



C A M B R I D G E A S S O C I A T E S L L C

SECURITIES LENDING: AN INTRODUCTION

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Introduction

Investors participate in securities lending programs to generate additional income, which may be used to defray costs such as manager and custodian fees. Participants often regard securities lending as a low-risk investment opportunity that is conducted without altering the investment characteristics of the original investment portfolio. However, investors tend to understate the risks involved, most notably the counterparty risk and collateral risk. Institutions engaging in securities lending programs should therefore pay particularly close attention to lending exposures and risk mitigation and management.

There are typically three main parties involved in a securities lending program. The **lender** (that is, the investor), holds a portfolio of securities. The **lending agent**, most often the lender's custodian, is responsible for managing the transaction. The **borrower**, often a hedge fund, seeks to borrow securities, often for purposes of short selling. Most types of securities may be borrowed, including equities, exchange-traded funds, and fixed income securities. The borrower posts collateral as a guarantee for the return of the borrowed security. The income from this collateral pool is split between the borrower, the lending agent, and the lender. At some point, the borrower returns the security in exchange for return of their collateral. Exhibit 1 shows how a hypothetical securities lending transaction would work.

Characteristics of “Borrowed Securities”

While the underlying security typically is sold by the borrower, the process is structured so that the lender retains almost all of the rights of a standard shareholder. The borrower is responsible for paying all dividends, income, and other similar distributions that accrue during the life of the transaction (however, there is no direct contact between the borrower and the lender, so the income flows through the lending agent). The lender does lose the right to proxy voting because the lender is no longer the shareholder of record.

Because stocks are generally borrowed for short selling, arbitrage plays, or re-lending, the most borrowed stocks are those subject to mergers & acquisitions, those with heavy trade volumes, or securities that are subject to regular short selling. The most borrowed bonds are typically government bonds, or others that are actively traded and held in large blocks.

Borrower Collateral and Rebate

The borrower of the securities posts collateral that represents between 102% of U.S. securities and 105% of non-U.S. securities including accrued income. Collateral typically takes the form of cash; however, other types of securities may be used, including government securities, letters of credit, and other select forms of non-cash collateral. When a borrower posts non-cash collateral, the lending agent will specify some discount depending on the type of security. For example, a large-cap stock may be subject to a 50% discount in terms of counting toward the collateral requirement.

The collateral requirements exceed 100% of the loaned value to mitigate the counterparty risk, should the borrower default or go bankrupt. To compensate for changes in the value of the loaned securities, the lending agent marks to market the value of the collateral on a daily basis. Should the price of the borrowed security go up such that the cash provided to collateralize the loan dips below 100% of the borrowed security's price, the lending agent requires the borrower to replenish the collateral to its original level.

For the duration of the transaction, the borrower receives a "rebate" on the income generated by the collateral. This rebate is determined by the supply and demand conditions of the borrowed security. Low demand / high supply securities will result in the borrower receiving almost all of the income as rebate. High demand securities result in rebates close to zero and, in some cases, the borrower may actually have to pay an additional amount, or a "negative rebate." These conditions are cyclical. Treasuries, in great demand in earlier periods, currently provide a high rebate, while energy exchange-traded funds currently provide the borrower with low or negative rebates.

Collateral Income Management

The largest securities agents are the custodians. Most custodians aggregate the collateral from the individual securities lending efforts into a commingled pool. When the borrower posts collateral, the funds are used to purchase shares of the pool. The shares are redeemed when the borrowed securities are returned. For very large programs, lenders may negotiate to have a separate collateral pool account set up for their programs with their specific guidelines.

The borrower receives a rebate on the collateral, depending on the specific securities borrowed. The lender and the lending agent then split the excess income above the rebate, also known as the "spread." This split ranges from 50% to 90% of excess income going to the lender, subject to negotiation and dependent upon the size of the program and restrictions imposed.

The lender bears all of the risk to principal in the collateral pool. In other words, if the value of the collateral pool falls below the value of the borrower contributions, the borrower receives its entire 102% to 105% collateral contribution when the transaction closes while the lender assumes the loss.

The Lending Agent's Role

The lending agent usually performs two critical tasks: managing the details of the securities loan and investing the collateral pool. The lending agent is typically the custodian, although there are specialist firms (including those in the custody business) that will provide this service on a standalone basis. In those cases, the custodian charges the lender an additional fixed rate to transfer the securities to a third-party agent because the custodian would no longer receive a portion of the collateral pool income.

In terms of managing the securities loan, key responsibilities consist of matching securities with borrowers; delivering the loaned securities; tracking all details of the transaction including dividends, income, and corporate actions for the loaned securities and marking collateral to market; and closing the transaction with the return of the security and the collateral.

The lending agent also typically manages the collateral pool. These pools are generally benchmarked to cash and are managed as “enhanced cash” pools to generate additional income for the participants. Like many enhanced cash vehicles, several of these pools have experienced credit issues in the past, including concerns over their exposure to mortgage securities.

Issues to Consider and Ways to Mitigate Risks

Income generated through securities lending is not guaranteed. The participant in a lending program should understand each of the potential risks involved. These risks include counterparty risk, operational risk, and collateral risk.

Counterparty Risk

Counterparty risk is the risk that the borrower will default and not return the securities at the completion of the contract. There are at least three ways of mitigating this risk. First, the lending agent can offer the lender indemnification against borrower default. Should the borrower default and fail to return the securities, the lending agent will attempt to make the lender whole with securities purchased with the marked-to-market collateral. The collateral value should be adjusted accordingly as the lending agent likely marks to market on a daily basis. Second, the lending agent can lend to a diverse group of borrowers. By dividing loans among numerous borrowers, the lending agent can establish viable counterparty risk diversification. Finally, the lending agent should perform thorough due diligence before lending and continue to monitor borrowers once they have received a loan, including continuing credit reviews and maintenance of credit limits.

Operational Risk

Operational risk is the risk that the lending practice falters at some point during the process. It includes the risk that interest or dividends are not posted, that the security delivery fails, or that the collateral is not properly marked to market. Essentially, these risks could affect the return the lender expects to receive over the term of the contract. Although advancements in technology have helped minimize disruptions in the lending operation, lending agents can further mitigate this risk through several actions. For instance, the lending agent can indemnify against negligence or willful misconduct. In addition, lending agents settle transactions delivery versus payment in U.S. markets and demand predelivery of collateral in non-U.S. markets. Lending agents also automate the processes for dividend payments, corporate action, pricing, and marking to market to ensure proper execution. Finally, lending agents can mitigate operational risk by implementing an extensive and disciplined risk management and oversight process.

Collateral Risk

Collateral risk is the risk that the collateral fails to achieve a rate of return in excess of the rebate paid to the borrower or that the collateral suffers a loss of principal value. Due to the symmetric design of the split, the lending agent shares the risk with the lender if the spread of the collateral return over the rebate paid is negative. However, there is not a similar alignment of incentives with regard to preservation of principal on the collateral. In this case, the lender is taking all the risk of principal loss while the lending agent has the incentive to maximize the spread by investing the collateral aggressively. In addition, the liquidity of a commingled collateral pool with impaired assets may become an issue as has happened recently, with at least two large providers, Mellon and Northern Trust, offering restricted options for exiting the pool. In the current environment, forced sales of assets, for example, may expose stock lenders to additional risk. *In particular, many securities lending agreements specifically state that the lending agent can make additional cash calls on investors to make good their share of any such shortfall.* It is not possible to define the amount of these cash calls or to foresee the worst case scenario, but recent history has been that securities that appear to be “money good” and not in default can trade at 80% or less of book redemption value. This could in theory translate into realized losses (and cash calls) of a significant proportion of the value of the lending pool.

In order to mitigate this risk, the lending agent can indemnify against negligence or willful misconduct and also monitor the quality, duration, and liquidity of the securities purchased with the collateral pool. The lending agents have also established control systems and automated trading tools to ensure they remain within predetermined boundaries. Finally, large institutions can opt to have collateral managed in separate accounts, where customized investment guidelines specifying short maturities and credit and sector limits can be established.

Over the last decade, the securities lending business has evolved, becoming more institutionalized, efficient, and structured with operational safeguards. Standardized contracts that include indemnification have greatly mitigated counterparty and operational risks, so collateral risk remains a predominant concern. The lender should select a lending agent that has a history of adhering to strict monitoring controls and investing collateral in conservative investment tools. Participants should remain cognizant that while the gains via securities lending are generally modest, the potential downside could be hefty. As David Swensen, Chief Investment Officer at Yale University, noted on the subject of securities lending, “make a little, make a little, make a little . . . lose a lot.”¹

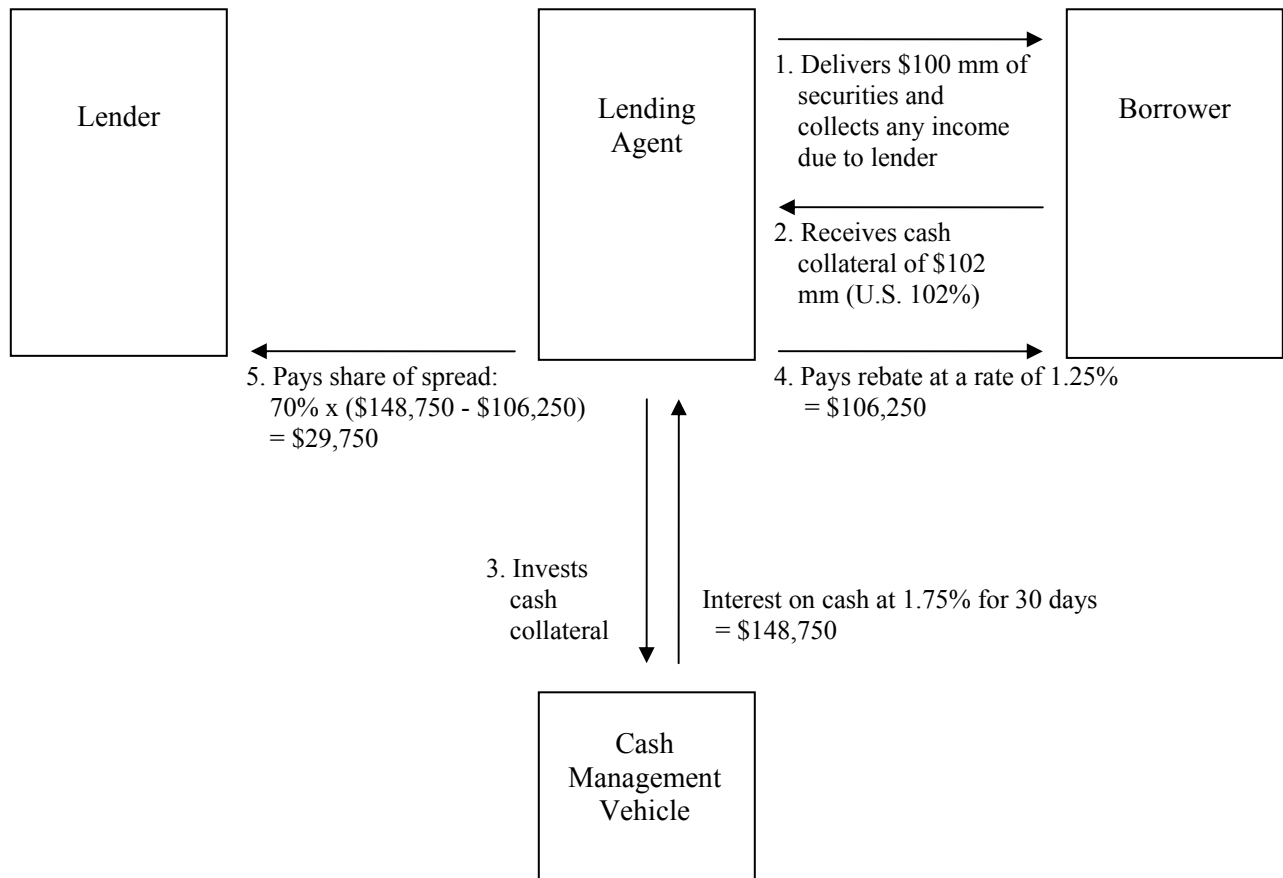
While advancements in technology have created a more automated trading environment, which monitors risk more effectively than in years past, participants should understand when and how the securities lending industry incurred significant losses. Please refer to Exhibit 2 for examples of historic securities lending misfortunes.

¹ *Pioneering Portfolio Management: An Unconventional Approach to Institutional Investment*, by David F. Swensen, 2000.

Exhibit 1

HYPOTHETICAL TRANSACTION DIAGRAM

Example: Loan of \$100 million of securities for 30 days collateralized with cash, where the prevailing interest rate is 1.75% and the lender/agent split on income is 70/30.



SECURITIES LENDING PROCESS

Investor (as Lender)	Lending Agent	Broker/Dealer (as Borrower)
<ul style="list-style-type: none"> • Select Lending Agent <ul style="list-style-type: none"> - Execution skill - Credit quality - Access to borrowers • Negotiate share of spread 	<ul style="list-style-type: none"> • Identify Borrower <ul style="list-style-type: none"> - Credit review • Negotiate price with borrower, called "rebate" • Execute • Provide indemnity to lender 	<ul style="list-style-type: none"> • Execute

Exhibit 2**EXAMPLES OF SECURITIES LENDING MISFORTUNES****Mellon Bank, 1994**

- Soon after acquiring The Boston Company in 1992, Mellon covered this subsidiary's securities lending losses, which totalled \$130 million.
- The Boston Company had invested the cash collateral pool in structured notes, some of which were inverse floaters. These vehicles were designed to be inversely correlated to interest rates, creating value when interest rates declined, yet losing value (and at a disproportionate rate) when interest rates rose.
- As interest rates increased quickly in 1994, the collateral's long maturity investments lost significant value.
- Though indemnification was not as standard a practice in 1994 as it is today, Mellon did decide to make their lenders whole, or nearly whole, by assuming the \$130 million after-tax (\$210 million pre-tax) loss.
- Mellon also chose to close The Boston Company's securities lending program, transferring its clients to a separate lending division in Pittsburgh that had been unaffected by this crisis.

Harris Trust & Savings Bank, 1994

- Harris also saw the steep rise in interest rates in 1994 affect its cash collateral.
- Approximately one-third of the securities lending assets had been invested in collateralized mortgage obligations. The duration of these positions could not keep up with the interest rate changes.
- This investment cost Harris an estimated \$33 million after-tax (\$50 million pre-tax) loss, which it chose to cover.

First Capital Strategies, 1995

- The Common Fund, a \$20 billion investment pool composed of several American universities and other higher educational institutions, hired First Capital Strategies, a little-known investment company, in the early 1990s as its lending agent.
- For three years, a "rogue" trader at First Capital invested outside the guidelines of the firm's agreement with the Common Fund.
- The trader used a portion of the cash collateral proceeds to conduct a prohibited index arbitrage transaction, which involved buying a stock index futures contract and selling the underlying components. However, the trader only made one side of the transaction, leaving the position unhedged, which resulted in a loss. In an attempt to recoup the loss, additional bets were made, yet further losses were accrued.
- The activity mounted to a \$138 million loss, which forced First Capital to close its doors and left the Common Fund to absorb the losses.

UBS, 2002

- UBS had invested its cash collateral in Enron, which had been rated as investment quality paper at inception of the investment.
- When Enron filed for bankruptcy, the value of the collateral declined and investors consumed the losses.

Citibank, 2002

- Citibank, which served as the lending agent for the New York City Retirement Systems, invested nearly \$90 million of its cash collateral with National Century Financial Enterprises, which was downgraded and later filed for bankruptcy, resulting in large losses.

General Market Environment, 2008

- Amid market turmoil that saw government takeovers of Fannie Mae, Freddie Mac, and AIG as well as the collapse of Lehman Brothers, many cash collateral pools that held these securities declined in value. Many programs denied client requests to shut down their securities lending programs or redeem assets, especially those in the commingled accounts. For those programs that granted the opportunity to redeem, if the net asset value was below one dollar, the client absorbed the majority of the market losses.