Office of Innovation
Thought Leadership Series
Third Quarter 2009

CONTENTS

Chapter 1: New Perspectives on Securities Lending 1

Sizing the Market 2

Chapter 2: Two Models for Inventory Management 4

Chapter 3: Optimizing Collateral 6

Chapter 4: The Evolving Role of the Agent Lender 8

Chapter 5: Major Trends for 2009 and 2010 9

Regulatory Changes for the Lending Industry 9

Exchanges, Central Credit Counterparties and Prime Brokers 10

Glossary 12

Resetting the Roadmap: Managing in a New Securities Lending Environment for Beneficial Asset Holders

The business of securities lending was turned on its head by the events of 2008. Going forward, new dynamics are taking shape for inventory and collateral management and in defining the role of the agent lender. Although further out on the horizon, regulatory developments and the emergence of central credit counterparties are likely to create additional change.

Executive Summary

- The reemphasis of the intrinsic value approach to securities lending has been an important factor in redefining the source of securities lending revenues for many beneficial owners. Agent lenders are improving their ability to find intrinsic value through the use of tools such as internet-based auctions and data analysis.

- Cash and non-cash collateral each present opportunities and risks. An increased use of non-cash collateral has resulted in benefits from portfolio diversification, but increased concerns about risk and loan pricing.

- As regulatory concern over legal short selling subsides in the US and Europe, regulators are likely to shift their attention towards increasing transparency in the securities lending market. Nascent electronic securities lending marketplaces and central credit counterparties may help accelerate this.

- Although their role will evolve with the adoption of new tools and technologies, agent lenders will remain critical partners for beneficial asset holders in securities lending.

Our partner in developing this research paper...

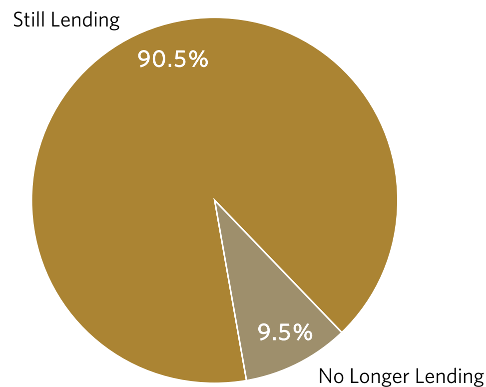
Chapter 1: New Perspectives on Securities Lending

2008 marked a major turning point for beneficial asset holders in securities lending. Institutional lenders have seen that along with revenues, securities lending and collateral management present risks that must be considered as part of the process. While there remains a diversity of opinion about the future of lending, whether to allocate internal resources and how to monitor and evaluate service providers, all lenders recognize that the business of securities lending has become substantially more complicated in the last eighteen months.

For institutional lenders, 2008's portfolio losses sparked a reaction to eliminate or curtail lending programs. Lenders were concerned about the liquidity of their portfolios and inability to stop lending when they wanted. Add the stigma of possibly abetting harmful short selling and lenders had little choice but to consider pulling back. In the end, the number of funds that stopped lending permanently was fairly low: 17.5% in a January 2009 Finadium survey of pension plans, foundations and endowments. These plans represented just 9.5% of the assets under management of the funds we spoke with[1].

Figure 1:

Institutional securities lending participation in 2009 by plan assets as compared to 2008



Source: Finadium Institutional Investor Survey, 2009

Of the funds continuing to lend, we observe some that are actively engaged in their lending program activities and others that continue to take a more passive approach. For funds actively engaged in their lending programs, a range of issues in risk management, collateral reinvestment pools and counterparty exposure have been forefront in their thinking. These questions have no obvious answers; in some cases even the right questions to ask are still undergoing their own evolution. This paper attempts to flesh out some of these issues and presents a perspective on critical considerations for market participants going forward.

1 This study was produced in conjunction with independent research and consulting firm Finadium, drawing on Finadium's ongoing research in custody, securities lending and prime brokerage, including interviews with 34 leading public, private and non-profit funds managing nearly $747 billion in assets.

Sizing the Market

The reduction in hedge fund assets from 2008 to 2009 has been fast and furious. In late 2007 and early 2008 hedge funds appeared on top of the world, with assets under management of US$1.87 trillion according to a recent report by The Bank of New York Mellon and Casey Quirk. Funds of hedge funds themselves managed US$800 billion. By the end of 2008 however AUM had dropped by 25%, with another 29% drop expected by Q2 2009.

Figure 2:

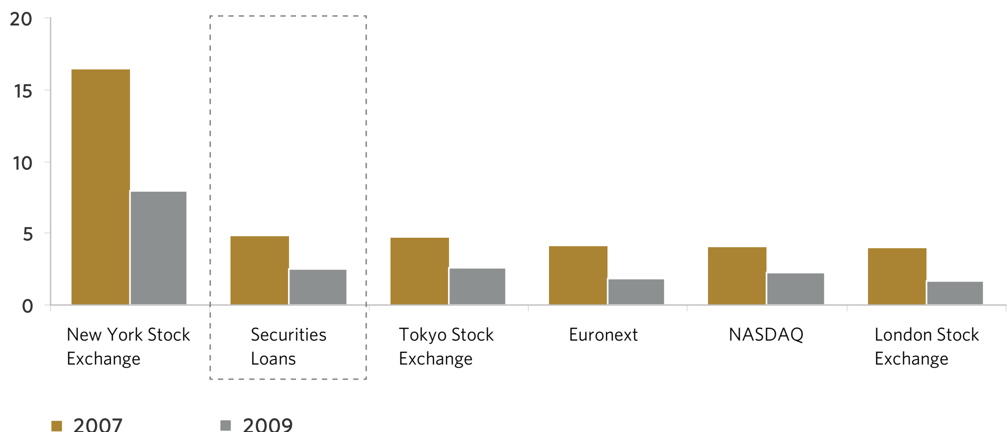
Total Hedge Fund Assets
(US$ Billions)

Source: Hedge Fund Research, Bank of New York Mellon and Casey Quirk Analysis 2009

This sudden decline in assets looking for leverage has led to a sharp drop in demand for securities loans and hence the value of loans outstanding. Finadium research estimates the global size of the securities lending market in late 2008 at $2.5 trillion, down from $4.8 trillion in 2007. The US equities loan market in particular has seen sharp reductions, from loans outstanding of $717 billion in 2007 to a more recent figure of $300 billion. The US equity share has decreased from 15% of global loans outstanding in 2007 to 12% in late 2008.

Figure 3:

Capitalization of Selected Stock Exchanges vs. Global Securities Lending Market
(US$ Trillions)



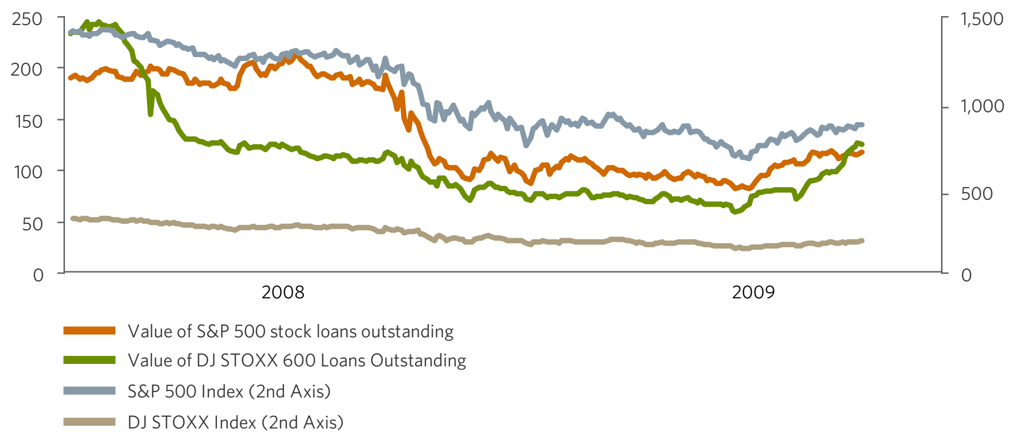
Sources: World Federation of Exchanges, Finadium

Given the drop in prices on the world's equity markets, and accounting for reduced hedge fund assets and leverage, this fall in securities lending balances comes as no surprise. From May 2008 to May 2009, the S&P 500 fell by 36% with a low water mark of 49% in early March 2009. Concurrently, the dollar volume of loans outstanding in the S&P 500 fell 37% during that time; its low point was a 56% drop in March 2009. The DJ STOXX 600 fell 39% during that time with a low point of 52% also in March. During this period, the dollar volume of loans in DJ STOXX 600 securities declined by 46%.

The same data also shows that the securities lending market is starting to recover. Since March 2009, S&P 500 loan volumes have increased by 40%. This should not be read as negative market sentiment but rather an increased ability for short sellers, whether market neutral or directional, and derivatives traders to engage in their normal business. Even so, a return to 2007/2008 lending levels may take some time and depend on overall financial market conditions. There appear to be signs that hedge funds are recovering; a recent report from BNY Mellon and Casey Quick projects that hedge fund assets may grow to $2.6 trillion by 2013.

Figure 4:

**S&P 500 and DJ STOXX 600 loan values outstanding vs.
S&P500 and DJ STOXX 600 Index Levels**
May 1 2008 to April 30 2009



Source: Yahoo Finance, SunGard ASTEC Analytics

Chapter 2: Two Models for Inventory Management

Two models for securities lending are evolving in the institutional lending community. One model that was pervasive and continues to be appropriate for some lenders is to focus on utilization of a portfolio for maximizing collateral returns. Historically, lenders could earn incremental basis points on general collateral loans, making the utilization ratio of a portfolio a key criterion of a successful program. This model also supports strategies that require cash generation.

The other model is the re-emergence of an older industry standard: it presumes no meaningful collateral return and focuses instead on the intrinsic value of a securities loan. In this case the lender will earn whatever is paid on the securities loan itself and will derive limited incremental benefit from collateral reinvestments. Put another way, lenders earn revenues with lower cash reinvestment risks and see extra collateral exposure as unnecessary to meet their objectives.

The major beneficiaries of the intrinsic value model are beneficial owners that want to continue lending while minimizing their exposure to other risks. For example, mutual funds with hard to borrow equity portfolios or institutions with large single holdings are likely good candidates for pursuing this approach. Intrinsic value is not for everyone, however; lenders looking at financing cash or collateral positions may not want to pursue the intrinsic value model as this does not support their other strategic goals.

The intrinsic value perspective has been gaining substantial momentum in the last six months. Lenders are evaluating the types of credit they are willing to accept and what levels of risk are appropriate for an expected return. The resolution of these issues will drive the adoption of either the intrinsic value or utilization approach to lending; though it will take some time before lenders decide what strategies they ultimately want to pursue. Clients may also consider pursuing both of these strategies depending on the composition of their portfolios.

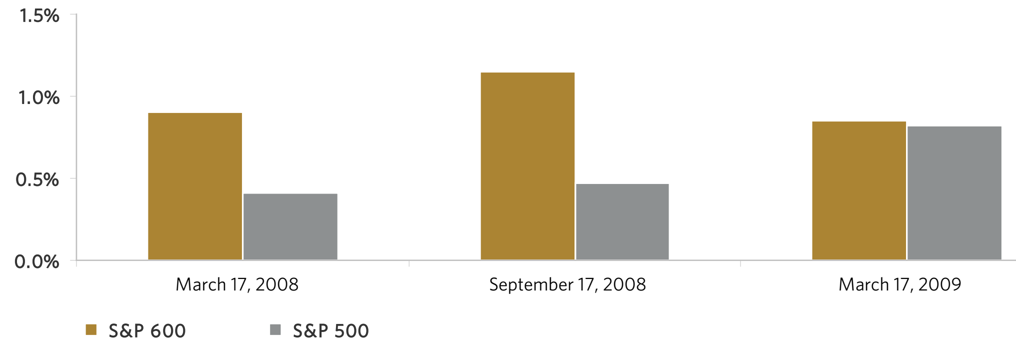
The intrinsic value model is one factor in the increased cost that hedge funds and other leveraged investors are paying for borrowing securities. Other factors include changes in prime brokerage business models and balance sheet constraints that make pre-borrowing for anticipated loans more difficult. Some drivers are linked to the recent economic downturn: three years ago, few market observers would have thought that major industries like auto makers, banks or insurance companies would go bankrupt or require large government investments to stay in business.

Certainly, new hard to borrow stocks are appearing as never before. Our analysis in March 2009 found hedge funds paying hard to borrow rates on 26 stocks in the S&P 500 compared to just five stocks in March 2008. Some of these securities were extremely expensive at 75% and more below Federal Funds, hitting records not seen even in the days of the dot-com boom.

As a group, borrowing the S&P 500 stocks in March 2009 was about as expensive as borrowing all S&P 600 small cap stocks. From a historical standpoint this is a highly unusual situation; generally speaking, large cap stocks are supposed to be easier to borrow than small cap stocks.

Figure 5:

S&P 500 and 600 average rebate rate spreads from target Fed Funds rate



Source: Finadium

Defining intrinsic value is not always straight-forward. However, in many ways it is similar to seeking best execution in an equity trading market though without consolidated rates or prices flashing on a trading screen. According to MiFID, best execution requires that "investment firms" take all reasonable steps to obtain, when executing orders, the best possible result for their clients taking into account price, costs, speed, likelihood of execution and settlement, size, nature or any other consideration relevant to the execution of the order." This may well point to the future for securities lending.

From selecting an agent lender to reporting for entirely different regulatory purposes such as ERISA, best execution concepts could ultimately drive a wide range of beneficial owner and agent lender decision making. An analogy is seen in the competitive, analytically driven way that equity retail brokers select their trade execution venues.

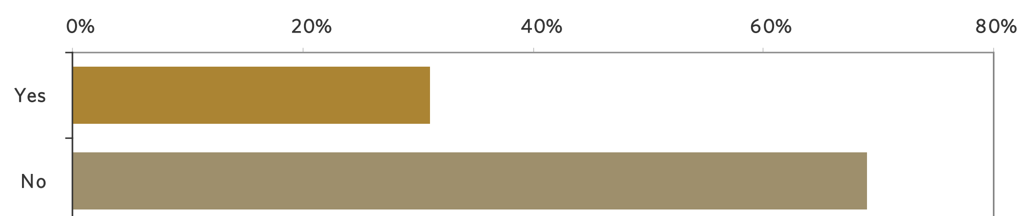
There are a few tools today for agent lenders to know exactly what intrinsic value is for a given security, and the situation is gradually improving. Agents are using internet-based auction platforms, data aggregators and their own analytics. A desire for increased transparency may also spur the development of electronic trading marketplaces and data aggregation for impartial benchmarking, though agent lenders themselves should be sufficiently involved in the market to make their own assessments as well.

Chapter 3: Optimizing Collateral

While earning interest from the intrinsic value of a securities loan is seen as a healthy activity, a group of lenders has been very distressed by losses in their collateral management activities over the last year. These institutions have moved their collateral programs to less risky asset classes in reaction to the credit crisis, and are capturing an interest rate close to LIBOR or Federal Funds but not much else. In our 2009 survey, most institutions had already migrated towards a conservative portfolio or were moving in that direction. This has not meant a wholesale retreat from the market however; only 31% of funds in our survey changed their securities lending behavior as a result of collateral losses. For their part, agent lenders have worked to resolve liquidity problems, though some have been able to move faster than others subject to each agent's particular circumstance.

Figure 6:

Have collateral losses or impairments altered your securities lending activity?



Source: Finadium Institutional Investor Survey 2009

The credit crisis has also driven changes in the structure of collateral management accounts. As perceived by the US beneficial owner community, the most trouble last year occurred in unregulated asset pools that invested in longer term assets as opposed to separately managed accounts with risk parameters that were specifically designed for the lender. Typically, pools that adhered to Rule 2a-7 of the Investment Company Act of 1940 followed stricter guidelines for quality, maturity and duration, and performed better than pools that did not follow the guidelines.

With some caveats, unregulated pools that allow longer term investments are now seen as unwelcome choices compared to separate accounts or funds that adhere to 2a-7 guidelines. Commingled funds may also benefit smaller clients in ordinary times, but are less flexible under distressed market conditions.

In the US and Europe, both asset holders and agent lenders are debating cash collateral levels for loans. Currently acceptable cash collateral levels for equity loans are 102% in the US and 105% in Europe. For a hard to borrow security, should an equity have 105% or 110% collateral or should the collateral depend on the volatility of the individual security? Should collateral vary for different counterparties at different total borrowing levels? We expect a more sophisticated collateral regime to emerge that draws a finer distinction between the risks of different types of loans.

As the needs of borrowers and lenders in collateral management becomes more complex, non-cash collateral has taken a more central role. In the last year, the balance sheets of major prime broker borrowers have been greatly strained. As a result, brokers are more interested than ever in providing non-cash collateral to securities lenders. In Europe, non-cash collateral has long been an industry standard. In the US, acceptance of non-cash collateral is being driven by brokers and custodians; this is not necessarily bad from a beneficial owner's perspective, just different.

Taking non-cash collateral means that the lender will accept a fee for their securities loan instead of relying on a combination of intrinsic value and cash collateral returns. With non-cash collateral, lenders avoid any potential for trouble in cash collateral reinvestments, including interest rate, credit and liquidity risk. Over time, as competition for collateral investments increase and lenders chase for yield, non-cash collateral provides diversification and a more consistent expectation for securities loan returns.

Non-cash bears its own risks as well. Non-cash transactions are not necessarily covered by an agent lender's indemnity agreements, although this may vary by agent and agreement. There is also a question of how accurately securities are priced with a fee as opposed to a popularly recognized rebate rate. Lenders should consider these risks when adopting non-cash strategies.

There is some discussion in the beneficial owner community about separating securities lending from collateral management. There are both pros and cons to this approach, which vary largely by the size and sophistication of the lender. The largest funds with their own fixed income units have explored bringing collateral management in-house while others have looked at third-party asset managers. While this sentiment was brought about by a shaken faith in collateral managers of all sorts, it poses a unique problem in securities lending. By separating collateral management from the lending process, lending agents may be less informed about the requirements of the collateral pool when making loans. This may increase risk for lenders. Those deciding to go in this direction will need to form a strong partnership with their collateral manager to ensure successful asset/liability management.

Chapter 4: The Evolving Role of the Agent Lender

In the midst of this increased attention to the risks and rewards of lending, selecting an agent lender has become a more important decision than ever before. Agent lenders themselves must also recognize their new, more complex roles, where traditional relationships may matter less than the ability to execute a single loan at a favorable rate with appropriate levels of both counterparty and collateral risk.

A greater attention to risk will translate into closer working relationships between asset holders and agent lenders, where the agent becomes more like an equity agency brokerage and less like utilization managers. This is already occurring as brokers can no longer commit large portions of their balance sheet to general collateral borrowing and must instead focus on the immediate needs of their underlying clients. This dynamic means less lending overall but also a heightened focus on the value of specific securities in the market on any given day. Agent lenders will be the only party that understands both the loan component and the asset holder's collateral liquidity requirements.

Besides their role as risk managers, agent lenders will continue to offer various forms of stock redelivery indemnification against losses for their lending clients. Indemnification is an important service but one that is not always well understood in the lending community. In many cases, agent lender indemnification[2] ensures that a beneficial asset holder will always get their security back, regardless of what happens to the counterparty.

On the other hand, indemnification does not protect against losses in collateral management programs. This has been a contentious issue, particularly in 2007 and 2008 as collateral has lost value due to SIVs, Lehman Brothers credit, mortgages and other assets that, at least in the short term, have lost value. It has also been a source of confusion for some beneficial asset holders, who had perceived that indemnification would cover all aspects of their lending programs. Typically operational risk and borrower risk is owned by the agent while the collateral reinvestment risk is owned by the beneficial asset holder. For their part, agent lenders have endeavored to communicate all risks (operational, borrower and collateral reinvestment risk) inherent in lending.

Going forward, indemnification will continue to be an important part of an agent lending program but must be clearly understood and defined. Protection from counterparty risk will encourage some participants to keep lending, while concerns about collateral may reduce the amount of assets on loan or will ensure that lenders put their collateral only in the most risk-free investments. Indemnification clauses will also make lenders aware of the strength of their agents; if an agent bank is on unsure financial footing itself, beneficial asset holders must be certain that agents are able to provide the indemnification they promise in times of crisis.

Agent lenders have another role to play as well. As beneficial owners of securities look at multiple investment activities, a range of opportunities arise to incorporate loans into other investment strategies and vice-versa. These may include using loans to facilitate single stock derivatives such as single stock futures, contracts for differences or options, or agent lenders may seek to overlay derivatives on baskets of loans to control for risk. This evolution will require both clients and agents to look at the agent lending business in a new light.

The increased specialization of securities lending agents along with an increased focus on the intrinsic value of a securities loan means that more sophisticated agents are likely to win business from bundled service providers with undifferentiated product lines. An analogy is again equity trading; asset holders do not necessarily trade with a custodian simply because they hold the assets and post-trade allocations are easier but because a specific business offering from the custodian is superior. Equity investors must also decide whether or not to trade on a proprietary basis with their brokers, a situation that some of the large lending agents actively avoid. Securities lending is coming to a similar place.

2 Some indemnities may be limited to certain types of events (e.g. counterparty solvency) while others exclude certain types of collateral deficiencies (e.g. losses in value of non-cash collateral)

Chapter 5: Major Trends for 2009 and 2010

The next several years will mark major changes for the securities lending industry. From regulators exploring their options to the growth of embryonic electronic markets, participants in the lending industry should expect business as usual to become business in transition.

Regulatory Changes for the Lending Industry

Securities loans are an ill-defined category in financial markets. Not quite cash nor a derivative, they comprise an OTC market unto themselves. Regulators have not yet successfully defined securities loans whether as an investment product, a derivative or a back office settlement function.

Regulators globally are inching closer to placing securities lending in a firm home. In the US, the move towards central clearing for OTC derivatives could encompass securities loans as well. While some loans may still be characterized as a bilateral swap, others would likely be liquid enough to fit the definition of an OTC derivative. At the same time, traders in securities lending do not yet require a Series 7 or other registration as a financial services professional; this too could change.

The US government has reason to be concerned about market structure in securities lending; it is a major investor in several firms with exposure to securities lending and collateral management. Notably, AIG managed its own securities lending and collateral management portfolios; no custodians or agent lenders were involved with investment decisions. Going forward, regulators want to avoid the potential for any similar losses of both faith and capital.

In Europe, national regulations on securities lending overlap and in some cases contradict European Community-wide directives. Under MiFID, best execution does not need to be proved for securities lending although collateral reinvestments may need evaluation. The UK's Financial Services Authority however allows pensions to be involved in securities lending specifically because it is considered an investment activity. However, investment activities that involve trading in liquid markets must prove best execution under MiFID. These types of issues will still take some time to resolve.

The main concern for regulators in Europe and elsewhere has been on short selling. While the events of 2008 produced a shock response of banning short selling, most regulators are now aligned that legal short selling is beneficial for their markets and in fact a key contributor to market liquidity. A recent paper from the International Organization of Securities Commissions (IOSCO) has drawn broad support for regulated short selling including from the US Securities and Exchange Commission.

Regulators are not only interested in liquidity; they are also beginning to think of securities lending rates as both a market to be regulated and as a source for identifying trading irregularities in underlying products. A sharp spike in a loan rate the day before a corporate announcement, for example, could suggest information leakage. While there is no firm evidence to support specifics, regulators want to be overly certain that trading strategies including options, contracts for differences and securities loans do not impact corporate voting or other actions of a traded firm. These possibilities could harm average investors and damage a market's reputation for fairness and integrity; regulators will go far to avoid this happening.

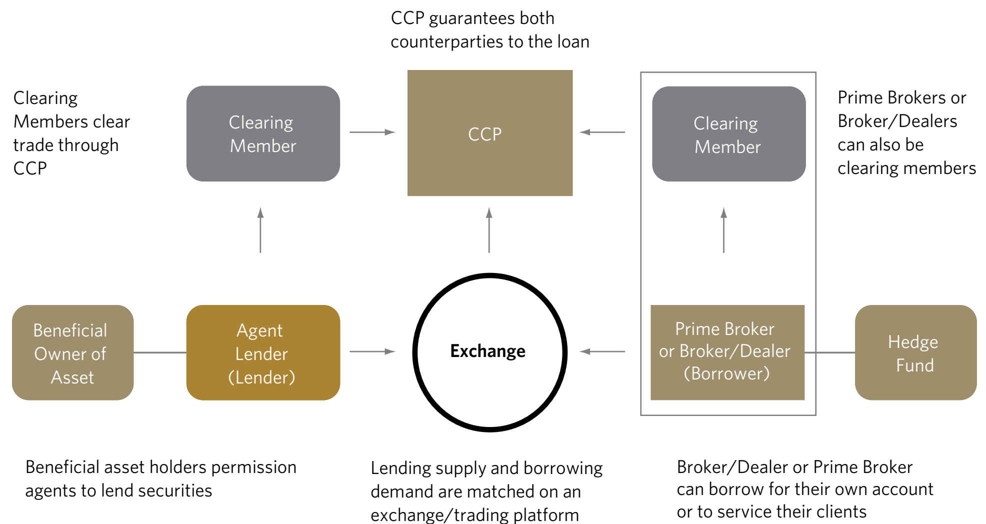
Exchanges, Central Credit Counterparties and Prime Brokers

Several external developments are occurring that may ultimately transform securities lending into a more transparent marketplace. The emergence of electronic securities lending marketplaces, while still at the very beginning stages, could potentially provide lenders and borrowers with a central meeting place for loan transactions. At the same time, contractions in the prime brokerage industry have concentrated credit risk. These trends may encourage beneficial owners to look at exchanges and central credit counterparties as a potential solution to several problems at once if they are able to achieve critical mass.

Several electronic securities lending marketplaces look to rely on central credit counterparties, making bilateral credit relationships a thing of the past. The basic notion of a central credit counterparty (CCP) is that one organization, typically a major clearinghouse or central securities depository, provides every one of its clearing members with its full credit backing for all transactions. This should effectively eliminate counterparty risk in a lending transaction. Advocates of CCPs note their wide industry participation in other markets, such as LCH.Clearnet for European repo and the Options Clearing Corporation for US options. Single stock futures, an exchange-traded product with similarities to securities loans, are already traded and cleared using CCPs.

Figure 7:

Central Credit Counterparties in Securities Lending



Source: BNY Mellon Asset Servicing

Concurrently, lenders have become concerned that a reduction in the number of prime broker borrowers has increased concentration risk. If only a dozen or so brokers are borrowing securities, even the most conservative restrictions on loan concentration could yield higher than desired ratios. A CCP would significantly mitigate this concern, allowing lenders to increase the proportion of their loans going to any one borrower with no additional concern of credit risk.

Critics of CCPs note that excessive stress could cause the whole system to fail. While this has never happened in practice, using CCPs for large, new and untested markets creates fresh opportunities for a breakdown. There are additional costs for the CCP service as well, and it remains to be seen if the lending community will adopt these venues over traditionally negotiated markets. The most likely outcome is that both central and bilateral markets will coexist for some time.

The introduction of a CCP has multiple impacts on agent lenders. On the one hand it reduces their importance as indemnifiers of loans; a central credit counterparty fills that role as well. On the other hand, agent lenders become more important as market specialists and traders; it is not viable for asset holders to monitor market structure and daily prices at their current staffing levels. Agent lenders will remain the asset holder's most important access point to both bilateral and centrally cleared credit markets.

Glossary

2a-7 Funds – collateral management accounts regulated under rule 2a-7 of the Investment Company Act of 1940

Agent lender - a party authorized by a beneficial asset holder to lend out securities held in custody

Basis point - One one-hundredth of a percent or 0.01%

Beneficial asset holder – the owner of a fully paid for security

Best Execution – quantitative proof that an agent or trader obtained the best available price in the market

Central credit counterparty – a central organization that provides credit guarantees to all participants in a securities marketplace

Collateral - Securities or cash delivered by a borrower to a lender to support a loan of securities or cash

Collateral Management – investing the collateral received in exchange for a securities loan in a variety of instruments

Commingled Funds/Accounts – a collateral management account shared by multiple beneficial asset holders

Contract for Differences (CFD) - A futures contract that enables investors to take a long or short position in a security. Writers of CFDs may hedge by taking positions in the underlying securities creating demand for borrowing

Electronic Marketplace – a venue that replaces the traditional phone, email or instant message-based business of securities lending with a trading screen

General collateral – a security with a rebate rate close to Federal Funds, LIBOR or similar benchmark. Any security with low demand relative to available inventory is likely to be classified as general collateral

Hard to borrow – a security with a rebate rate markedly below the cost of easy to borrow, general collateral securities. A security that is in high demand is likely to be classified as hard to borrow

Indemnification – Some indemnities may be limited to certain types of events (e.g. counterparty solvency) while others exclude certain types of collateral deficiencies (e.g. losses in value of non-cash collateral)

Intrinsic Value – the return on a securities loan excluding the benefit of active collateral management

MiFID - The Markets in Financial Instruments Directive (MiFID) is a European Union law which provides a harmonised regulatory regime for investment services across the 30 member states of the European Economic Area (the 27 Member States of the European Union plus Iceland, Norway and Liechtenstein). The main objectives of the Directive are to increase competition and consumer protection in investment services

OTC Derivative – a securities transaction between two counterparties that relies on a bilateral credit relationship and no central clearing agency

Separate Account - Separate account is a segregated accounting and reporting account that typically allows an investor to direct investments according to his/her individual risk tolerance, and desire for performance

Utilization – the percentage of a portfolio out on loan

Acknowledgements

We sincerely thank the following for their contributions to this paper:

Kathy Rulong,
Executive Vice President,
Global Securities Lending, BNY Mellon Asset Servicing

William P. Kelly,
Managing Director,
Global Securities Lending, BNY Mellon Asset Servicing

Rob Coxon,
Managing Director,
Global Securities Lending, BNY Mellon Asset Servicing

Hozaifa Arsiwala,
Managing Director,
Global Strategy, BNY Mellon Asset Servicing

Harry Jin,
Managing Director,
Office of Innovation, Bank of New York Mellon

Vipul Pal,
Vice President,
Office of Innovation, Bank of New York Mellon

The Bank of New York Mellon

BNY Mellon Asset Servicing offers clients worldwide a broad spectrum of specialized asset servicing capabilities, including custody and fund services, securities lending, performance and analytics, and execution services. BNY Mellon Asset Servicing provides services through The Bank of New York Mellon and other related companies.

For more information, regarding The Bank of New York Mellon Securities Lending capabilities, please contact:

North America

Tom Daniels +1 412.236.9189 tom.daniels@bnymellon.com

Europe, Middle East, & Africa

Mark Tidy +44(0) 20 7163 5525 mark.tidy@bnymellon.com

International

Chip Davy + 1 212.804.3002 chip.davy@bnymellon.com

The Bank of New York Mellon Corporation is a global financial services company focused on helping clients manage and service their financial assets, operating in 34 countries and serving more than 100 markets. The company is a leading provider of financial services for institutions, corporations and high-net-worth individuals, providing superior asset management and wealth management, asset servicing, issuer services, clearing services and treasury services through a worldwide client-focused team. It has $20.7 trillion in assets under custody and administration, $926 billion in assets under management, services more than $11.8 trillion in outstanding debt and processes global payments averaging $1.8 trillion per day. Additional information is available at **www.bnymellon.com**

All data as of 2nd Quarter 2009.

Finadium LLC

Finadium is a research and consulting firm focused on financial markets. In its research practice, the firm assists brokers, custodians, hedge funds, private equity and technology firms with understanding the market for alternative asset services and in maximizing the effectiveness of their resources. Finadium research is available on a subscription basis. Finadium also conducts consulting assignments on credit, risk, securities lending, and new product development for the financial markets industry. For more information, please visit our website at www.finadium.com.

Josh Galper Managing Principle Finadium +1 978.318.0920

BNY MELLON
ASSET SERVICING

© 2009 The Bank of New York Mellon Corporation. All rights reserved.

The Bank of New York Mellon – Incorporated with limited liability in the State of New York, USA. Head Office: One Wall Street New York, NY 10286, USA. London Branch registered in England & Wales with FC No 005522 and BR No 000818 - Registered Office at One Canada Square, London E14 5AL, authorised and regulated in the UK by the Financial Services Authority.

This report, which may be considered advertising, is provided with the understanding that it is for informational purposes only and does not constitute the rendering of legal, tax, accounting or other professional advice by Finadium LLC, The Bank of New York Mellon or any of their affiliates. Finadium LLC and The Bank of New York Mellon do not guarantee the accuracy of any information contained herein and cannot be held liable for any errors in or reliance upon this information.