evolve to meet the changing needs of increasingly liquid asset markets. This process is known as the "commoditization" of an asset market. Before addressing loan-based innovations in particular, let's take a brief look at the process of innovation itself.

### Components of the Financial Innovation Process

Financial innovation involves essentially two components: asset *transformation* and asset market *liquification*. These two aspects of the financial product "cycle" are equally important in facilitating the migration of financial assets from purely bilateral (or "one-off"), non-fungible transactions into *securities* and *derivatives* that can be used for investment and risk management purposes.

**Asset Transformation.** The process of asset transformation occurs when a new financial product is developed whose cash flows are based on the cash flows of some underlying, original asset, such as a loan. The most common mechanism for asset transformation is *securitization*, the process by which non-traded financial assets are transformed into tradeable financial instruments. In a securitization, a financial intermediary acquires financial assets, repackages the cash flows on those assets, and issues securities representing claims on the repackaged cash flows, thus allowing the original asset owners to remove the original assets from their balance sheets.

Securitization is not the only type of asset transformation. Derivatives contracts also can be used to facilitate asset transformation. Derivatives are financial instruments whose cash flows are based on the cash flows of some underlying security or asset. As such, privately negotiated derivatives (swaps, for example) can be used to re-package the cash flows on an original asset and thus transform that asset into another cash flow stream.

**Asset Market Liquification.** Just because asset transformation creates a financial contract based on an underlying asset, or set of assets, does not mean that the new contract *will actually be traded*, or that any resulting "market" will be liquid. Securitized products that are privately placed, for example, may have virtually no secondary market at all. Similarly, swaps are derivatives contracts that can facilitate asset transformation but that are completely customized, bilateral, non-tradeable assets.

The process of asset market liquification, also known as "commoditization," is the process by which active secondary markets arise in securities or derivatives based on some underlying primary financial assets. In order for a market to liquify, securitization or some other form of asset transformation first must have occurred so as to create *fungible* assets. Fungibility is often imparted into a market by securitization, and active trading in the securitized products then liquifies the market. In other cases, asset transformation occurs through the exchange listing of a derivatives contract (such as futures) that then turns into a liquid market based on the original, transformed asset.

From the standpoint of those bearing the risk and return of an original asset such as a loan, asset transformation is the process by which risk and return are transferred from one party to another through bilateral contracting. Asset liquification is the process by which risk and return are transferred from one party to numerous parties—namely, to the capital market at large.

### Relations Between Financial Innovation and Institutional Change

The primary purpose of the financial system is to allocate economic resources to their most highly valued uses over time. To that end, the financial system provides several core functions. Robert Merton, recent winner of the Nobel Prize, has suggested that these functions include the provision of the following: (1) a secure payments mechanism; (2) a means by which capital may be pooled for more efficient allocation; (3) a vehicle by which risk can be reallocated from risk-averse investors to institutions and market participants more willing to bear that risk; and (4) informative price-based "signals" of relative scarcity to help guide the allocation of resources.[4]

4. Robert C. Merton, "The Financial System and Economic Performance," *Journal of Financial Services Research* (December 1990).

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Merton has developed a useful framework for analyzing the interactions between financial *products* and financial *institutions*.[5] This perspective begins with a simple assumption: the core functions provided by the financial system remain stable over time, but the institutions that interact to provide those functions change as new products emerge along with more efficient means of providing financial intermediation services.[6] Financial institutions thus evolve over time in response to financial innovation.

The "institutional structure" of the financial system can be viewed as a spectrum ranging from opaque institutions (such as commercial banks and insurance companies) to transparent institutions (for example, organized markets such as dealer-driven bond markets and exchange-based stock markets).[7] Opaque intermediaries engage primarily in bilateral, privately negotiated transactions (such as loans), whereas transparent institutions participate in public transactions in the global capital market. Mutual funds, investment banks, hedge funds, investment companies, and other enterprises lie somewhere in between.

Merton describes the dynamics between the evolution of the institutional structure of the financial system and financial product innovation as a financial innovation spiral. He characterizes the process as follows:

*[A]s products such as futures, options, swaps, and securitized loans become standardized and move from intermediaries to markets, the proliferation of new trading markets in those instruments makes feasible the creation of new custom-designed financial products that improve "market completeness;" to hedge their exposures on those products, the producers, financial intermediaries, trade in these new markets and volume expands; increased volume reduces marginal transaction costs and thereby makes possible further implementation of more new products and trading strategies by intermediaries, which, in turn leads to still more volume. Success of these trading markets and custom products encourages investment in creating additional markets and products, and on it goes, spiraling toward the theoretically limiting case of zero marginal transaction costs and dynamically-complete markets*.[8]

As one example, consider the liquification of the commercial paper market. As more and more opaque institutions supplied commercial paper, other opaque institutions began trading that paper among themselves in a highly decentralized and illiquid market. As information about such transactions became publicly available, trading and the degree of participation in the secondary commercial paper market increased and, as a consequence, the market became "liquid." This liquification of commercial paper in turn led to the development of money market mutual funds that repackaged commercial paper holdings into substitutes for demand deposits. In this fashion, the capital market function of providing demand deposits—which previously had been supplied only by banks and thrifts through opaque, depository transactions—began to shift to more transparent and publicly accessible mutual funds. And the liquification of the commercial paper secondary market thus precipitated a change in the *institutional structure* of the market. In turn, the evolution of specialized intermediaries in commercial paper encouraged further financial innovations, such as asset-backed securities.

At first glance, the evolution from opaque transactions in securitized products to intermediated markets for liquified assets appears to move in one direction—away from opaque financial institutions like commercial banks. This observation often leads mistakenly to the conclusion that opaque financial intermediaries, particularly banks, are declining in importance *vis-à-vis* transparent intermediaries. What is typically not recognized, however, is that the migration of activities and assets from opaque to transparent institutions merely prompts a change in the business focus of opaque institutions. As financial innovations liquify, opaque intermediaries just shift their attention to new services and new innovations, thereby renewing the cycle.

The financial innovation spiral, moreover, does not occur in a vacuum. The environment created by government regulation, taxation, technology, and the like strongly influences the institutional land-

5. *Id.*

6. This "functional perspective" is often mistakenly used as a justification for functional *regulation*. For a contrary view, *see* Christopher L. Culp, "Derivatives Regulation: Problems and Prospects," *Derivatives Law, Regulation, and Finance* (Spring 1998).

7. The first to do this was Stephen A. Ross in "Institutional Markets, Financial Marketing, and Financial Innovation," *Journal of Finance*, Vol. 44, No. 3 (July 1989).

8. Merton, cited previously.

scape and the process of financial innovation. Indeed, financial innovation often *begins* as a response to an unexpected change in taxes or regulations.[9]

## Lessons from Securitized Products

To illustrate the relations explored above between financial innovation and institutional change, two concrete examples are instructive. Because of their similarity to the loan-based securities we analyze later, these examples focus on the evolution of two particular types of securitized products and on the changes in the structure of financial intermediation engendered by the development of markets in those products.

**Mortgage-Backed Securities.** Perhaps the best-known class of asset-backed security is the mortgage-backed security (MBS). A MBS is created through the securitization of a pool of mortgage loans. The simplest example is a "mortgage pass-through security." Pass-throughs are created when holders of mortgages form a pool and sell shares of participation certificates in the pool. The cash flows earned by investors in pass-through securities are based on principal and interest payments on the underlying mortgages.

In the context of our earlier discussion, MBSs are examples of transformed assets—that is, mortgage loan assets are transformed into tradeable mortgage-backed securities through securitization. The main types of pass-through securities available in the United States are those guaranteed by government-sponsored enterprises (GSEs) such as the Federal National Mortgage Association. Besides providing guarantees that made the emergence of pass-throughs possible, GSEs also played a significant role in *liquifying* the pass-through market in the early 1980s. By *trading* these securities, the GSEs essentially *created* a secondary market. In the process, the role of GSEs as institutions shifted away from the provision of loan guarantees toward active participation in the capital market as financial intermediaries.

MBSs also can be transformed into new assets through additional securitizations or the use of mortgage derivatives. Collateralized mortgage obligations (CMOs), for example, are securitized products based on the transformation of *mortgage-backed securities*, as opposed to the underlying mortgage assets themselves.[10] CMOs first appeared in 1983 and gained widespread popularity by 1986.

CMOs are issued when a collateral manager acquires a portfolio of pass-through securities and repackages the cash flows from those securities into "tranches." Various types of tranches can be created in a CMO structure. As an example, consider a CMO structure in which cash flows on the pass-throughs are allocated into tranches based on the prepayment speeds of the underlying mortgages. Specifically, suppose the collateral manager acquires a $400 million pool of MBSs and allocates the cash flows from those securities into four tranches. The collateral manager then issues three classes of bonds with total face values of $100 million each and regular coupon payments. The residual $100 million defines the CMO's "equity" component. The first type of bond is a claim against the first $100 million principal repaid on the MBS portfolio and has an expected effective tenor of five to six years. The bonds issued against this "fast pay" tranche are called "A bonds." Next come the types of bonds issued against the second "medium pay" tranche, based on the *next* $100 million in mortgage payments. The effective tenor of medium pay bonds usually is about 12 to 15 years. The last tranche would be the "slow pay" bonds, whose term exceeds 15 years. The residual $100 million is then allocated to a specialized tranche known as the "Z tranche," which collateralizes the "equity" or Z bond issue. Z bonds combine features of zero-coupon bonds with mortgage pass-throughs, and holders of these bonds receive no payments until all earlier bond classes have been paid off.

**Asset-Backed Commercial Paper Programs.** Securities backed by assets other than mortgages also are actively issued and traded today. One such security is issued through what is called an "asset-backed commercial paper program" (ABCP program).[11] An ABCP program involves the transforma-

9. *See, for example,* Merton H. Miller, "Financial Innovation: The Last Twenty Years and the Next," *Journal of Financial and Quantitative Analysis* Vol. 21, No. 4 (December 1986), and Merton H. Miller, "Financial Innovation: Achievements and Prospects," *Journal of Applied Corporate Finance* Vol. 4, No. 4 (1992).

10. Some CMOs are based on securitized whole-loan mortgages directly.

11. Securities issued in ABCPs are fundamentally distinct from asset-backed securities. Asset-backed commercial paper programs virtually always are sponsored by banks, whereas asset-backed securities may be issued by any intermediary or firm. Non-mortgage asset-backed securities came onto the scene in 1985 when First Boston underwrote a security issue based on computer leases held as receivables by Sperry.

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tion of a pool of receivables into tradeable securities whose cash flows are based on the cash flows accruing to the receivables. The first asset-backed commercial paper program was sponsored by a commercial bank in 1983 and was backed by assets that included, among others, computer leases, credit card receivables, and auto loans.[12] Since then, these programs have experienced dramatic growth. At the end of 1987, less than $10 billion was outstanding in ABCP programs, whereas over $145 billion was outstanding in such programs at the end of 1996.[13]

ABCP programs evolved in the early 1980s as a response by commercial banks to the shift in corporate borrowing away from banks toward public commercial paper offerings, *especially* when the debt was used to finance asset purchases. Sensitive to ballooning credit risk exposures to their corporate customers, commercial banks were constrained in their ability to respond directly to this competitive threat. In addition, under the Basel Accord, banks were (and are) required to hold capital against credit-sensitive transactions such as loans. Consequently, banks were unable to stem the liquification of short-term project financing as it evolved away from direct bank loans to public debt markets.

ABCP programs provided banks with a means of arranging short-term financing for their customers *without directly extending them credit.* In so doing, asset-backed commercial paper programs created an innovative *conduit* for banks to participate in public securities issues without forcing them to relinquish their roles as opaque financial intermediaries. ABCP programs thus were an innovation that evolved in response to the liquification of short-term project financing markets.

In an ABCP program, a bank wishing to help its customers in financing asset purchases without extending them direct credit sets up a special purpose vehicle (SPV). The SPV is not owned by the bank and thus does not have assets and liabilities consolidated onto the bank's balance sheet—and thus sponsoring an ABCP program does not in and of itself raise the bank's capital requirements. The bank then supervises the conveyance of the receivables to be securitized to the SPV, and the SPV in turn securitizes (*i.e.,* transforms) the receivables and issues paper against the re-bundled cash flows. In addition to sponsoring ABCP programs, banks also participate in such programs by providing credit and liquidity support to the SPV for the new paper.[14,15]

Through ABCP structures, banks were able to meet the demands of their customers while avoiding the capital requirements associated with direct loan obligations and while generating fee income for related services (such as packaging and monitoring the receivables underlying the paper). So, the innovation of ABCP as a new financial product precipitated a shift in the institutional focus of banks away from short-term project financing toward other intermediation activities like receivables management and credit or liquidity support provisions.

## HISTORICAL DEVELOPMENTS IN LEVERAGED COMMERCIAL LENDING

A leveraged commercial loan is a C&I bank loan priced at the London Interbank offered Rate (LIBOR) plus 150 basis points or more.[16] These non-investment grade loans typically are senior in capital structure, collateralized, and have interest payments based on floating rates (such as LIBOR or prime). Leveraged bank loans may be used to finance relatively risky companies or to fund specific projects. Such loans gained popularity in the 1980s as a means of financing highly leveraged transactions (HLTs) such as leveraged buyouts (LBOs), leveraged recapitalizations, and acquisitions.

Leveraged bank loans play an important role in corporate finance for two reasons. First, leveraged commercial loans are a direct source of debt-based capital formation. Debt financing comes in many forms, of course, including public debt security issuances and non-bank private placements (such as venture capital and direct non-bank lending). Leveraged bank loans thus are just one possible avenue through which companies can fund their operations or finance specific projects through direct borrowings.

12. Barbara Kavanagh, Thomas R. Boemio, and Gerald A. Edwards, "Asset-Backed Commercial Paper Programs," *Federal Reserve Bulletin* Vol. 78 No. 2 (February 1992).

13. Charles A. Stone and Anne Zissu, "Asset Backed Commercial Paper: Get With the Program," *Journal of Applied Corporate Finance*, Vol. 10 No. 1 (Spring 1997).

14. *See* Kavanagh, Boemio, and Edwards, cited perviously, for a good description of the mechanics of ABCP programs.

15. Although sponsoring a SPV does not subject a bank to capital requirements, credit and liquidity support provisions *do.*

16. As of August 1997, *all* outstanding C&I loans made by U.S. commercial banks totaled $825 billion. *See* Federal Reserve Statistical Release H.8 (March 6, 1998). For a useful account of the market, *see* Keith Barnish, Steve Miller, and Michael Rushmore, "The New Leveraged Loan Syndication Market," *Journal of Applied Corporate Finance*, Vol. 10 No. 1 (Spring 1997).

The second means by which leveraged loans act as an important capital structure building block relates to the uniqueness of bank loans themselves. In general, all bank loans to corporations provide borrowers with one tangible benefit that other forms of debt financing do not. This benefit traces not so much to the unique attributes of *bank loans* but rather to the unique attributes of *banks*.

Specifically, in part because of their long-term relationships with borrowers, banks have relatively lower costs of acquiring, producing, analyzing, and transferring information about their customers' credit risk than other firms. In other words, banks have a comparative advantage in credit risk evaluation and in exploiting economies of scope in information acquisition. To that end, commercial bank loans are considered *unique* components of corporate capital structure because these loans "signal" to other creditors a borrower's ongoing creditworthiness.[17] The renewal of a bank loan, for example, means that other lenders to the firm need not undertake the same costly credit assessments of a corporation because the bank has already done so and signaled ongoing creditworthiness through a loan renewal. This function provided by banks and bank loans is called "delegated monitoring." Because companies essentially *need* such delegated monitoring to send signals of their creditworthiness to public security markets, the corporate demand for bank loans is *very* stable, at least relative to other forms of debt finance.

Most *leveraged* bank loans, however, are collateralized, making the signaling benefit of such loans less pronounced. In other words, because the loans are collateralized, they receive higher priority in the capital structure than other forms of fixed-payoff debt contracts. As such, leveraged commercial lenders concentrate their credit risk evaluations *on collateral* rather than on borrowers, resulting in less delegated monitoring than would occur on otherwise similar *un*collateralized loans. Nevertheless, the benefits of collateralized bank loans to corporations still are regarded as marginally higher than public debt issuance or private debt placement by institutional investors or venture capital firms.

## Leveraged Loan Syndication[18]

Although the demand for leveraged bank loans is stable relative to other forms of debt finance, the actual *volume* of such loans is highly dependent on the demand and supply of leveraged borrowing, which fluctuate with macroeconomic conditions and aggregate liquidity. Several factors have accounted for the historical reluctance of banks to extend huge amounts of leveraged credit to corporations, especially in the face of a business cycle downturn. Most obviously, a leveraged loan to a corporation exposes a bank to the credit risk of a default on the loan. As business conditions in the economy deteriorate, the corresponding increase in loan default risk can pose real problems for banks.[19] Second, the addition of a loan to the bank's balance sheet may increase the interest rate risk of the bank by altering the effective asset-liability mismatch on the bank's balance sheet and in the bank's net interest income. That net interest income sensitivity also is affected by business conditions, thus prompting banks to limit the amount of leveraged lending in which they are engaged during periods of macroeconomic weakness or declining liquidity growth.

In the early 1970s, banks began to contemplate ways of increasing their capacity to make loans in the face of uncertain economic conditions and liquidity considerations. Banks discovered that by "chopping up" their balance sheets into pieces and off-loading some of their loan exposures to other intermediaries, they could keep their credit and liquidity exposures manageable, their interest rate risk profiles within tolerable exposure limits, and their capital requirements down. At the same time, banks could exploit their comparative advantage in credit risk assessment and continue earning fees on loan servicing.

"Syndication" in the commercial bank loan market arose in the 1970s to accommodate banks' desires to spread the risk of their commercial loans to other financial institutions. In loan syndication, a bank arranges, underwrites, and effectively sells "chunks" of large bank loan assets to a group of other banks or investors, called a syndicate. Syndication is not really securitization, because no actual securities are created, but it is a type of asset transformation.

17. *See* Christopher James, "Some Evidence on the Uniqueness of Bank Loans," *Journal of Financial Economics* Vol. 19 (1987), and Eugene F. Fama, "Contract Costs and Financing Decisions," *Journal of Business* Vol. 63 No. 1 Pt. 2 (1990).

18. Portions of this section draw heavily from Barnish, Miller, and Rushmore, cited previously.

19. We noted that leveraged commercial loans are floating-rate instruments, which makes them largely acyclical. *Defaults*, however, may be correlated with the business cycle.

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Leveraged loan syndication greatly increased in popularity in the mid-1980s when LBOs became popular. Aggregate liquidity was high and macroeconomic conditions were favorable, contributing to a spurt of LBOs and other HLTs and increasing corporate demands for leveraged bank financing. Acknowledging their comparative advantage over public and non-bank private debt markets in leveraged financing but still wishing to protect their balance sheets from business cycle downturns, banks became *heavily* involved in diversifying their credit and interest rate risk through leveraged loan syndication. Banks even began to establish "loan distribution desks" to oversee the underwriting and placement of portions of large corporate loans whose purposes were financing HLTs.

At first, the primary participants in leveraged loan syndicates were foreign banks. Next came gradual participation by a few insurance companies, and by 1988 some institutional investors had joined the game. In the 1990s, however, syndication of leverage loans declined as the demand for leveraged loans waned. In particular, project-based HLTs dropped off significantly as declining economic conditions depressed the liquidity available to fund LBOs, acquisitions, and leveraged recapitalizations. Syndication, however, had already allowed many banks to diversify their exposures to *existing* HLT-related obligations.

As expected given the normal process of financial innovation, banks continued to search for new and more efficient ways to manage their existing HLT exposures—even after their actual extensions of leveraged credit had dropped off. As bank demands for risk diversification continued to grow, a *secondary market* for leveraged bank loans emerged around 1989, thus moving loans into the *asset liquification* stage of the financial innovation process. Secondary market loan trading began with a few loan trading desks at a small group of money center banks and investment banks that wanted to alter their exposures to a few specific HLTs, such as the RJR Nabisco buy-out. Since then, the market has continued to liquify. More than 30 loan trading desks specializing in leveraged loans now exist at various commercial and investment banks, all of which actively bid for chunks of loan exposures.[20]

So, leveraged commercial bank loans have in some ways already gone through the full financial product innovation cycle—a cycle in which widespread demand to diversify risk exposures led to asset transformation through syndication, and desires to make risk transfer more efficient led to secondary loan trading and loan market liquification. Nevertheless, this particular incarnation of the innovation process is unlikely to present any real long-term prospects for stimulating growth in liquid leveraged loan and loan-based securities markets. Participation by institutional investors in all of the above stages of the innovation process is still relatively meager. Pensions, in particular, cannot participate because the loans are non-investment grade assets. The income from these investments thus is currently treated as "unrelated taxable business income" rather than "investment income" under the Employee Retirement Income Security Act of 1974 (ERISA).

In addition, loan syndication and loan trading involve significant administrative costs that can make the process expensive. The restrictions on participants (no pensions, for example) in the loan resale market and in leveraged loan syndicates also increase the cost of that particular type of asset transformation, not to mention liquification. The attractive *investment* features of leveraged commercial loans also make banks very wary of selling loan participations to non-banks—mainly because the banks want to keep loan exposures to themselves and thus rarely allow non-banks to participate in "their" market.

## Loan Securitization

The next wave of innovation in leveraged loans traces to the advent of securitization as an asset transformation process. Securitization first began in the lending sector in 1970 with the issuance by the Government National Mortgage Association of MBSs. Securitization of *non-mortgage* assets followed 13 years later with the first ABCP program. Not until 1988, however, did securitization make its way to leveraged bank loan assets.

The first leveraged loan-based securitized products were called "collateralized loan obligations" (CLOs) and bear great resemblance to CMOs. In a typical CLO structure, a collateral manager acquires commercial loans from the originating bank(s),

20. Barnish, Miller, and Rushmore, cited previously.

unbundles the cash flows on those loans, allocates them into tranches based on loan credit risk, and issues securities against those tranches. We discuss CLOs in more detail later.

## RECENT LOAN MARKET INNOVATIONS

Until the advent of CLOs in 1988, non-banks found it difficult, if not impossible, to access the market for bank loans made to corporations on terms similar to those available to originating banks. As noted, the primary avenue by which non-banks could access commercial loan exposures was through syndicate participation. Non-bank participation in these activities was limited, however, by the traditional capital-related barriers to entry into banking, higher effective marginal costs of funds to non-banks, and by banks' reluctance to give up good investment opportunities to non-banks.[21]

Non-banks also had some access to loan markets through private placements. Pension plans, for example, could obtain the risk/return profile of a loan portfolio by directly placing loans with corporate borrowers. Private placements of this type have been unable to liquify the loan asset market, however, for two reasons. First, institutional investors often are not equipped to conduct the credit risk evaluation of commercial borrowers—or at least not as *efficiently* as commercial banks. Additionally, privately placed loans are very difficult to lever up, thus forcing institutional investors to lend at a higher marginal cost of funds—and hence earn a lower return—than commercial banks.

In the last decade, three financial innovations have emerged to create opportunities for non-banks to access commercial loan markets *on leveraged terms*.

### Collateralized Bond and Loan Obligations

*Leveraged* access to corporate loans for non-banks first became possible in 1988 with the beginning of "collateralized bond obligations" (CBOs), or bond structures based on tranches of securitized debt obligations. Not all CBOs are based on bank loans. Some have underlying assets that include high-yield debt, Brady Bonds, and other emerging market debt. CLOs are particular types of CBOs based on commercial loans, many of which are leveraged.

Since their first appearance in 1988, CBOs have become increasingly popular. In 1990, only seven CBO originations occurred, but by 1996 more than 25 structures had been established.[22] A total of $11.5 billion in debt was securitized in 1996 through CBOs or CLOs; and as of August 1997, over $11.25 billion in debt had been pledged as collateral in such programs. Fitch Investors Service projected the total 1997 loan securitization volume in CBO structures to exceed $35 billion.[23]

Securities issued by CLO managers typically are issued against three types of tranches—based on credit risks rather than prepayment speeds as in CMOs.[24] First, *senior debt* is issued against the highest-rated loans in the structure. Senior debt may be fixed- or floating-rate, and it typically has a lower expected return *and* volatility than the underlying loans. Credit enhancements such as third-party surety bonds and over-collateralization often are added to the CLO structure to make the senior debt investment grade. Second, *senior subordinated debt* is collateralized with the "medium" credit risk loans owned by the CLO manager. Finally, *junior subordinated debt* or *equity* is the security class issued against the riskiest tranche. Its expected returns and volatility often are *higher* than the aggregate return and risk of the underlying loans. Leverage, moreover, can be incorporated into the equity tranche fairly easily in a typical CLO, thus increasing both the expected return and risk of the equity tranche.

### Loan-Based Total Return Swaps

A security issued in a CLO structure represents a claim on bank loan assets. Through the creative use of a credit derivatives contract called a "total return swap," investors also can gain access to the risk and return features of a commercial loan or loan portfolio *synthetically*—that is, without the investor or a

21. *Unleveraged* bank loan-based investment vehicles, such as Prime rate trusts, developed in the 1980s but denied non-banks the benefits of obtaining loan exposures on the leveraged terms available to banks. *See* Asarnow, cited previously.

22. For these details and a useful summary generally, *see* Martin S. Fridson, *A Guide to Collateralized Bond Obligations*, Merrill Lynch (May 21, 1997).

23. Omri Ben-Amos, "Collateralized Issuance Zooming to New Heights," *American Banker* (August 18, 1997).

24. *See* Fridson, cited previously.

**In the last decade, three financial innovations have emerged to create opportunities for non-banks to access commercial loan markets *on leveraged terms*: collateralized loan obligations, loan-based total return swaps, and leveraged loan-based structured notes.**

security issuer acquiring ownership of the original loans.[25] All that is required to undertake a synthetic loan investment through a swap is a viable underlying bank loan and a willing swap counterparty.

Mechanically, a loan-based total return swap allows an investor to enter into an agreement with a loan originator and periodically *pay* LIBOR plus some spread in exchange for *receiving* an income stream based directly on the performance of the originator's loan portfolio. Total return swaps thus allow non-bank investors to get the risk and return on some or all of a loan portfolio's income stream without taking the loans off the balance sheet of the loan originators. Responsibility for originating and servicing the loans remains with banks, thus leaving banks to perform the services they already provide and in which they have significant cost and informational advantages. At the same time, total return swaps enable the banks to be loan originators and loan servicers *without retaining the credit risk of the loans*, which is borne by the counterparty of the swap.

To understand the mechanics of such swaps, we first review the simplest loan-based asset swap structure—a swap between one investor and one bank based on one whole loan made by the bank. We then generalize that example by considering a swap between one investor and one bank based on the performance of a loan *portfolio* and, after that, a swap between one investor and one *dealer* based on the performance of *multiple loan portfolios and multiple banks*.

**A Whole Loan-Based Total Return Swap.** To illustrate the concept, assume that a Bank has a $100 million loan portfolio (p = $100 mm) and, for simplicity, assume also that the Bank's loan portfolio consists of only one loan with a principal value of $100 mm. Now suppose the Bank enters into a swap agreement with an Investor in which the Investor semi-annually receives an income stream equal to the $100 million face value of the swap times LIBOR plus any interest earned on the loan (r) and plus any change in the price of the loan (Δp), where the loan price would be defined in the terms of the swap. Loan price changes can be negative if the credit quality of the borrower deteriorates or positive if credit quality improves. In exchange for receiving this income stream, the Investor pays LIBOR plus some financing spread (x).

From the perspective of the Investor, the per period net income on the swap can be expressed as follows:

$$\begin{aligned}\text{Net Income} &= \$100\,\text{mm.} \times [(\text{LIBOR} + r + \Delta p) - (\text{LIBOR} + x)] \\ &= \$100\ \text{mm.} \times [r + \Delta p - x]\end{aligned}$$

The Investor thus breaks even when the interest income plus the increase or decrease in the market value of the underlying loan is equal to the financing spread.

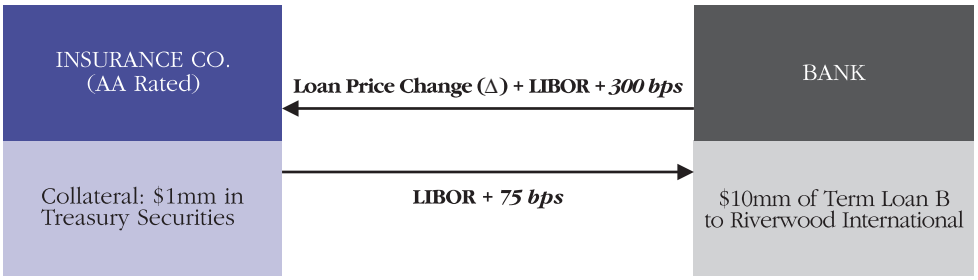
Perhaps a clearer way to view the income on this swap is to separate the cash flows of the swap into two components: a net interest income component and a principal component. Consider first the net interest income component of the swap. On the *pay* side, the Investor pays LIBOR + x. On the *receive* side (ignoring the default component Δp), the Investor receives LIBOR + r. So, the *net interest income* to the Investor is r–x. The easiest way to visualize this—as in any swap—is as a parallel loan. From the Investor's perspective the swap is equivalent to two loans: the Investor *borrows* $100 million from the Bank at LIBOR + x, and the Investor simultaneously *lends* $100 million to the Bank at LIBOR + r. In that manner, the Investor is making payments of x in exchange for receiving loan interest r.

Because the underlying bank loan is a leveraged commercial loan, the fixed spread over LIBOR on the bank loan r will be above the Investor's financing spread x. Consequently, r–x will be positive and the Investor will earn that net interest spread. Note that this is true *regardless of what interest rates do*. True, the $100 million Bank loan may be a floating-rate loan, but the floating LIBOR paid by the Investor to the Bank exactly offsets the floating LIBOR received by the Investor, leaving the Investor with the *fixed* difference between the spread over LIBOR charged by the Bank to its original borrower and the financing spread charged by the Bank to the Investor in the pay side of the asset swap.

The financing rate x is the rate at which the *Bank* is indifferent to the swap initially. Specifically, the

25. Total return swaps are not the only credit derivatives based on bank loans, but the other major types only transform part of the original loan asset. A loan-based default swap, for example, is a swap whose net cash flows are based on loan default losses. Such swaps are effective means by which investors can protect themselves against default risk, but they do *not* provide investors with access to *all* the risk and return features of the underlying loan(s). For a discussion of credit and default swaps, *see* Frank Iacono, "Credit Derivatives," in *Derivatives Handbook*, Robert J. Schwartz and Clifford W. Smith, Jr., eds. (New York: John Wiley & Sons, Inc., 1997).

**FIGURE 1**
RIVERSIDE LOAN SWAP




Bank will not offer to be counterparty to a swap on which it systematically expects to lose money, *regardless* of what its loan portfolio looks like and what risk reduction benefits the Bank gets from the swap. So, the financing rate x is set to *equate* the net interest income to the principal income on the swap *on a discounted net present value basis*.

In return for earning that positive expected net interest cash flow r–x, the Investor bears risk in the second component of the swap—the principal component, reflected by the term Δp. (The principal *in the swap* is notional and is never actually exchanged. The swap principal is thus totally irrelevant *except* for serving as the basis for calculating all payments.) The Δp term represents the *change in the price of the loan*, which may be negative in the event of unrecoverable defaults or may be positive in the event of credit quality improvements at the original loan borrower. *As long as the loan price does not change*, the Investor earns from the swap the positive spread of r–x. If the loan does default, however, Δp is negative and the Investor only earns r+x+Δp, which is *less than* r–x because Δp is negative. In this case, the Investor may actually *lose money* on the swap and be forced to make a payment to the Bank.

From the Bank's perspective, the credit risk of principal and interest defaults are completely transferred to the Investor, but the Bank retains servicing rights on the loan. From the Investor's perspective, the spread of the Bank's loan in excess of the swap financing rate is income. In return for that net interest income stream, however, the Investor bears the principal risk of declines in the value of the loan (*and* reaps the gains associated with increases in the end borrower's credit quality). Thus, the Investor has *synthetically acquired* the bank loan without *actually* owning it.

Figure 1 should provide some clarity to this discussion by illustrating a single bank-single loan total return swap using a *real* example.[26] In this example, a AA-rated insurance company entered into a swap with a bank to acquire a portion of a "Term Loan B" made to a firm called Riverwood International. Riverwood's Term Loan B had a principal amount larger than $10 million, but the insurance company only wanted to acquire a $10 million participation in the loan. The insurance company thus entered into an asset swap with notional principal of $10 million whose total return was driven by the performance of the Riverwood loan.

The coupon paid by Riverwood on the original loan was LIBOR+300 bps. Accordingly, the insurance company agreed with its swap counterparty to *receive* that Riverwood coupon payment of LIBOR+300 bps *plus or minus* the change in the market price of the Riverwood loan, in exchange for which the insurance company periodically *paid* the Bank LIBOR+75 bps. The 75 bps paid by the insurance company to the Bank was its financing spread x, and the 300 bps received by the insurance company—equal to the spread over LIBOR on the Bank's loan to Riverwood—was the gross loan interest income r. The *net interest income* portion of the swap's cash flow thus was 225 bps per period, and the remaining *principal* component of the swap's total return was based solely on the price change of the Riverwood loan.

Viewed another way, the insurance company engaged in two parallel loans with the Bank, both with a principal value of $10 million. On one loan, the insurance company *borrowed* $10 million from the Bank at LIBOR+75 bps. On the other side, the insurance company *loaned* $10 million to the Bank at LIBOR+300. The Bank thus paid to the insurance

26. This example is borrowed from Barnish, Miller, and Rushmore, cited previously.

**In return for the net interest income stream, the Investor bears the principal risk of declines in the value of the loan. Thus, the Investor has *synthetically acquired* the bank loan without *actually* owning it.**

company exactly what it received from Riverwood in interest payments, getting 75 bps from the insurance company in return *plus* the knowledge that any decline in the market value of the Riverwood loan reduced the Bank's interest payment to the insurance company. From the insurance company's perspective, it received a stable 225 bps each period in the swap, representing the spread of the Riverwood coupon over its own financing rate from the Bank. In exchange for receiving 225 bps each period, the insurance company bore the risk of any principal default or price decline on the Riverwood loan.

To see the risk and return features of this swap, suppose first that the Riverwood loan price did not change. Suppose further (as was actually the case in this swap) that the Bank demanded 10% of the $10 million notional amount of the swap as collateral on the swap. The insurance company thus committed capital of $1 million in the form of Treasuries to the Bank to collateralize any potential losses on the swap. (The insurance company continued to earn interest on those Treasuries.) *With no change in the price of the Riverwood loan*, the insurance company thus would have earned a return of 22.5% per period in excess of the Treasury rate on its invested capital. To arrive at that number, recognize that in the absence of a loan price change, the *net* interest income on the swap to the insurance company was $225,000, or $10,000,000 × 225bps. Relative to the $1 million in collateral posted by the insurance company, the return *in excess of the Treasury rate on the collateral* was 22.5%. Because the insurance company posted only $1 million in collateral for a cash flow stream based on a $10 million principal amount, the *leverage factor* embedded in this swap was 10:1, explaining the high return on capital.

Now, suppose the Riverwood loan declined in market value because of missed interest payments or the prospect of an unrecoverable principal default. If the Riverwood loan depreciated by 10%, for example, the income to the insurance company would have been *reduced by the entire amount of the capital pledged as collateral.* That is, a 10% market value decline on a $10 million loan would have resulted in a $1 million reduction in swap income for the insurance company.

**A Loan Porfolio-Based Total Return Swap.** Now suppose that the Investor wishes to acquire a loan exposure that is diversified across various bank loans made by a single bank. Suppose the Bank still has a $100 million loan portfolio, this time composed of various different types of loans to multiple industry sectors and of various credit risks (say, B, BB, and BBB). So, p = $100 mm. now represents the total principal amount of *all* these loans.

The Bank's $100 million loan portfolio can be visualized as comprised of "classes" based on the credit risk of the loans in each class. *Within* each credit class of loans, in turn, there are many individual loans, all of which share a common credit rating. Because they have the same credit rating, the probabilities of default for each of the loans within a single credit class are roughly the same. The individual loans, however, may have different terms and may involve varying principal amounts.

In principle, the Investor can engage in a swap that defines its income stream in terms of the various *loan classes* and *individual loans* in just about any way that it wants. To make things simple, suppose the swap has a total notional value of $100 million, equal to the size of the Bank's entire B, BB, and BBB commercial loan portfolio. Suppose further that the Investor wants to get an *equal weighting* of exposures to each credit class. The swap then might have periodic cash flows as follows:

$$\text{Net Income} = \$100{,}000{,}000 \times [1/3(r_B - x + \Delta p_B) + 1/3(r_{BB} - x + \Delta p_{BB}) + 1/3(r_{BBB} - x + \Delta p_{BBB})],$$

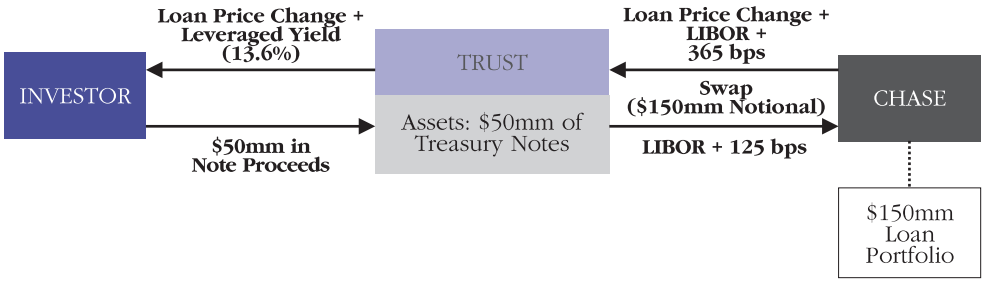
where $r_B$ now represents the total interest income on *all* B-rated loans and $\Delta p_B$ represents the total change in market value of *all* B rated loans, and similarly for BB and BBB loans. The variable x denotes the Investor's financing spread as before, although the actual value of that financing spread is likely to be different given the different composition of the expected discounted net present value of cash flows that guides the determination of x.

For concreteness, suppose the loans in the B, BB, and BBB classes all have coupons, respectively, of LIBOR+a, LIBOR+b, and LIBOR+c. If the Investor's financing rate is now d—assumed to be less than before because the credit risk of a principal default is more diversified—the Investor's net income on the swap will be as follows:

$$\text{Net Income} = \$100{,}000{,}000 \times [1/3(a - d + \Delta p_B) + 1/3(b - d + \Delta p_{BB}) + 1/3(c - d + \Delta p_{BBB})]$$

In order for the swap to be profitable for the Investor, the net interest on the swap must exceed the changes in the prices of the loans.

**FIGURE 2**
CHASE SECURED LOAN NOTE TRUST




The example above assumes that the Investor negotiates a swap giving it equally-weighted exposure by credit risk to *all* loans in the Bank's $100 million loan portfolio. Instead, the Investor may wish to enter into swaps based on only *part* of the Bank's loan portfolio—in particular, based on *small participations* in each whole loan rather than on the *total performance of all loans*. By defining a swap in terms of small chunks of numerous loans, the principal default risk *on any individual loan* becomes a very, very small fraction of the swap's total cash flows. The loans used to define the swap cash flows, moreover, can be selected deliberately to choose loans whose default risks are negatively correlated. A swap based on loans to petroleum refineries and to airlines, for example, would have *negatively correlated default risk*. When oil prices go up, the refineries do well but the airlines suffer, and conversely. Consequently, both the airlines and the refineries are *highly unlikely* to default at the same time.

## Leveraged Loan-Based Structured Notes

A third loan market innovation is a security *based on* a total return asset swap. Any security that combines features of a straight debt instrument with a derivatives contract is called a "structured note,"[27] and this third loan market innovation thus can be called a leveraged loan-based structured note (LLSN).[28]

The two key participants in the creation of this structure are a bank (or other sponsoring investment manager) and the issuer of the notes. The issuer may be an institution itself or a trust set up by the bank or investment advisor that is not consolidated onto the bank or advisor's balance sheet, like an SPV.

Mechanically, the issuance of the structured notes can be viewed in several distinct steps. First, the issuer must decide on the leverage factor to be reflected in the note. A leverage factor of 2:1, for example, implies that the loan portfolio underlying the LLSN is twice as large in face value as the total subscriptions to the note. Based on that leverage factor, the issuer then collects initial subscriptions of some amount from investors and invests those proceeds in Treasury securities. These Treasuries serve effectively to collateralize the face value of the notes and, hence, to guarantee principal repayment.

Given the subscription amount and leverage ratio, the sponsoring bank or investment manager then engages in a total return swap with the bank that originated the desired loan portfolio. As in any total return swap, the note issuer pays LIBOR plus some financing spread in exchange for receiving payments equal to the price change in the loan portfolio plus LIBOR plus the spread of the loan portfolio's yield over LIBOR. Payments to note holders are based on the income from the swap. Note that the leverage factor comes into play because the interest payments between the trust and the bank/sponsor are based on the full value of the loan portfolio, whereas the subscriptions collected by the LLSN issuer are less than that amount. A leverage factor of 2:1, for example, implies a loan portfolio and swap with a principal amount twice as large as the face value of the LLSNs issued. Coupon payments are based on the LLSN face value, but the *actual coupon yield* is twice as high.

A concrete example will help illustrate the mechanics of LLSNs. As shown in Figure 2, the "Chase Secured Loan Trust Note[sm]" was a LLSN sponsored by Chase Securities. The underlying loan

27. Structured notes are discussed more generally in Christopher L. Culp and Robert J. Mackay, "An Introduction to Structured Notes," *Derivatives* Vol. 2 No. 4 (March/April 1997).

28. These instruments have also been called "Bank Loan Asset-backed Secured Trust Notes," or "BLAST Notes"[sm]. *See* Iacono, cited previously.

**By transforming loan assets in the ways described in this article, banks can generate fee income *and* exploit their unique comparative advantage in information acquisition and analysis via delegated monitoring.**

portfolio on which the coupon payments of the LLSNs were based had a $150 million face value. The Trust that issued the LLSNs engaged in a total return swap with Chase that had payments based on the $150 million loan portfolio and that had a notional principal of $150 million. Specifically, the Trust periodically paid Chase LIBOR plus a financing spread of 125 bps, in return for which the Trust received periodic payments equal to LIBOR plus the coupon rate on the loan portfolio of 365 bps plus the change in the price of the loans. Chase thus paid the Trust a (possibly negative) *net* spread of 240 bps plus the loan price change.

The Trust collected $50 million from investors as an initial subscription for the LLSNs. The ratio of this subscription amount to the notional principal of the swap (*i.e.,* face value of the loan portfolio) was thus 3:1. After collecting its initial subscription to the LLSNs, the trust invested the $50 million in Treasuries earning 6.4% per annum.

In return for their initial investment of $50 million, the investors in the Chase LLSNs received a *leveraged* coupon payment of 13.6% plus the loan price change, computed relative to the $50 million face value of the notes. The coupon yield of 13.6% was based on the 6.4% Treasury yield *plus* the *leveraged* net spread of 7.20% on the loan portfolio embedded in the swap—that is, the 240 bps net spread times the leverage factor of 3:1.

## THE IMPACT OF LOAN MARKET LIQUIFICATION ON BANKING

Perhaps the most significant impact of the recent innovations in loan-based financial contracts is the emergence of bank loans *as an asset class* for non-banks such as institutional investors. In order for these innovations to have a lasting impact, however, they must also hold out major benefits for the banks themselves.

For the last several decades, commercial banking as a business has undergone significant and dramatic changes. The evolution of loan-based financial products will reinforce the existing trend, thus likely making such products quite appealing to commercial banks. Although many factors have contributed to the major structural change in banking as a business, they can be summed up in essentially two statements. First, competition and the disintermediation of funds from banking has forced banks to look for new service lines, new sources of income, and new sources of funds. Second, various institutional, economic, and technological influences are driving banks away from risk-based sources of income toward fee-based sources of income.

### Competition and Disintermediation

Banks once enjoyed a very special position in the economy. They were unique providers of financial intermediation (taking deposits and reinvesting them), monetary transaction intermediation, payments system transactions, information collection and analysis, and loan-based capital formation services. Competition from non-banks, however, has made it increasingly difficult for banks to preserve their market shares, both on the asset *and* the liability sides of their balance sheets. About the only comparative advantages now enjoyed by banks are unique access to the payments system and a capacity to engage efficiently in delegated monitoring and information intermediation.

Loan-based securities and swaps will help banks focus on these things in which they still *do* have comparative advantage by removing the need for them to pay attention to areas in which they no longer have much comparative advantage. This is evident on both the asset and liability sides of the balance sheet.

The liability side of a bank's balance sheet is important for several reasons. First, liabilities provide banks with the sources of funds they require to make loans. Retail-funded banks rely principally on retail sources of funds, such as demand deposit accounts (DDAs) and small-dollar certificates of deposit (CDs). Wholesale-funded banks, by contrast, rely more heavily on capital markets, such as interbank funding markets. In either case, however, banks *must* obtain sufficient funds to generate a loan portfolio. Further, the liability side of a bank's balance sheet matters because it is a source of fee income for the bank. By providing transaction intermediation services like DDAs, banks can earn appreciable amounts of revenue.

Competition on the liability side of the balance sheet has come principally from the much less-regulated investment banking industry. Money market mutual funds now provide deposits through cash management accounts that are virtually indistinguishable from DDAs—with the exception of the federal insurance of the latter. When deposits flow out of the banking system altogether, as they have

from the retail DDA market, the process is called "disintermediation," which occurred with a vengeance in the 1980s.

Disintermediation, however, does not necessarily imply a decline in banks, but rather just a decline in the traditional role of banks. To combat their rapidly ensuing obsolescence in traditional intermediation, banks have been forced both to cut their fees and to provide customers with new types of retail transaction services, in turn leading to a shift in the business of banking. Equity-linked certificates of deposit, for example, are retail-sized CDs that offer depositors an equity market alternative to earning money interest. The Citibank "Stock Index Insured Account," to take a specific example, does not pay a fixed interest rate at maturity. Instead, at maturity, the CD pays the depositor the greater of two amounts: the principal invested, or twice the average return on the S&P 500 over the life of the CD. In other words, if the S&P 500 declines over the life of the deposit, depositors merely get their principal back; but if the stock market increases, depositors receive twice the average rate of increase as a return on the CD.[29] Such products have helped stem disinter-mediation somewhat, but not to the degree banks need to preserve their retail funding and fee income sources.

Attention to the *asset side* of a bank's balance sheet is even more important. By transforming loan assets in the ways described in this article, banks can generate fee income *and* exploit their unique comparative advantage in information acquisition and analysis via delegated monitoring. Yet, competition on the asset side of a bank's balance sheet has been about as serious as on the liability side. Substitutes for bank loans include public securities markets, private placements from non-banks (such as pensions and venture capital firms), and trade credit. Banks have had an easier time keeping most of their market share here, however, because of their delegated monitoring role—a role that is not shared by non-banks and public security markets. Nevertheless, reductions in particular types of bank loan volume have occurred in periods over the last two decades. As already noted, for example, asset-backed commercial paper programs arose in response to the liquification of short-term project finance from direct bank loans to public commercial paper issues.

Competitive factors are important influences on the development of loan-based security markets for several reasons. First, as discussed earlier, the issuance of products like LLSNs and CLOs benefit banks by keeping them integrally involved in the process. Like ABCP programs, bank-centered innovations like total return swaps will provide banks with a conduit to direct capital market participation without forcing banks to become securities firms or relinquish their delegated monitoring expertise.

Second, the development of new financial products based on loans will increase banks' access to funding sources on the liability side of their balance sheets. As loan-based securities markets and total return swaps become increasingly active, the loan-based asset market will liquify, giving new institutions like pensions access for the first time to bank loan markets, thereby adding new participants to the bank funding market. This broadening and diversification of banks' funding sources should lower their marginal costs of funds.

Third, loan-based *securities* could eventually be sold back to banks by the issuers of the securities for the eventual re-sale to bank *depositors* as substitutes for DDAs. Banks, after all, have superior marketing and distribution networks, and allowing them to market and distribute leveraged, securitized products based on their own assets will give banks an enormous opportunity for fee income and greatly enhance their competitiveness on the liability side of their balance sheet at the retail level.

## The Shift Away from Risk-Based Income

Banks have been increasingly looking toward activities that enable them to generate fee-based income, rather than relying on more traditional sources of risk-based banking income. Historically, commercial banks have been viewed principally as firms that were willing to bear interest rate risk by borrowing short and lending long. Indeed, banks have long been viewed as having a *comparative advantage* in interest rate risk management, across maturities as well as credit risks. While perhaps true, banks for various reasons have become more reluc-

29. For a discussion of this and other equity-linked CDs, *see* Charles Baubonis, Gary Gastineau, and David Purcell, "The Banker's Guide to Equity-Linked Certificates of Deposit," *Journal of Derivatives* Vol. 1 No. 2 (Winter 1993).

**Loan-based securities and swaps will help banks focus on these things in which they still *do* have comparative advantage by removing the need for them to pay attention to areas in which they no longer have much comparative advantage.**

tant to rely on such risk-based income sources. One need look no farther than banks' aggressive participation in derivatives and other capital markets activities on a fee basis to see the shift in bank revenues away from net interest income toward fee-based transaction income.

Two factors really account for this shift away from risk-based income toward fee-based income. First, as explained repeatedly here, banks' primary comparative advantage is in the collection and analysis of information, especially information about their customers' credit risks and cash flow demands. Consequently, the move by commercial banks into *pure financial market intermediation* is a natural one. As well-capitalized institutions with massive economies of scope in information, banks are perfectly suited to be intermediaries in all types of capital market activities. Changes in regulation, such as the expansion of bank and bank affiliate securities underwriting powers, have facilitated such moves toward fee-based capital markets transaction intermediation.

Second, regulation has basically *forced* banks to focus more on fee-based income than risk-based income. Such regulations have come from private bodies like the Financial Accounting Standard Board (FASB), banking regulators like the Office of the Comptroller of the Currency (OCC) and the Federal Reserve, and other regulators, such as the Securities and Exchange Commission (SEC) and Commodity Futures Trading Commission (CFTC). The FASB, for example, has forced banks to re-evaluate their risk-based income by forcing a move toward marking basically everything to market. Even FASB's recent hedge accounting proposal would prompt the marking to market of off balance sheet transactions to the point that even hedging becomes difficult for a bank running virtually anything other than a matched book.

The OCC and Fed have prodded banks away from risk-based income generation as well, principally through their obsession with and somewhat cumbersome execution of "risk management" regulations. These requirements range from the onerous interest rate risk measurement requirements imposed pursuant to the Federal Deposit Insurance Corporation Improvement Act (FDCIA) to mandates concerning capital market-based risk measures such as "value at risk." Banks that rely on risk-based income sources thus will find it increasingly difficult to take the risks necessary to generate adequate income without incurring substantial compliance costs.

Also driving banks away from risk-based income are the Basle capital requirements on credit-sensitive transactions.[30] As long as a loan remains on a bank's balance sheet, the bank must allocate capital to the loan. Asset transformation programs like securitization, however, allow banks to eliminate these capital-intensive transactions.

Banks' desires to exploit comparative advantage in information acquisition and to avoid anti-competitive and onerous regulation will make products such as CLOs, LLSNs, and loan-based total return swaps incredibly attractive to commercial banks. In some ways, these new products actually will make it possible for the first time for banks to shift significantly their business lines toward a fee-income basis while remaining profitable. Banks' desires to diversify and in some cases practically eliminate interest rate and credit risk is already apparent in the loan syndication, loan resale, and loan securitization markets. These avenues, however, have limited participation by the deep-pocketed investment community and thus present banks with at best a partial solution to the risk transfer of their balance sheet to the capital market. In other words, banks can now transfer their risk to one or a handful of other institutions. But the absence of loan market *liquification* has made it impossible for banks to transfer their risks *to the capital market at large*—until now.

## CONCLUSION

Recent innovations in commercial loan-based securities and derivatives have created opportunities for institutional investors that were simply not available 10 years ago on the same cost basis. These innovations have been driven by a combination of structural changes in the banking industry, enhanced technology for securitizations, reformed banking regulations, and the advent of credit derivatives. As a consequence, institutional investors now can participate in leveraged commercial loans

30. For a thought-provoking discussion of the real impact of bank capital requirements, *see* Merton H. Miller, "Do the M&M Propositions Apply to Banks?" *Journal of Banking & Finance* (1995).

as an asset class, either through loan-based securities like LLSNs and CLOs, or synthetically through total return swaps.

As rapidly as loan-based financial innovation is now occurring, more changes are to be expected. Most LLSNs and CLOs are not ERISA-eligible, thus limiting pension participation to total return swaps. Although total returns swaps might be an alternative, the Basle Accord creates a bias against swaps from the perspective of the loan originator—that is, unlike securitization, total return swaps leave original loans on the bank's balance sheet and thus subject them to continuing capital charges. Recent proposals to change the implementation of bank capital requirements in the United States, however, could radically change that calculus and make total return swaps far more desirable to pensions. And if pension plans can participate in this market on an unrestricted basis, the liquification of the commercial loan market may just be beginning.

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