SECURITIES LENDING — A HIDDEN LIQUIDITY TRAP

Strategic Investment Group®

Fiduciary Insights

BEFORE THE 2008 CREDIT CRISIS, SECURITIES LENDING WAS WIDELY SEEN AS A LOW-RISK, LOW-RETURN MEANS OF GENERATING INCREMENTAL INCOME ON PORTFOLIO HOLDINGS. Few suspected that this seemingly innocuous ancillary activity would ensnare them in a hidden liquidity trap. This paper describes how the securities lending market functions and how it unraveled during the credit crisis, and highlights the need to reassess the risk-reward tradeoff of securities lending.

The Sudden Revelation of Securities Lending Risks

During the 2008 credit crisis, funding liquidity quickly evaporated, amid heightened counterparty risk aversion and a generalized flight to quality. The loss of funding and market liquidity became evident in unprecedented money market spreads and an inability to trade in size in markets traditionally considered the deepest.

The crisis also unveiled hidden risks of securities lending, which institutional investors had long considered a low-risk, low-return ancillary activity that helped defray custodial costs and the costs of commingled vehicles. Few scrutinized the securities lending operations undertaken in major institutional commingled funds. With the onset of the crisis, many discovered that their securities lending exposures represented another source of illiquidity, compounding the impact on their portfolios of the broader loss of market liquidity. Even funds normally expected to provide daily liquidity limited redemptions. Many investors responded by curtailing their securities lending operations wherever they could. While such retrenchment was an understandable reaction to changed risk perceptions, it had the cumulative effect of further reducing market liquidity.

Securities Lending Basics

Securities lending is a method of generating incremental income on securities held in a portfolio by temporarily transferring (i.e., lending) such assets to another party. The main benefit of securities lending to the borrower is the reduced time and cost of obtaining securities temporarily. Securities are borrowed to avoid the costs of settlement failure, settle short sales, and cover short open positions in the derivatives markets. Common forms of arbitrage rely on the ability to borrow securities, and traders and market makers use the securities lending and closely related repo markets to fund their positions. In return, the lender receives a small amount of fee income in addition to the normal interest, dividends, or capital appreciation of the loaned security. Loanable securities include a broad range of international stocks and bonds. By far the most active securities lending market is that for U.S. Treasury securities.

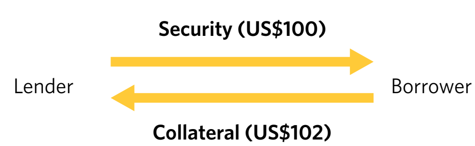
During the credit crisis, liquidity quickly evaporated.

Lending Mechanism

Securities lending is conducted through open-ended, fully collateralized agreements, which may be terminated at short notice by either the lender or the borrower. The collateral exceeds the market value of the loaned security by a margin of 2% in the case of U.S. dollar-denominated securities and 5% in the case of other securities, with the higher margin of the latter designed to provide a cushion against exchange rate movements to a U.S. dollar-based lender. Cash collateral is typical, but collateral may also be delivered in the form of a security, and the market value of such non-cash collateral must exceed the value of the loaned security by a significant margin. Both the loan fees and collateral are repriced daily. The structure of a typical securities lending transaction includes the following three steps:[1]

The crisis also unveiled hidden risks of securities lending.

- **Step 1.** At the initiation of a securities loan, the lender transfers the security to the borrower, and the borrower wires the lender cash collateral (or transfers to the borrower collateral in the form of securities) with a margin (e.g., 2 percent) over the value of the security.



1 For simplicity, the impact of marking collateral to market, a daily feature of securities lending transactions, is not illustrated in this example as a constant market value of the loaned security is assumed.

A conflict of interest can arise between the lender of securities and the lending agent.

- **Step 2.** During the loan period, the lender earns a fee, remains entitled to the income generated by the loaned security, and remains exposed to changes in its market value. In the case of cash collateral, the fee earned by the lender represents part of the income generated by investing the collateral in short-term investment vehicles.
- **Step 3.** When the loan is terminated, the borrower returns the security (and any distributions) to the lender, and the lender returns the collateral to the borrower. In the case of cash collateral, the lender pays the borrower a portion of the interest earned on cash collateral. The amount of interest paid to the borrower is typically the risk-free rate less a spread that increases with the scarcity value of the security.

Sources of Return

The fee earned by the lender is either paid directly by the borrower in the case of non-cash collateral, or generated through the investment by the lender of cash collateral in short-term investment funds (STIFs). Lending profits generally rise with unusual demand for a security — arising, for example, when the security is the cheapest to deliver in an expiring futures contract — and with the extent of quality or maturity mismatch between the risk-free rate and the way in which the cash collateral is invested. When there is unusual demand for a security, the lender can generate income without a mismatch in maturity or credit quality — by lending overnight, and by investing overnight at the risk-free rate — as the portion of the collateral investment proceeds paid to the borrower declines. When a security is not in special demand, the interest paid to borrowers of the security approaches the risk-free rate, and to generate incremental income it is necessary to establish a quality and/or maturity mismatch between the risk-free rate and the investment of cash collateral. This mismatch is intermediated through STIFs established to pool investments of cash collateral raised through securities lending.

Role of the Lending Agent

Most institutional investors rely on custodian banks to act as their agent in securities lending. In the case of institutional commingled index funds, the fund provider is both the custodian and securities lending agent. Custodian banks have a critical mass of securities to lend, established contacts with credit-worthy brokers, and the systems needed to ensure smooth lending operations. In particular, the lending agent identifies credit-worthy borrowers, negotiates loans on behalf of the lender, executes the transaction by delivering the loaned security and receiving collateral, invests cash collateral, unwinds the loan at its maturity, and handles administrative arrangements for collateral, settlement and reporting.

The lending agent is compensated for its service by retaining a portion of the return to securities lending. Here an important conflict of interest exists. In the case of cash collateral, the return to securities lending is generated through returns on cash collateral invested in a STIF. Both the agent (the custodian) and the principal (the securities lender) have an interest in the return generated by the STIF account, as they share this return. Only the principal, however, bears the risk of loss. As the custodian receives part of the upside in extending credit and maturity risk to increase STIF returns, and none of the downside of any losses that may result, there is an incentive at the margin to take slightly higher risks in STIF accounts. To be sure, there are limits to how far this incentive can influence STIF investments. A key mitigating factor is the reputational risk that would result from frequent or large STIF losses.

Sources of Risk and Risk Mitigation

Before the 2008 credit crisis, the risks normally associated with securities lending were limited to counterparty, operational, and investment risks.

Counterparty risk refers to the chance that the borrower might be unable to return the loaned security to the lender at the end of the term of the loan or when recalled by the lender. It is mitigated by the credit screening of borrowers, the full collateralization of loans, and the practice of marking collateral to market each day. The short duration — often overnight — of the loan also reduces the joint probability of borrower default and collateral shortfall.

Operational risk includes settlement failures during the exchange of collateral and the loaned security, and inability to collect scheduled interest payments on the loaned security. Careful monitoring and systems are the main tools used to limit operational risk. The simultaneous transfer of the loaned security and the collateral in the U.S. market reduces the risk of settlement failure. With non-U.S. securities, the risk is controlled by taking receipt of the loaned security and the collateral one day before settlement.

Investment risk arises from the possibility of losses from the poor performance of STIFs in which cash collateral is invested. Investment risk is mitigated by the short duration and limited credit exposure typically taken in STIFs. In the wake of the 2008 credit crisis, however, a number of STIF accounts (as well as other money market mutual funds) suffered losses from the Lehman bankruptcy and default on their short-term paper. In addition, the unusually volatile conditions in the money market resulted in significant price declines even on performing paper.

Securities Lending as a Hidden Source of Liquidity Risk

In addition to the three aforementioned risks normally associated with securities lending, the crisis revealed a fourth, **liquidity risk**, for which investors were neither prepared nor remunerated.

The liquidity risk from securities lending emanated from the disruption in the money market. This disruption impaired the ability to unwind securities loans at short notice, and thus deprived investors of access to assets that were meant to be fully liquid.

The flight to quality and acute concern over counterparty risk that emerged in mid-2007 severely disrupted the functioning of the money market and resulted in a sharp widening of credit spreads on short-term instruments, including many that were staples of the STIFs in which cash collateral from securities lending was invested (Exhibit 1 on Page 4). Depending on the nature and extent of the credit risk taken to generate incremental returns, some STIFs experienced losses from outright default while others saw the prices of their holdings fall in the wake of the spike in money market volatility and spreads. All STIFs suffered from a generalized reduction in money market liquidity.

In addition to the impact of unusual volatility and spreads in the money market, which hurt the performance and liquidity of STIFs, many securities lending operations, including those using non-cash collateral, experienced difficulties in getting loaned securities returned in a timely manner. Delays in the return of loaned securities were particularly evident in the government bond markets, where the flight to quality resulted in strong demand and an unwillingness to sell Treasuries and other government bonds.

Securities lending is a part of the collateralized lending market that supports trading activity.

Delays in the return of securities on loan became yet another source of illiquidity. In some cases, unwinding large securities lending operations required a concerted effort over a number of weeks, a far cry from the expectation that loaned securities would be available for trading virtually on demand.

While many securities lending operations undertaken by institutional investors are handled through explicit arrangements with a custodian bank, large institutional commingled index funds also undertake securities lending, and these funds became another source of hidden illiquidity risk. The cash collateral pools backing these lending activities were invested in securities — asset-backed commercial paper and other money market instruments — that were no longer readily marketable, or could not be sold without realizing losses. As a result, some institutional commingled index funds imposed ad hoc limits on redemptions, and the allowable withdrawal amount in some cases depended on the intended use the investor had for the funds. To facilitate investor redemptions pending the return of normal money market conditions and to avoid the realization of mark-to-market losses, some commingled funds met redemption requests using a combination of cash and securities.

Market and Funding Liquidity

Seen in a broader context, securities lending is a part of the collateralized lending market that contributes to the ability of broker-dealers, traders, banks, and hedge funds to finance their trading activity. Securities lending activities, like the repo market, contribute to funding liquidity. Without the ability to borrow through these markets, traders of all kinds would need a much higher level of capital to back their operations. The ability to finance trading operations through short-term, inexpensive borrowing is a key facet of liquidity.

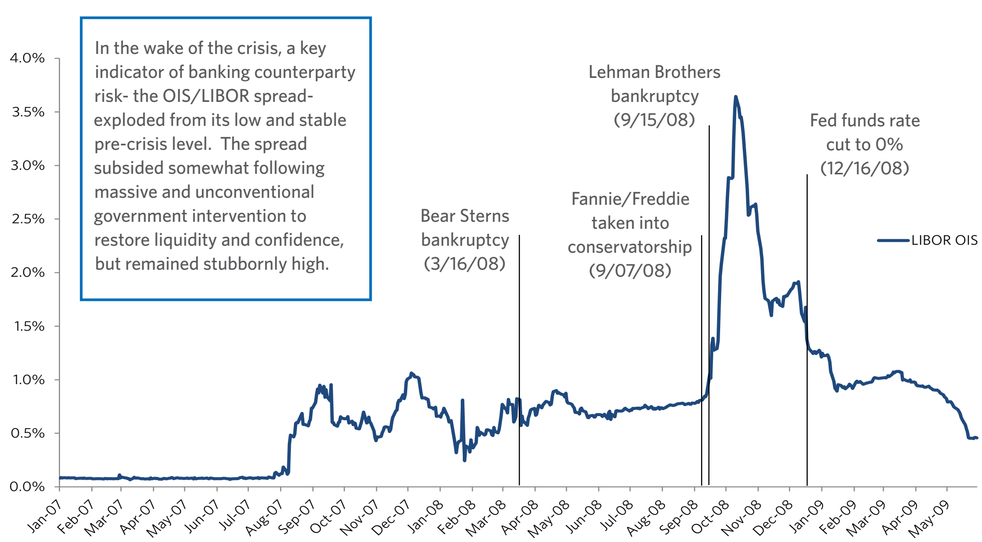
As the 2008 credit crisis made painfully clear, liquidity is fragile. Funding liquidity, the ability of banks, brokers, and market makers to fund the securities held on their books, can abruptly evaporate. When funding liquidity is imperiled, market liquidity — the ability to trade securities in size at reasonable cost without significantly affecting market prices — can dry up in even the deepest markets.

EXHIBIT 1:

Money Market Spreads Explode

Source: Bloomberg.

Overnight Index Swap LIBOR Spread: (Jan 2007 - May 2009)



Market and funding liquidity are intertwined and mutually reinforcing. A key link between the two is the role of margin requirements in the securitized lending markets (including the securities lending and repo markets) that banks, prime brokers, hedge funds, and others rely on to supplement the capital underpinning their trading activities. In crisis conditions, such as the 2008 credit crisis, brokers and speculators experience funding problems arising from two related liquidity spirals: a margin spiral triggered by creditors demanding higher levels of collateral, and a loss spiral resulting from declining market prices, which further erode the value of collateral.

Recent research by Brunnermeier suggests that the mutually reinforcing interaction of these margin and loss spirals help explain the typical pattern of illiquidity in crises.[2]

- Market liquidity can evaporate abruptly from apparently limited causes. In the 2008 crisis, the triggering event — real estate losses — led to system-wide market dislocation and the massive destruction of wealth.
- Market liquidity is inversely related to volatility. High levels of market volatility are associated with low liquidity, and an important link between the two is the tendency for margin requirements to be raised when volatility is high. Higher margins force speculators to reduce leverage, compounding the downward price spiral and amplifying volatility.
- Illiquidity is a contagion that spreads across securities and asset classes. The ease or difficulty with which speculators and brokers can fund their positions is the chief vector of this contagion across securities and asset classes.

In 2008, the natural reaction of investors to retrench from securities lending activities in the face of price shocks and market risk contributed to illiquidity by reducing the ability of traders and others to fund their positions. Rational responses by individual investors, when taken together, compounded the broader loss of liquidity.

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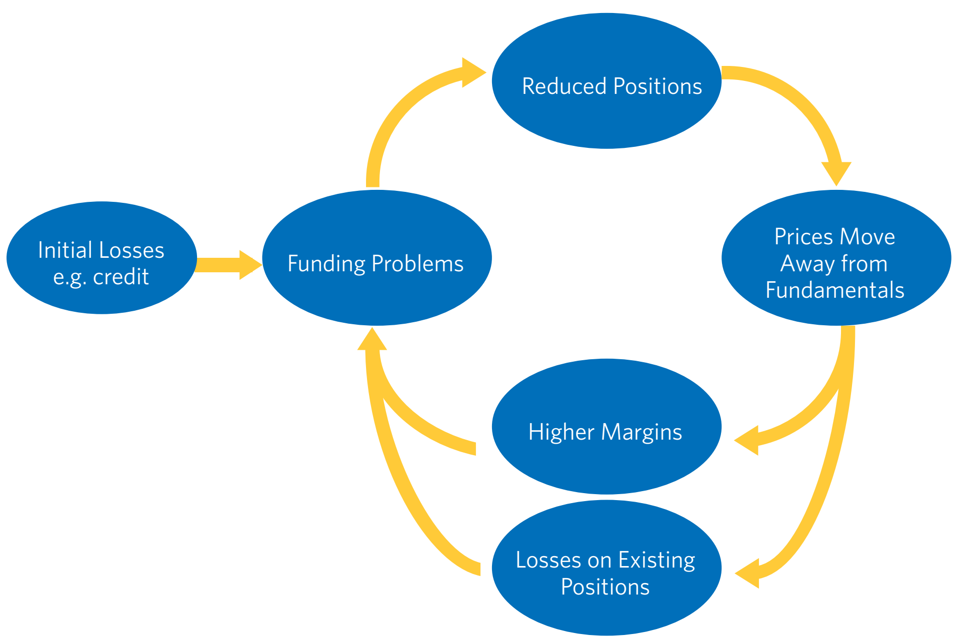
EXHIBIT 2:
Amplification of Shocks by Liquidity Spirals
Source: Brunnermeier. Reproduced with the permission of the author.



2 Brunnermeier (2008), "Deciphering the Liquidity and Credit Crunch 2007-08", National Bureau of Economic Research Working Paper 14612 © http://www.nber.org/papers/w14612

Conclusions and Recommendations

Investors need to reappraise their involvement in securities lending.

Investors need to reappraise their involvement in securities lending. Closer scrutiny of the investment guidelines and permissible securities in STIF accounts is warranted to assess the risk-adjusted benefits of the underlying credit and maturity exposures. Investors should also be aware of the conflicts of interest that result from a system in which both the principal (the lender of securities) and agent (the custodian) share in the returns from STIF accounts, but only the securities lender bears losses resulting from STIF investments. Some custodian banks provide a limited set of choices of STIFs distinguished by their list of eligible securities and maturity profile, making it possible for investors to choose more conservative STIF investments.

Commingled fund providers, which typically do not offer a choice of STIFs, are increasingly offering "lending-free" funds and in some cases facilitating the transfer of investor accounts to those funds. With these options increasing, investors have more opportunity to weigh whether the gains from securities lending adequately compensate them for potential limitations on redemptions and other potential losses.

The retrenchment from securities lending by a number of institutional investors in response to the current crisis has already contributed to a decline in overall market liquidity. Investors should be aware that structural shifts in securities lending practices could have a long-lasting effect on market liquidity and lead to changes in the economics and fees of custody services and commingled fund providers.

Securities lending is not the innocuous ancillary activity it was widely believed to be. In the wake of the 2008 crisis, it has been revealed to pose serious liquidity and market risks, and many investors have curtailed their securities lending programs accordingly. The risks of securities lending may not have been adequately compensated, given its very low return and the hidden exposures that the crisis revealed. At a very basic level, the 2008 crisis underscored the need to reassess the risk/reward tradeoff of securities lending, and to determine how such lending fits into broader investment objectives, liquidity needs, risk tolerance, and relationships with custodians and commingled fund providers.[3]

3 See Fiduciary Insights paper "When the Well Runs Dry: Managing Liquidity through Extreme Markets".

Strategic Investment Group

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