

October 28, 2010

## **Indicators of Trends in Dealer-Intermediated Financing and Leverage**

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### ***Summary***

This memorandum seeks to draw information from a variety of sources, including conversations with market participants, market surveillance data, and supervisory data, to present a composite picture of the leverage currently being provided through dealer-intermediated transactions.<sup>1</sup> Overall, these indicators suggest a broad but modest increase in the use of dealer-intermediated leverage by market participants since the beginning of September. The appetite for additional leverage on the part of most market participants appears to remain muted, however, as was the case during most of the summer, and indeed many investors are maintaining significant unutilized borrowing capacity under existing financing facilities.

Placing these developments in a longer-term context, while the availability and use of leverage appears to have increased somewhat since reaching a nadir in mid-2009, a variety of indicators suggest that leverage generally remains below the levels reached prior to the crisis. A modest upward trend in dealer-intermediate leverage visible during the early months of the year reversed rapidly in May and early June amid concerns about the possible implications of the European fiscal strains. Over the summer, the use of leverage by important classes of investors—especially hedge funds—changed little. Since September, as concerns about the European fiscal situation and possible risks to the European banking system abated, the willingness of levered investors to establish and maintain risk exposures has increased somewhat, reportedly reflecting in part expectations of additional monetary policy accommodation, pressures to boost returns

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<sup>1</sup> For a detailed discussion of the relevance of this issue for financial stability analysis, see the memorandum “Indications of Trends in Financial System Leverage,” by Matt Eichner, Michael Holscher, and Fabio Natalucci, which was sent to the Committee on August 6, 2010. That memorandum also discusses the importance of considering multiple indicators when seeking to develop a meaningful picture of aggregate dealer-supplied leverage.

prior to reporting results for the year, and somewhat more clarity with respect to certain regulatory changes. However, the most significant financial market flows during the period have reportedly been driven by the appetite of unlevered investors for fixed-income securities, including developed market corporate debt and syndicated loans as well as, more recently, emerging market bonds—a phenomenon that market participants have referred to as “search for yield.”

Our overall assessment is that leverage has risen moderately since the beginning of the year, but the potential for a rapid or disorderly deleveraging appears to remain limited at this point. Supporting this general view are developments in several areas over the intermeeting period:

- Prime brokerage debits have trended higher since late summer.<sup>2</sup> Hedge funds have displayed some renewed appetite for risk, and thus profited from market trends over the past month, notably from the strong returns on equities. Preliminary third-quarter performance appears comparatively strong by post-crisis standards, with the median hedge fund returning 3.6 percent for the period and only 14 percent of funds reporting losses.<sup>3</sup> However, most hedge funds reportedly remain cautious relative to pre-crisis norms, generally utilize only a fraction of the capacity provided by their lenders, and continue to maintain significant amounts of cash.
- Financing for higher-quality assets appears to be broadly available, with the maximum term of funding approaching six months. Market participants also report, as they did in September, increased willingness by dealers to lend against distressed assets and other less-liquid collateral, including bank loans and structured products. In particular, the availability of total return swaps (TRS) referencing bank loans reportedly increased, and several new transactions types are being explored that would similarly facilitate the funding of less liquid assets. But investor demand for such financing remains limited at present.

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<sup>2</sup> Prime brokerage debits are credit extensions by broker-dealers, typically to hedge funds, to finance the purchase of securities on margin.

<sup>3</sup> These preliminary returns are computed with approximately 2400 of the almost 3600 hedge funds in the TASS database reporting.

- Median haircuts applicable to several assets, including high-yield corporate bonds, Treasuries, and prime residential mortgage-backed securities (prime RMBS) declined modestly, on net, over the intermeeting period. These declines represent the first reported reductions in median haircut levels since the first quarter.
- By contrast, median haircuts for Alt-A mortgage-backed securities (MBS) increased in October. While this increase is coincident with concerns about the legal uncertainties regarding ownership and transfer of the mortgage loans underlying such securities, several market participants reported that they had seen no indication that the recent questions about servicing had affected securities financing markets.
- Activity in the triparty repo market continued to increase, with total average daily volume for September reaching a new post-crisis high despite a decline later in the month, as generally occurs at quarter end. The volume of securities lending reached a high for the year and the post-crisis period in October, continuing the rise seen through the summer.
- Unlevered investors including pension funds, mutual funds, and insurance companies, apparently remain the driver of demand in the corporate bond and loan markets. In their effort to meet nominal return targets, they are also reportedly increasing emerging-market exposure, notably by investing in local-currency-denominated government bonds and, more recently, equities.
- New issue activity in the syndicated leveraged loan market, as well as the volume of transactions in the “pipeline,” has increased in September and October. In addition, market participants have begun to cite a renewal of pressure on terms over the past two months, noting higher leverage, spread compression, and an increased number of transactions motivated by considerations other than longer-term strategic goals—such as dividend recap and sponsor-to-sponsor deals (also called secondary buyouts). But they seem to view the most important protection—the ability of syndicators to adjust the pricing and structure of loans at the borrower’s expense within specified limits to adapt to current market conditions—as still firmly in place.

Although we view the potential for a disorderly deleveraging as limited at this point, several dynamics bear watching going forward: First, the pressure on terms in the syndicated leveraged loan market appears to have returned, and some market participants predict that this pressure will continue to intensify over the coming months. Banks leading syndications, which effectively function as dealers in this market, appear to still enjoy considerable contractual flexibility post-commitment to adjust the pricing and structure of loans at the expense of borrowers to market-clearing levels. But these institutions will possibly become more vulnerable to a change in market sentiment to the extent that competitive pressures lead to a reduction in these protections. Second, important classes of generally unlevered investors (e.g., pension funds) are finding it difficult in the present environment to meet nominal return targets using only their traditional strategies, and are reportedly considering adding riskier financial assets to their portfolios. These investors may also be developing an appetite for leveraged exposure to certain asset classes in which they are already active, and certain segments of the dealer community may be working to satisfy these demands by offering specialized products, such as asset-backed credit lines. Thus, there is potential for a gradual increase in the use of leverage by previously unlevered investors and through unfamiliar channels, which poses challenges to those in the dealer community and elsewhere seeking to monitor the overall degree of leverage in the financial system. Finally, there is apparently broad availability of funding to traditionally levered investors such as hedge funds. The operative constraint on risk taking at the moment appears to be uncertainties regarding the economic and financial market environment. To the extent that such uncertainties subside, the degree of leverage employed by such investors could increase quickly.

In the remainder of the memorandum we discuss in greater detail our conversations with market participants and the indicators of dealer-supplied leverage that support our broad assessment of current conditions and the potential for a rapid or disorderly deleveraging.

### *Conversations with Market Participants<sup>4</sup>*

The most recent round of conversations with market participants again emphasized that robust demand by unlevered retail and institutional investors continues to support a high level of new issue activity in the investment-grade and high-yield bond markets. Perhaps motivated by a desire to boost returns in a low interest rate environment, investors appear to be taking increased risk. They have become active in markets for local-currency-denominated government bonds, particularly bonds issued in Asia.<sup>5</sup> More recently, their interest has begun to expand to the equity markets in these countries. These inflows into emerging market economies differ from those seen in the mid-2000s, which were driven by levered investors such as hedge funds. Some jurisdictions referencing a “macroprudential” approach to financial regulation have begun to implement capital controls to stem inflows, presumably to reduce the potential negative effects of a sudden reversal in flows and limit currency appreciation. However, these measures have been relatively modest to date, and market participants believed that their effectiveness would be limited. They noted that further monetary policy accommodation in the United States would likely move additional countries to consider similar steps.

In discussing the activities of institutional investors, market participants note that the ability to generate strong returns without the use of leverage appears limited at this point given current asset valuations. For example, investors found opportunities to purchase syndicated loans and non-agency MBS at distressed levels during 2009 and profited handsomely as markets recovered. At this point, however, the supply of such “legacy” assets, and hence opportunities to generate significant returns without the use of leverage, is largely exhausted.

Therefore, market participants suggested that there are some investors with sufficiently flexible mandates who are considering establishing levered positions in assets such as bank loans, structured products, and convertible bonds. A number of dealers are reportedly developing products tailored to such investors, including asset-backed

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<sup>4</sup> This section represents a distillation of discussions with senior business heads, risk management personnel, and economists at 10 firms, representing both the investor and dealer perspective.

<sup>5</sup> Although their purchase of these instruments is commonly described as a “carry trade,” no leverage is actually employed.

revolving credit lines and actively-managed investment structures similar to CLOs. Since the assets involved cannot, like more liquid fixed income and equity instruments, be funded on a secured basis with external counterparties, dealers must allocate a portion of their balance sheet to support these activities, and some appear willing to do so.

Market participants described hedge funds as having been more willing to take on risk over the past two months due to a number of factors. These include an abatement of concerns about sovereign defaults and European banks, expectations of additional longer-term asset purchases by the Federal Reserve, and pressures to achieve return targets by year-end, including those upon which manager compensation are based. In particular, market participants cited increased willingness on the part of hedge funds to add long equity and short dollar positions, which have produced gains over the past month. Nonetheless, funds pursuing relative value equity strategies have reportedly found that the environment remains challenging, with high correlations in returns across equities limiting their ability to exploit their prowess at identifying differential performance of particular issuers or sectors. More generally, despite the fact that prime brokerage debits have risen since Labor Day, reflecting an increase in activity, most hedge funds reportedly remain cautious and are maintaining significant cash positions. Some market participants predicted that many of the equity and macro funds that have profited from recent foreign exchange and equity trades will seek to lock in those gains and adopt a more passive posture by Thanksgiving. Others, however, viewed the pressure to generate a respectable annual return as likely to manifest itself through the remainder of the year, with managers seeking to maintain risk positions. Longer term, market participants note that the hedge fund business model, which focuses on relative returns, faces significant challenges in an environment in which many investors are very focused on meeting their absolute return goals.

A significant number of hedge funds, particularly those pursuing mandates consistent with exposure to macroeconomic events, have reportedly positioned themselves for additional monetary policy accommodation in the United States. Such a view has been expressed, *inter alia*, through short positions in the U.S. dollar, by extending the duration of fixed income portfolios, and by gaining exposure to equities. To the extent that Federal Reserve actions or communications were interpreted as

differing significantly from current market expectations, market participants we spoke with saw a possibility of a repricing of some assets and deleveraging by hedge funds.

Market participants broadly reported that the pressures on terms evident in the syndicated leveraged loan market earlier in the year, which had abated following the events in Europe during May and early June, have now returned. Investor appetite for the loan asset class is said to remain strong, among both retail and institutional investors, and a number of deals, including some LBOs, have been recently brought to market successfully. Market participants note that the leverage in these deals has risen, and also that certain transactions involving the financing of dividend payments to a financial sponsor or the sale of assets from one financial sponsor to another have become more prevalent.<sup>6</sup>

While these trends point to investors assuming greater risk, protections for the lead banks in syndications, which facilitate initial distribution, have remained relatively robust in the leveraged loan market. Market participants noted that commitment periods, beyond which arrangers are no longer exposed should the transaction not come to fruition, remain limited to six months. In addition, syndicated loans continue to incorporate provisions that allow the arrangers flexibility within specified limits to adjust pricing and structure at the expense of the borrower to successfully place the deal with investors. Such “flex” represents a key protection against significant unwanted inventory and losses should investor appetite for leveraged loans diminish unexpectedly. A large inventory of “hung” deals was a hallmark of the 2007-8 crisis at many firms that operated as dealers in the syndicated loan market, and was a significant driver of losses in several cases. Several market participants indicated that their level of concern about conditions in the leveraged loan market would rise appreciably if commitment periods extended, their flexibility to adjust pricing and terms began to erode, or both.

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<sup>6</sup> In general, a financial sponsor, as distinct from a strategic purchaser, acquires a firm or a corporate asset with the intent to close its investment after a finite period, either through sale to a strategic buyer or through capital markets transactions, for example involving the issuance of debt or equity securities.

### ***Indicator of Hedge Fund Leverage***<sup>7</sup>

As shown by the line in the upper-left panel of Exhibit 1, a broad indicator of hedge fund leverage moved back toward its longer run average level in August, probably reflecting the stabilization of industry performance during July. The indicator had declined dramatically in May and June, approaching its 2008 nadir.<sup>8</sup> These rapid changes in the indicator reflect in part the fact that the indicator is computed using data on long-short equity funds. Funds pursuing this strategy appear to have been particularly affected by events in May and June, and are generally able to adjust positions more quickly than funds pursuing strategies in less liquid markets.

### ***FINRA Portfolio Margining Debits***

The exhibit provides an overview of trends in the funding of securities, primarily equities, by prime brokers on behalf of sophisticated levered investors, notably in the hedge fund community, eligible for portfolio margining. Data for the third quarter indicates that the volume of such financing has risen, approaching its post-crisis high reached at the end of the first quarter. Currently, twenty-two U.S. broker-dealers offer portfolio margining programs to institutional clients who meet certain standards for financial and operational capacity.<sup>9</sup> Total portfolio margining debits at the close of the third quarter stood at \$173 billion, compared to first quarter and second quarter levels of \$181 billion and \$157 billion, respectively. Taking a somewhat longer view, debits at the

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<sup>7</sup> This indicator does not capture the exact amount of leverage used by hedge funds, but rather focuses on trends in the use of leverage over time. This measure—the median ratio of the standard deviation of returns for levered funds relative to that for unlevered funds—compares return volatility for funds that reported having used leverage with return volatility for funds that reported not having used leverage. Unfortunately, information about the use of leverage is broadly available only for hedge funds that report using a long/short equity strategy (more than 600 funds out of about 3600 funds in the TASS database). It is unclear whether leveraging and deleveraging behavior among long/short equity strategy funds is representative of the industry as a whole.

<sup>8</sup> One possible explanation for the seemingly large magnitude of the June drop may be an unusually wide distribution of returns reported by unlevered funds.

<sup>9</sup> Since mid-2008, FINRA rules have permitted broker-dealers to utilize approved models, including those developed by firms for internal risk management purposes and by the Options Clearing Corporation, to compute margin requirements for customer portfolios containing a variety of equity-linked products. Interest on the part of prime brokers and their hedge fund clients in this portfolio margining program, which is implemented under Regulation T, grew considerably following the Lehman bankruptcy, which demonstrated the operational and financial risks of prime brokerage relationships with non-U.S. entities.

depth of the crisis after the first quarter 2009 stood at \$92 billion, and by the end of that year had risen to \$150 billion.<sup>10</sup>

### ***Weekly Report of Dealer Financing and Fails***

Additional information regarding the volume of financing of fixed-income securities obtained from the Weekly Report of Dealer Financing and Fails (also known as the FR2004C) is shown in the upper-right panel.<sup>11</sup> These data point to a modest upward trend in the volume of financing both utilized and provided by dealers over the intermeeting period. After remaining steady for much of 2010, haircuts applied to some collateral types—shown in the panels on the bottom—declined during the past month.<sup>12</sup> In particular, median haircuts applicable to high-yield corporate bonds, Treasuries, and prime RMBS fell, on net. Interestingly, haircuts applicable to Alt-A MBS actually increased over the same period.

### ***FRBNY Buyside Haircut Survey***<sup>13</sup>

Survey responses from buyside market participants pointed to further marginal easing in funding market conditions. Anecdotally, term financing was broadly available and contacts continued to note a modest increase in dealer willingness to extend funding beyond three months, particularly for less-liquid collateral. Contacts indicated that there continued to be some differentiation among counterparties by size, with smaller funds having less access to funding, reflected in both smaller trade size and shorter tenor, than the largest and most established funds. To date, according to buyside respondents, issues related to the ownership and transfer of mortgages have not significantly affected

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<sup>10</sup> While 22 broker-dealers are currently permitted by FINRA to provide portfolio margining to clients, one was granted permission after the fourth quarter 2009, and two more were granted permission in the third quarter 2010. While these three new additions were comparatively small firms, no adjustment has been made to the figures cited prior to their inclusion.

<sup>11</sup> Depicted is the total volume of financing utilized by dealers (the red line) and the volume of financing provided by dealers to clients (the black line). The difference between these two series (the dotted blue line) can be interpreted as broadly reflecting the net financing used by dealers to support inventory and proprietary positions.

<sup>12</sup> Data are obtained from the Federal Reserve Bank of New York's Weekly Survey of Primary Dealers.

<sup>13</sup> "Buyside" in this context refers to the fact that the survey solicits the responses of investors, notably hedge funds, who are the secured borrowers in this market rather than dealers who are the secured lenders.

haircuts for mortgage-backed assets, although some contacts noted the potential in the near term for dealers to demand additional protection in the form of higher haircuts.

***Triparty Repo Market and Securities Lending Activity***

The last two exhibits provide an overview of trends in the triparty repo and securities lending markets.<sup>14</sup> The average daily volume of triparty activity—shown in the upper-left panel of Exhibit 2—grew in July, August, and September, after declining in June. The total average daily volume for September reached a new post-crisis high of \$1.8 trillion before declining at the end of the third quarter. The proportion of higher-quality, Fed-eligible collateral remained stable, after increasing from 81 percent to 83 percent in June.<sup>15</sup> Securities lending activity—shown in the last exhibit—rebounded in October to \$1.9 trillion, approaching the post-crisis high reached in May.

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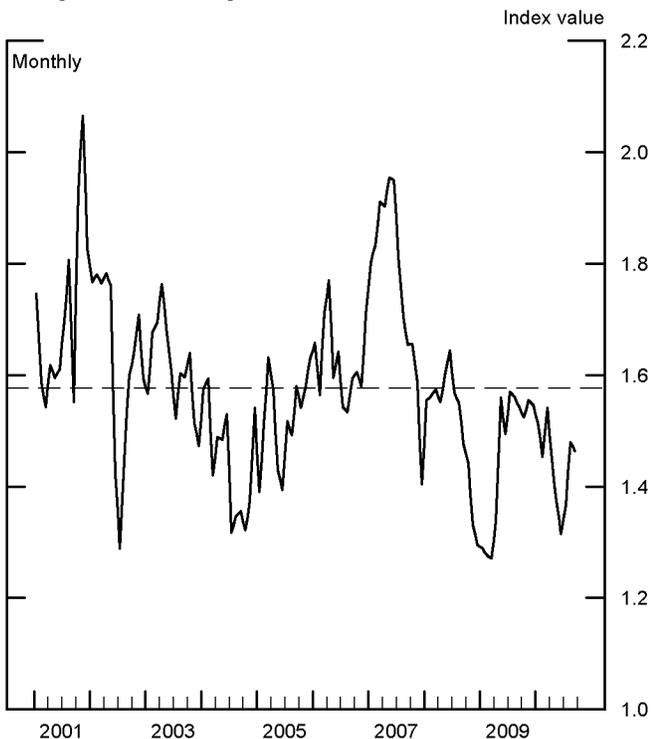
<sup>14</sup> Triparty repo and securities lending data are collected by the Federal Reserve Bank of New York from the clearing banks and custodians, respectively.

<sup>15</sup> Fed- or Fedwire-eligible collateral includes securities issued or guaranteed by the U.S. Treasury, other federal agencies, government sponsored enterprises, and certain international organizations, such as the World Bank.

### Exhibit 1

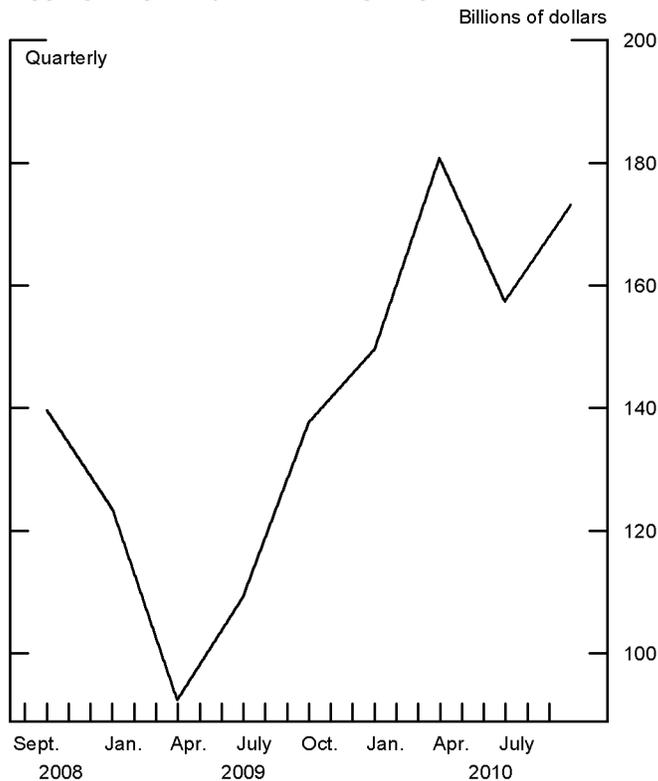
### Indicators of Leverage in U.S. Financial Markets

Hedge fund leverage indicator



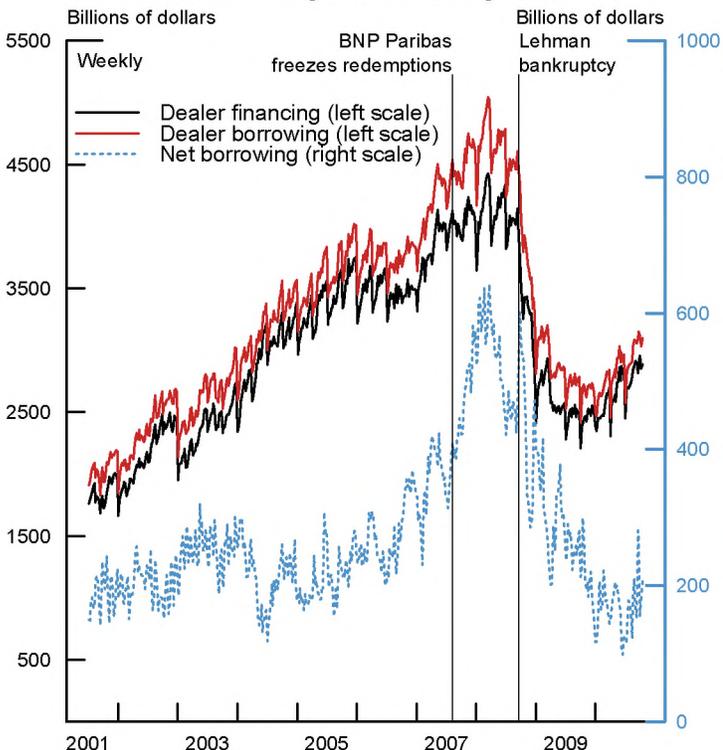
Note. Dashed line represents average value over the time shown. Uses long/short equity funds. Estimated by comparing the standard deviation of returns for a pool of leveraged funds and unleveraged funds with highly correlated returns. Data are through September 2010.

Aggregate gross portfolio margining debits



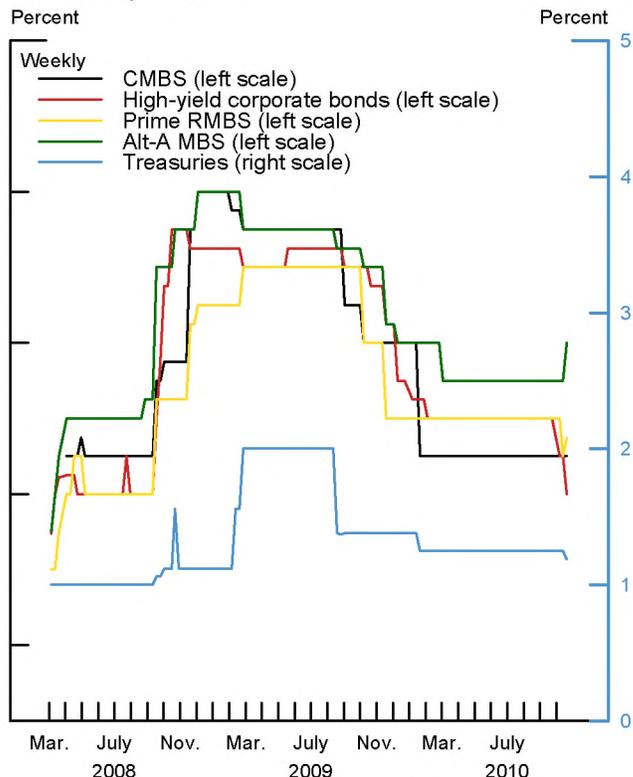
Source: FINRA.

Total dealer financing and borrowing



Note. Data are through October 13, 2010. Source: FR 2004C.

Median repo haircuts

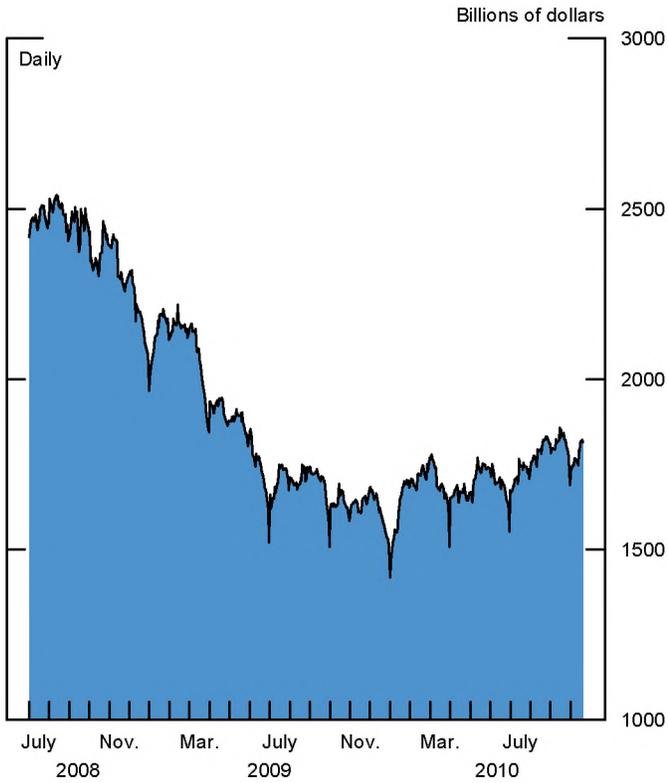


Note. Data for one-month repos are through October 20, 2010. Source: Federal Reserve Bank of New York weekly survey of primary dealers.

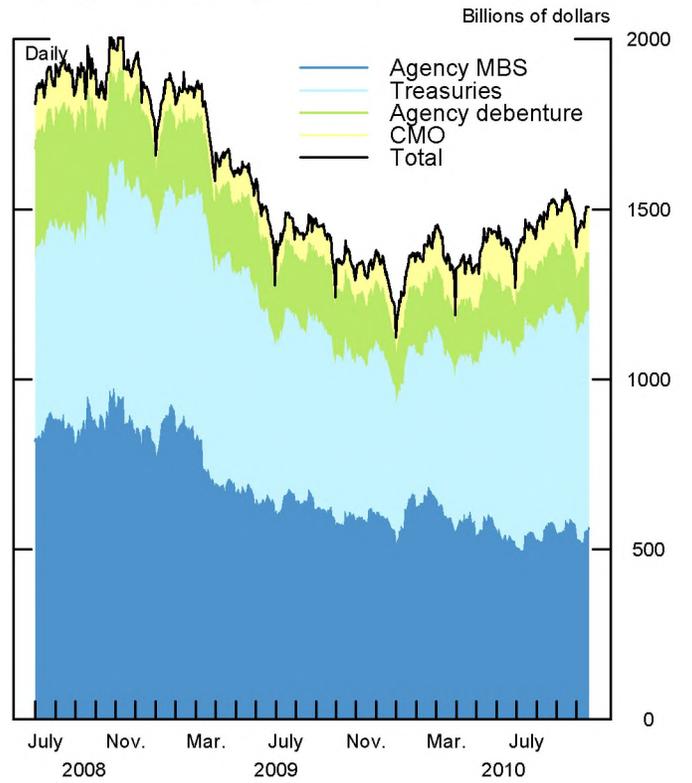
## Exhibit 2

### Tri-Party Repo Market Activity

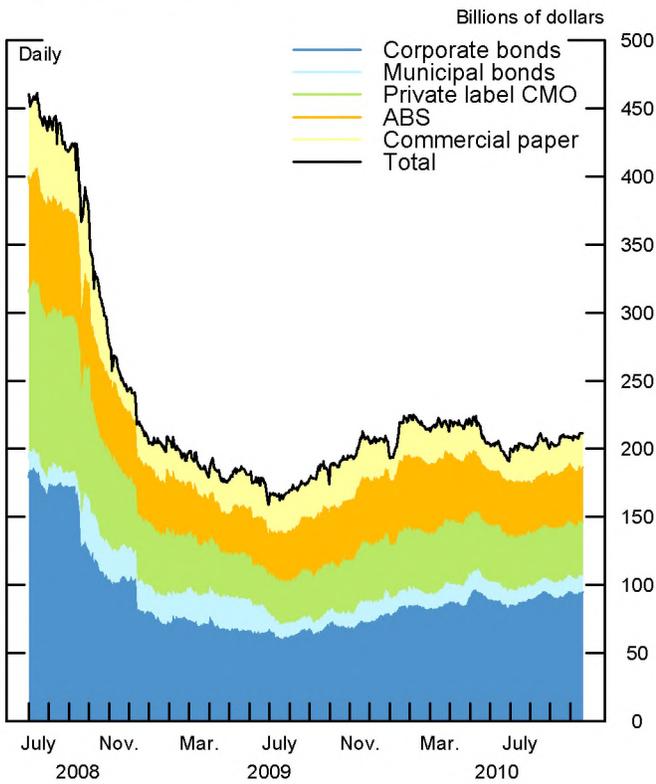
**Total**



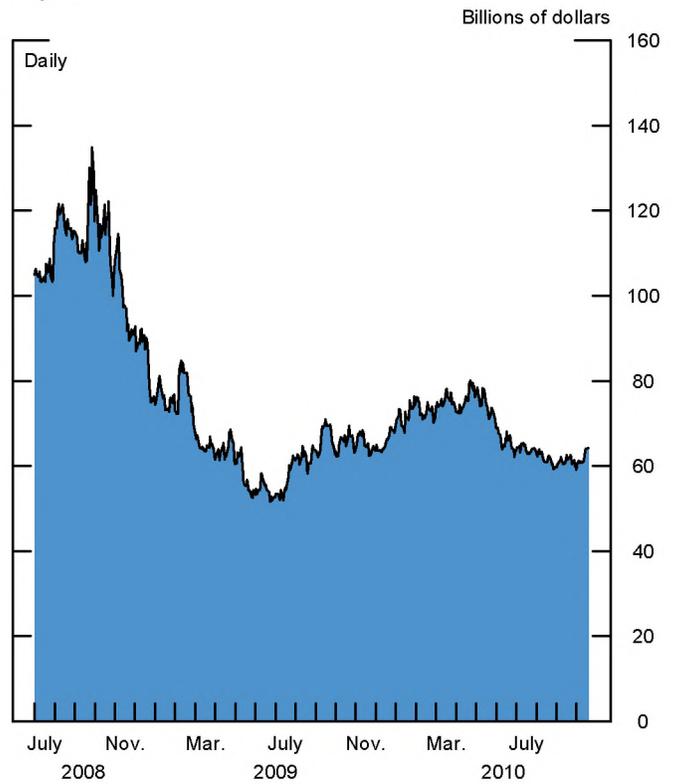
**Agency and Treasury securities**



**Other fixed income**



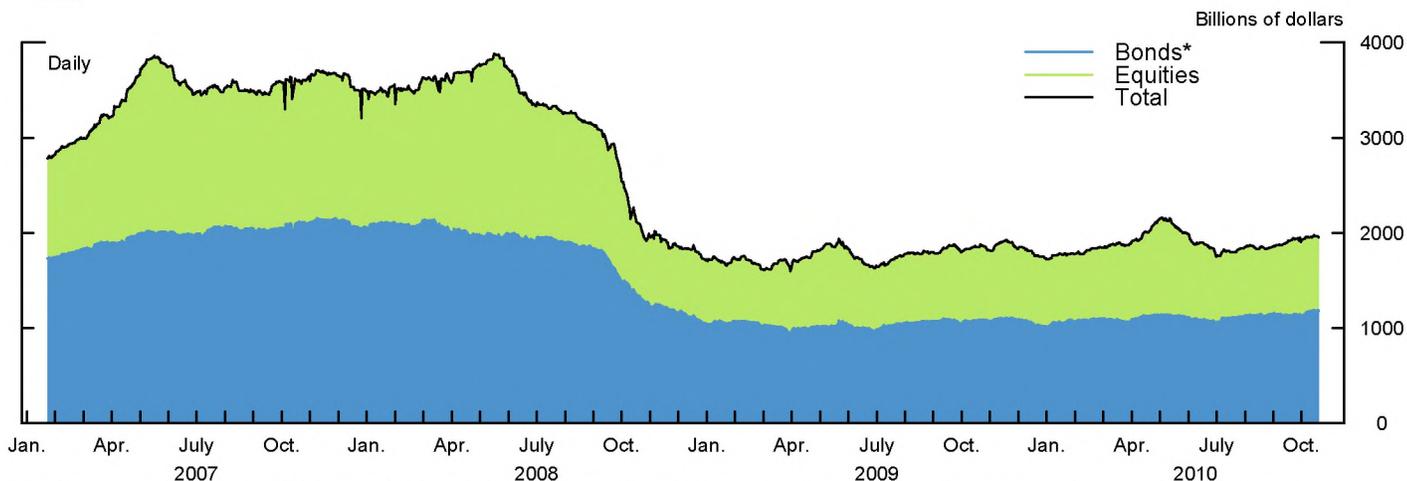
**Equities**



Note. Data are through October 19, 2010.  
Source. Federal Reserve Bank of New York.

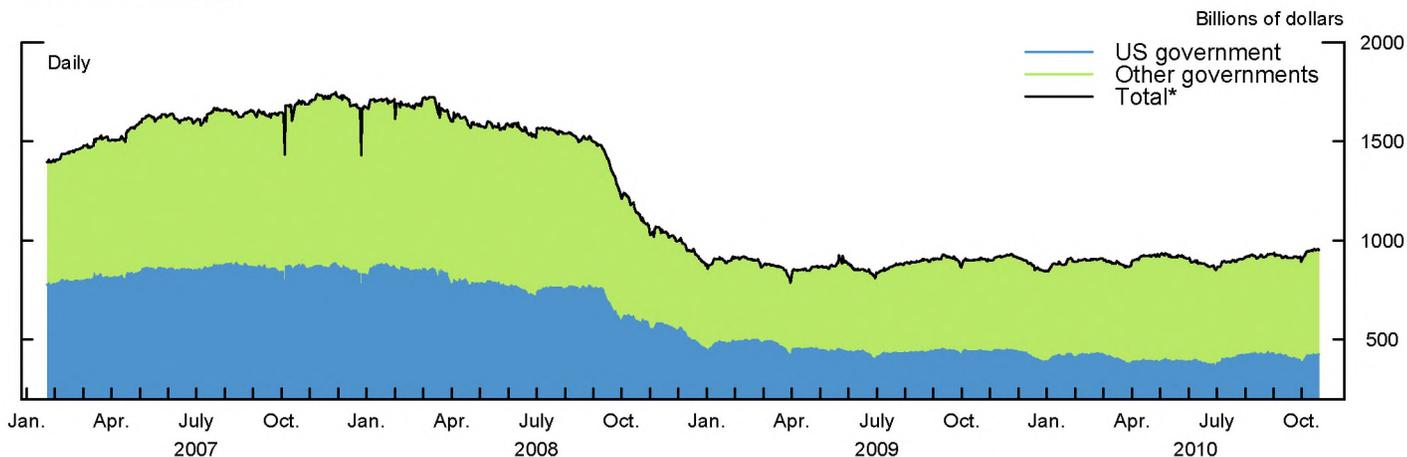
### Exhibit 3 Securities Lending Activity

#### Total



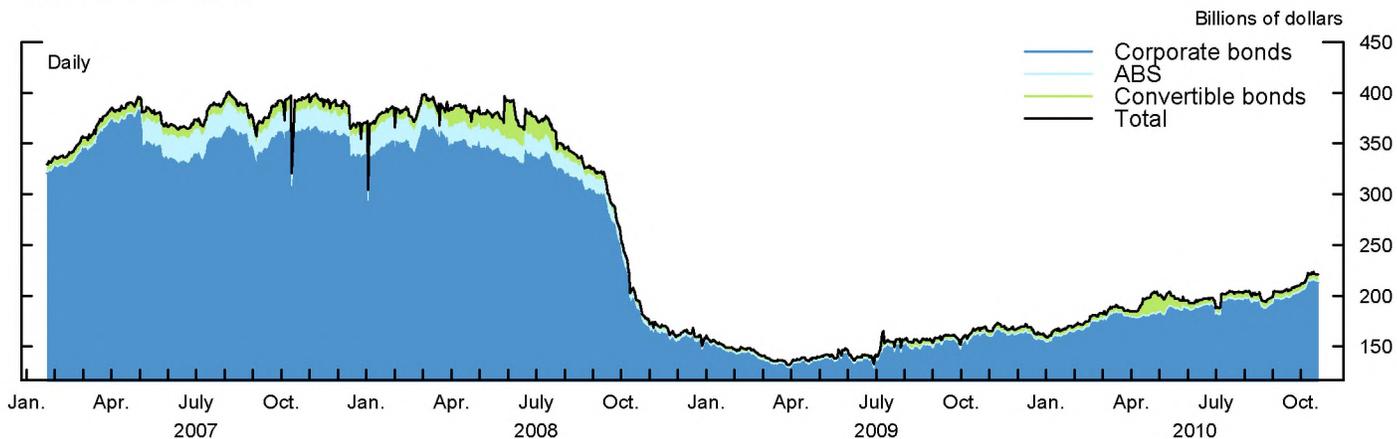
\* Includes corporate bonds, ABS, convertible bonds, US government bonds, the bonds of most Western European countries in addition to Japan, Australia, and Canada, and emerging market bonds.

#### Government bonds



\* Includes US government bonds and the bonds of most Western European countries in addition to Japan, Australia, and Canada. Emerging market bonds are not included.

#### Other fixed income



Note. Data are through October 19, 2010.  
Source. Federal Reserve Bank of New York.