

FRBSF WEEKLY LETTER

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The Securitization of Lending Markets

This decade has been a period of unprecedented financial innovation. In large measure, innovation has been a response to increased demand for more sophisticated risk-management products that counter the high and variable inflation and interest rates that were observed in the seventies and eighties.

Much of this innovation has involved "securitization." In its broadest sense, securitization is the process whereby borrowers obtain funds more or less directly from investors through the sale of publicly-traded, open-market securities. This process diminishes the roles played by traditional loan instruments and traditional intermediaries, such as commercial banks and savings and loan associations. As a result, private loans negotiated between a borrower and a lender (or a small group of lenders) are being replaced by or transformed into publicly-traded securities.

Moreover, securitization increasingly has involved the creation of "derivative securities" that repackage existing publicly-traded securities. These derivative securities respond to the specific risk/return profiles of different classes of investors and thus supplant services traditionally performed by intermediaries. This *Letter* looks at alternative forms of securitization to gain insight into the economics of this process.

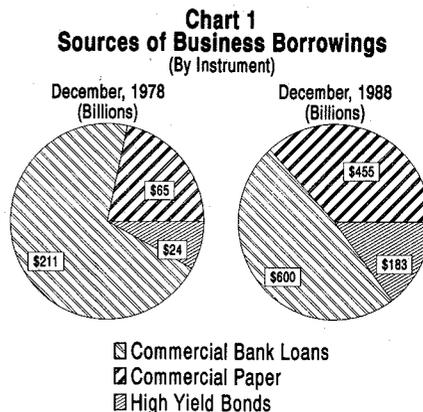
Bypassing traditional markets

A common form of securitization involves issuance of public securities in cases where the issuers formerly would have relied on bank loans. Improvements in the technology used to gather, process, store, and disseminate information, as well as regulatory changes that have streamlined the public-securities issuance process, have made it increasingly economical for borrowers to bypass traditional lenders by issuing securities directly in public markets.

The growth of large, financially-sophisticated institutional investors, such as pension funds and mutual funds, also has spurred this trend. The emergence of such investors has enhanced market participants' ability to evaluate credit risks

and analyze increasingly complex securities, thereby deepening the market for publicly-issued securities.

The shift toward publicly-issued securities is evident in a variety of lending markets. In short-term markets, firms that are considered high quality credit risks have come to rely increasingly on commercial paper as an alternative to short-term loans from commercial banks. (See Chart 1.) In 1978, commercial paper outstanding totaled only \$65 billion. By 1988, the market had grown to more than \$450 billion, or a seven-fold increase in ten years. Short-term business loans extended by banks, in contrast, increased less than three-fold over that period.



Banks have been able to retain a role by providing credit enhancement through letters of credit and more recently, by moving to participate in the underwriting of these securities. Thus, although the funding aspect of these loans has moved to the public market, the involvement of traditional intermediaries (albeit in nontraditional ways) may have helped to stimulate the growth of this form of securitization.

Securitization also is evident in the intermediate- and long-term lending markets. Of course, high quality corporations always have issued public debt. In the 1980s, however, public issues by lower-quality borrowers became feasible. Referred to as "high yield," or "junk" bonds, these

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instruments rely on the improved ability of market participants to assess a corporation's financial prospects. The issuers of these bonds are firms that in the past were forced to rely on commercial banks for their financing needs. This market has grown dramatically in the last 10 years to over \$190 billion in bonds outstanding in 1988.

These examples suggest that the expansion of securities markets represents a shift toward the use of publicly-issued securities as a substitute for private lending arrangements. As long as information technology and the market's ability to underwrite risk continues to improve, competition will remain keen and this trend towards securitization will continue.

Asset securitization

A second form of securitization involves creating publicly-traded securities that are in some sense backed by a pool of private loans. This is often referred to as "asset securitization." The loans that are pooled and securitized in this way generally are all the same type and have similar risk and maturity characteristics (for example, 30-year, fixed-rate residential mortgages). The cash flow generated by the repayments on such a pool of loans is used to make the promised payments to the security holders. These payments generally are "pass-throughs," in the sense that the security holders receive whatever repayments are made on the loans, including any early repayment of principal.

The majority of securitized assets have been residential mortgage and consumer debt, with mortgages by far the most popular. The popularity and success of mortgage loan securitization largely is due to the credit enhancement provided by government agencies responsible for creating a secondary market for residential mortgages. The value of mortgage-backed securities issued by the Government National Mortgage Association (GNMA), Federal National Mortgage Association (FNMA), and Federal Home Loan Mortgage Corporation (FHLMC) exceeded \$700 billion in 1988.

Investors receive promised principal and interest payments on a timely basis as guaranteed by the issuing agency. As a result, these securities pose minimal credit risk; however, they still expose investors to interest-rate and early-repayment

risk. (Early-repayment risk is the risk that the security holder will receive a lower-than-expected return as a result of faster-than-anticipated repayments of the underlying mortgages. Early repayment is associated with declines in the level of interest rates, which induce borrowers to refinance, and thereby repay, the underlying mortgages earlier than otherwise would have been the case.)

Although government guarantees are a motivating factor in the securitization market, private firms also securitize loans that do not qualify for government agency programs. Non-qualifying loans known as "whole loans" increasingly have been securitized, although the dollar volume remains small compared to that securitized by the federal agencies (about \$15 billion were issued in 1988).

To be marketable, these non-agency issues usually aim for default risk approximating that offered by the agency issues. This is usually achieved by obtaining an investment-grade rating through one of the major securities rating firms. To provide the requisite credit-risk protection, the issuer usually relies on a senior/subordinated structure, a corporate guarantee, or third-party credit enhancement.

Consumer debt also has been securitized, with the most popular forms being credit-card receivables and auto loans. Leases, marine loans, recreational vehicle loans, and home equity loans also have been securitized. Typically, the consumer-loan-backed issues are offered with credit enhancement.

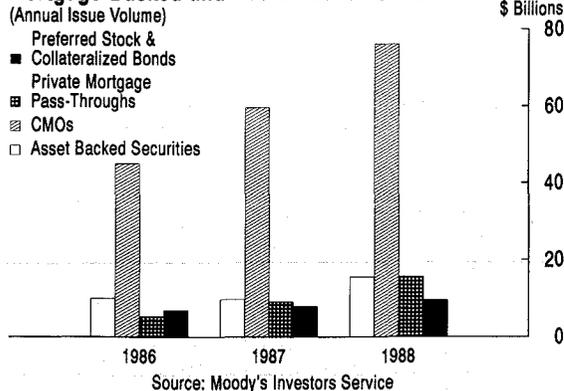
Resecuritizing securities

One of the most important considerations in issuing publicly-traded securities is the need to make the issue marketable by matching its characteristics to the risk/return profile of potential investors. This consideration has given rise to a third form of securitization: derivative securities. See Chart 2.

Creating derivative securities is tantamount to "resecuritizing" existing publicly-traded securities. Here, the cash flows from a pool of public securities are repackaged. Many of these derivative products enable investors to hedge interest-rate and early-repayment risk themselves,

thereby diminishing investors' need for services offered by traditional intermediaries.

Chart 2
Mortgage-Backed and Asset-Backed Securities



The two most common examples of resecuritization are collateralized mortgage obligations (CMOs) and interest-only and principal-only securities. The vast majority of CMOs are backed by mortgage-backed securities created through GNMA, FNMA, and/or FHLMC. Typically, the CMO repackages the cash flows from these securities to create multiple classes of bonds that offer different levels of interest-rate and early-repayment risk.

Each CMO structure contains a subordinated, or residual, class of bonds and one or more senior classes of bonds that carry relatively less interest-rate and early-repayment risk. The structures are designed to match the risk-return profiles of investors, but have the disadvantage that each CMO is unique and therefore, less liquid.

Interest-only and principal-only securities divide the cash flows from agency-backed pass-through securities into interest-only and principal-only classes. When market interest rates rise, interest-only securities rise in value because early principal repayments decline, thereby extending the length of time over which interest payments are received. Conversely, when market interest rates

fall, principal-only securities rise in value because accelerated repayments effectively raise investors' return on their investment.

Risk-based capital guidelines

The passage of the Financial Institutions Reform, Recovery and Enforcement Act (FIRREA) in August 1989, requires depository institutions to hold capital based on the riskiness of their asset portfolios. Under the currently proposed version of the risk-based capital regulation, many securities will require less capital backing than loans. For example, securities issued by FNMA and FHLMC would require capital of only 1.6 percent and those issued by GNMA would require no capital. Non-securitized mortgages would require capital of four percent, while most commercial loans and other assets would require capital of eight percent.

These capital requirements favor investing in securities. The result of these guidelines, if implemented in their current form, will be to promote the continued securitization of private loans.

The future of securitization

A variety of forces have spurred securitization. In some cases, government-provided credit enhancement has played a particularly important role. Bank entry into securities underwriting markets, as well as changes in capital adequacy regulations, are expected to provide an impetus. Ultimately, however, the trend towards securitization has been and will continue to be motivated by investors' demand for the enhanced liquidity and interest-rate hedging opportunities securitization offers investors. With or without government sponsorship, publicly-tradable instruments will continue to replace private transactions, particularly as improvements in information technology further reduce the costs of issuing public securities.

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