



***“The Impact of Liquidity, Securitization, and  
Banks on the Real Economy”***

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It is a pleasure to be here with everyone participating in the conference, and my fellow panelists and Vice Chairman Kohn.<sup>1</sup>

The financial crisis of the last 20 months highlights the need for better understanding of the links between financial intermediaries, financial markets, and the real economy. Consider the fact that many models of the economy underestimated emerging problems, in part because the financial links to the real economy are, in my view, only crudely incorporated into most

macroeconomic modeling. Indeed, most forecasters did not recognize we were in a recession in the spring of 2008 even though the recession, as now dated by the National Bureau of Economic Research (NBER), began in December 2007. Of course this happens with recessions, but my point is that *even after serious problems in housing and financial markets were revealed*, many forecasters underestimated the size, severity, and length of the downturn. In fact, many analysts and economists were focused on short-term inflation risks in the spring of 2008, when we were entering the most severe recession of the past 50 years.

Part of the reason, I think, relates to three critical features of this crisis I would highlight – features, I would add, that are likely to have a long-lasting impact on financial markets and perhaps on how economists perceive them:

- the first is the increased importance of disruptions to **liquidity**;
- the second involves the significant changes that occurred in **securitization**;
- the third involves **banks** and their role in the economy.

## **1. The Role of Liquidity**

Liquidity risk has received relatively scant attention in academic research. And the Basel II Capital Accord, which focused on a bottom-up assessment of risks at financial institutions, emphasized holding capital for credit risk, market risk, and operational risk. While liquidity risk was acknowledged, it had no explicit treatment in “Pillar 1” of the Basel II framework, and received relatively little attention in other portions of the framework.<sup>2</sup>

Similarly, liquidity receives relatively little focus from most macroeconomists. While it is mentioned in money and banking texts, liquidity is generally characterized as a short-lived

problem that can be handled by effective use of the Fed's discount window. With most liquidity problems short-lived (for example, after the September 11 terrorist attacks), liquidity did not receive that much attention from most economists, financial institutions, or regulators.

But this crisis has been different in that there has been an extended period where bid-to-ask spreads have widened, where conditions have hindered buying or selling in short-term credit markets absent significant price movements, and where there has been a drying up of the ability to engage in various financial transactions that were formerly quite routine and markets that were quite active. I refer to the notion of a "liquidity lock," by which I mean extreme risk aversion by many investors and institutions that fear they will not be able to sell assets in a timely fashion without steep discounts.<sup>3</sup> This makes short-term financing difficult to come by, for even creditworthy firms – including financing for very short maturities, measured in days. At certain points in this crisis, market participants saw few if any bids for even high-grade financial paper that had a maturity greater than one day. Another manifestation was the unwillingness of many of the largest financial institutions to lend to each other – as represented by the very large spread between the London Interbank Offered Rate (Libor) and the overnight index swap rate.<sup>4</sup>

This unwillingness to take credit risk or to lend money other than overnight constrains creditworthy borrowers from undertaking worthwhile projects – and thus has implications for economic growth. And these disruptions have *not* been short-lived; even more than 20 months into the crisis many markets are still not functioning as they did.

Exchange-traded markets seem to have been less disrupted than markets dominated by dealers. This has broader implications for market structure and potential systemic risk – implications that I hope will get more attention from researchers and regulators in the future.

A variety of financial institutions and markets are undergoing significant change as a result of liquidity concerns. Considering our time today I will focus on just one example, changes occurring in the money market mutual fund industry. Money market funds do not generally receive much attention. They receive short-term deposits that are then invested in highly liquid short-term investments. But the size and role of the industry has probably been underappreciated – at the end of the second quarter of 2007, money market funds had \$2.5 trillion in assets, and were major holders of financial and non-financial commercial paper and large certificates of deposit (CD's).

Following the failure of Lehman Brothers, investors in some money market funds that held Lehman securities began to withdraw money. Redemptions rose dramatically. Because of losses on the Lehman securities, the Reserve Primary Fund was unable to maintain the standard \$1 per share current net asset value – they “broke the buck.” This had very significant implications, as did the need of numerous banks to support their money market funds to avoid a similar outcome. For example, because of concern over redemptions, money market funds that were still willing to purchase commercial paper wanted only very short maturities.

As **Figure 1** shows, the overall result was a significant outflow from prime money market funds, which merited a policy response. The Treasury announced a temporary insurance program and the Federal Reserve created two liquidity facilities under its “Section 13-3” authority.<sup>5</sup> Since market participants largely viewed the programs as temporary, there have been significant shifts in the holdings of money market mutual funds. **Figures 2 and 3** show that such funds have shifted their composition materially, away from commercial paper and toward more liquid government securities. In part this represents a change in preferences of investors, who

have shifted assets to government funds, and in part a change in preferences of fund managers seeking more liquid positions. However, the shift has disrupted the commercial paper market, increasing spreads and causing some issuers to rely on the Federal Reserve's commercial paper funding facility. All in all, I suspect that the shift in money-market funds' liquidity preferences is likely to have longer-term repercussions for the medium-term financing needs of firms.

This is just one example of how liquidity issues may have longer run implications. A broader question for economists is how illiquidity could persist for so long. While this is a good topic for future research, I would highlight two interrelated factors. First, much of the illiquidity results from concerns with counterparty risk. Major financial firms were unwilling to trade with other major firms in volume, because of concerns about solvency risk – and the opaqueness of firms made it difficult to ascertain their true financial health. Financial firms and regulators need to consider ways to make entities less opaque. Second, securitization often relied on financial firms to provide liquidity and credit support, and was dependent on investor confidence in ratings. As investor confidence in financial firms and ratings of structured products waned, securitization declined dramatically – and many markets became significantly less liquid, as firms did not want to hold assets they could not securitize.

## **2. The Role of Securitization**

Turning to a second major issue, securitization, I would note that the aforementioned liquidity concerns initially had their roots in *credit* concerns – for example, in worries about the potential of mortgages bundled into securities to go into default. Some of my colleagues have observed that credit worries have existed for centuries – so why, this time, have credit problems

turned into severe liquidity stresses? I suspect that securitization has played a role, in particular the rise of what I have called “surrogate securitization” (where investors were willing to buy debt assigned high credit ratings by rating agencies, to whom they basically delegated due diligence).<sup>6</sup>

With that thought, allow me to discuss securitization, where loans are pooled together and sold to investors. Originally, the securitization market served as a source of financing primarily for home mortgages, but increasingly it was used to finance credit card receivables, home equity loans, and car loans. Because assets were financed by issuing securities directly to the marketplace, many assumed that securitization would provide a *more resilient* source of financing than depending on financial intermediaries. But ironically, the events of this crisis led to a state where securitization has been severely impaired, leading to increases in the cost of financing for assets that could no longer be easily securitized.

**Figure 4** shows the significant decrease in asset-backed commercial paper (ABCP) outstanding. ABCP was frequently sold to money market funds and other intermediaries interested in holding short-term, high-quality paper. ABCP usually was sponsored by commercial banks that provided liquidity, credit support, or both. With the onset of the crisis it became increasingly difficult for such sponsors to place their commercial paper, as potential investors became concerned about both the credit quality of the assets and the credit quality of some sponsors. In addition, changes in accounting rules for off-balance-sheet conduits made this type of financing less economical. As a result, ABCP issuance has significantly decreased.

Similarly, other types of securitization have been under severe stress. As investor demand for structured finance decreased, relatively few securitizations have occurred. **Figure 5** shows the dramatic decline in securitization of home equity loans, credit card receivables,

student loans, and car loans. While there are alternatives to securitization, such as bank lending, this represents a narrowing of financing sources – and in the case of bank loans, has implications for capital requirements.<sup>7</sup> Overall, the cost to borrowers is likely to go up.<sup>8</sup>

More research is needed on the links between banks and the securitization markets, and the structure of securitization. Many securitizations are sponsored by financial institutions, and rely on their credit and liquidity support. As a result, securitization is not as insulated from banking problems as many assumed. Also, lack of confidence in ratings has reduced investor demand. In an environment where investors are less willing to rely on third- party ratings, securitizations will need more transparent structures that allow for easier monitoring of risks.

### **3. The Role of Banks**

Turning to the role of banks, in this crisis large banks have been extended unprecedented support – extensions of deposit insurance, federal guarantees of debt, and equity infusions. The support required to alleviate the crisis suggests that clearly, financial supervision and regulation must be enhanced going forward. In the limited time we have today, we cannot do justice to all the lessons we should draw from recent experience, but I would like to highlight three.

First, *the stress tests* conducted earlier this year were instructive to banks and supervisors. Some banks had difficulty providing the data needed as inputs to the tests – data that would ideally exist as inputs to robust budgeting and risk-management systems. Thus, like the crisis itself, the stress tests highlighted shortcomings in management information systems and data.

Because the stress-tests were done simultaneously across institutions, using the same assumptions, it was possible to compare results – and, indeed, to observe differences in institutions’ ability to undertake a rigorous test. Previously supervisors did conduct comparative exercises (called horizontal reviews), but the sequential nature of those exercises (that is, their occurrence in different time periods) made it more difficult to compare results across institutions.

The stress tests provide a top-down assessment of capital, based on economic assumptions – and thus provide a very good complement to the bottom-up risk assessment that is the cornerstone of most risk-management frameworks at major banks and is the cornerstone of the Basel II Capital Accord. In addition, making the results public allowed outside investors to “bound” the likely losses at financial institutions, even considering the more dire outlook (compared to the base forecast of many) that was part of the stress tests. This ultimately helped financial institutions raise additional capital at a critical juncture for the economy.<sup>9</sup>

A second area that should be considered is *the role of debt*. A variety of debt instruments are issued by banks and qualify as capital for institutions’ capital requirements, and the use of subordinated debt has been advocated by some economists. However, the reluctance to require debt to be converted to equity, or to shoulder more of the losses, should cause us to reexamine the role of debt in systemically important institutions. A number of proposals exist, but one possibility for reform would be to establish that debt instruments could be used to meet capital requirements only if they have automatic triggers to convert to common equity under certain circumstances.<sup>10</sup> While such instruments would not likely be attractive in the current environment, they may find acceptance once the economy and financial markets have recovered.



A third area involves *the off-balance sheet* operations of banks. Many large banks are market makers in assets held off of balance sheets. This has resulted in banks having very sizeable positions in derivatives instruments relative to their capital positions. In addition, banks had significant positions in structured investment vehicles and conduits that had much more risk than many financial institutions and their supervisors thought prior to the crisis. Examination and understanding of the role of off-balance sheet activities deserves significantly more supervisory attention, going forward. It will be important to ensure that capital held for off-balance sheet exposures is commensurate with the risk that they pose.

### **Concluding Observations**

Allow me to close with a few concluding observations. This crisis highlights the important role of financial institutions and markets on the real economy. In my view this is an area that does not receive sufficient attention in research, or in the teaching of economics.

The contributions of financial institutions and markets to the length and severity of this recession are likely to be a topic of research well into the future. However, given the extent of government intervention that has been necessary, more preventive measures must be considered.

Reform efforts will need to consider appropriate regulatory and supervisory measures to insure that financial markets can efficiently allocate capital without placing the economy, and taxpayers, at this degree of risk again. To accomplish this, I would suggest that lawmakers and policymakers will need to keep in mind the complex but undeniable way that financial markets, financial institutions, and financial matters such as liquidity and securitization interact with the real economy. And

this, I firmly believe, means the Federal Reserve can and must play an integral role in the financial regulatory framework in the United States.

Thank you.

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**NOTES:**

<sup>1</sup> Of course, the views I express today are my own, not necessarily those of my colleagues on the Board of Governors or the Federal Open Market Committee (the FOMC).

<sup>2</sup> See <http://edocket.access.gpo.gov/2007/07-5729.htm>.

<sup>3</sup> I explored this topic in a speech at the University of Wisconsin – Madison, entitled “The Impact of Financial Institutions and Financial Markets on the Real Economy: Implications of a ‘Liquidity Lock’”, available at <http://www.bos.frb.org/news/speeches/rosengren/2008/100908.htm>.

<sup>4</sup> Note that this liquidity lock, where transactions are impeded by severe risk aversion by potential investors, compounds problems created by a traditional credit crunch – a situation in which institutions seek to shrink assets (like loans) in order to meet regulatory or market-imposed capital-to-assets ratios. In the recent crisis, not only were financial firms faced with a need to de-lever (thus, a credit crunch), but they were also finding it increasingly difficult to borrow other than overnight – even if they were an organization that was highly rated (...thus, a liquidity lock).

<sup>5</sup> Section 13-3 of the Federal Reserve Act allows the Federal Reserve “In unusual and exigent circumstances ... to discount for any individual, partnership, or corporation...” See <http://www.federalreserve.gov/aboutthefed/section13.htm>.

<sup>6</sup> Utilizing ratings to help evaluate the riskiness of securities is a normal part of the securitization process. But when new securities arise, investors may need to exercise more caution as rating agencies themselves learn about the appropriate risk to attach to the new instruments. I discussed this in more detail in several talks, including “Recent Developments in Real Estate, Financial Markets, and the Economy” available at <http://www.bos.frb.org/news/speeches/rosengren/2007/101007.htm>.

<sup>7</sup> Bank lending where the loan is held as an asset on the bank’s balance sheet has implications for capital requirements, which focus on maintaining an acceptable capital-to-assets ratio.

<sup>8</sup> The Term Asset-Backed Securities Loan Facility (TALF) has been an effort by the Federal Reserve to “reopen” the securitization market. While the TALF program was complicated to start, it has helped reduce interest spreads on asset-based securities, and some new asset-based securities are being issued.

<sup>9</sup> Following the May 7 release of the results of the Supervisory Capital Assessment Program (SCAP), the 19 largest U.S. bank holding companies have raised \$59.1 billion in capital, including \$50.4 billion through stock offerings and \$8.7 billion through asset sales. The ten firms needing to augment

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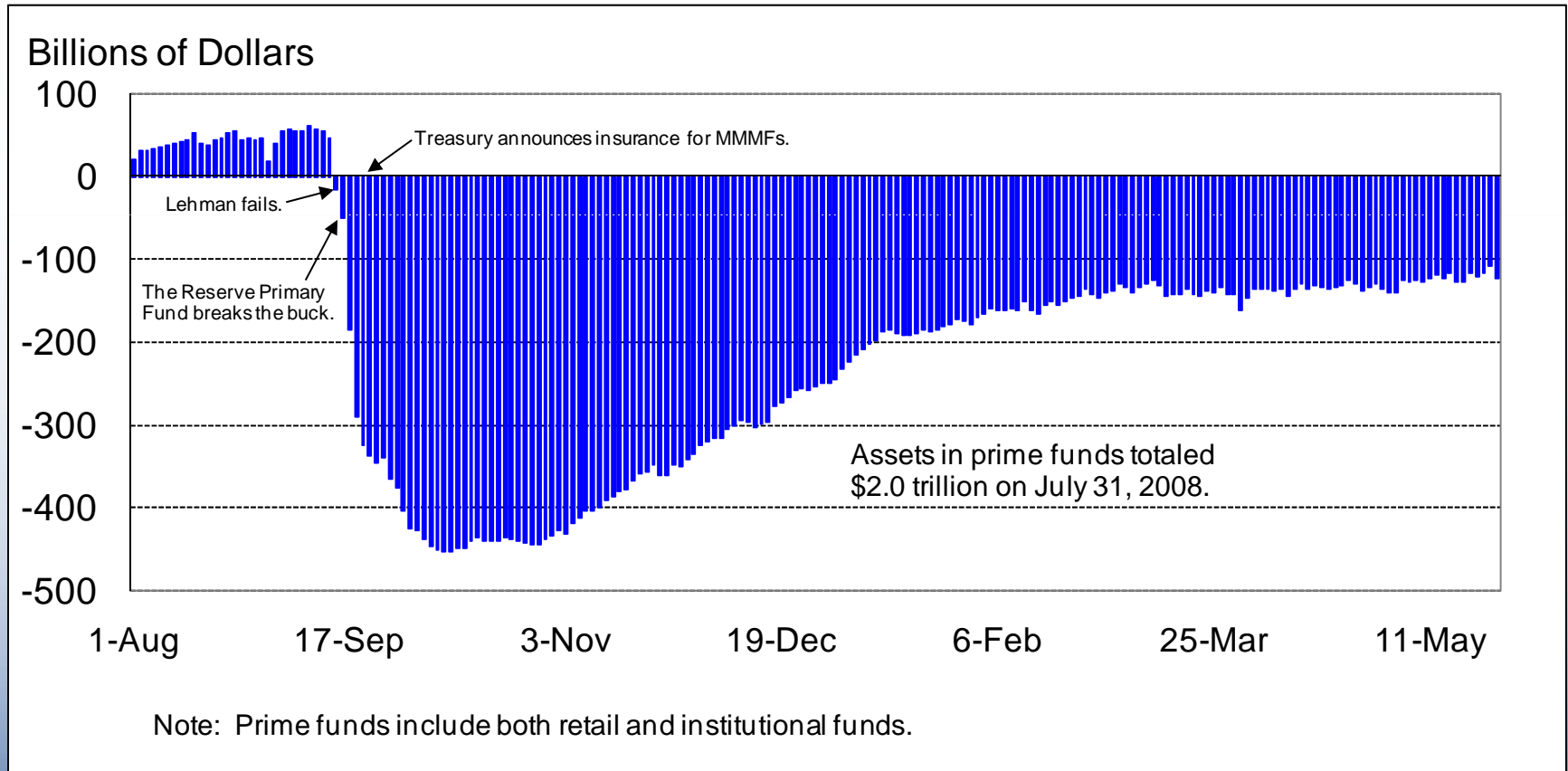
their capital have raised \$42.3 billion while the nine firms that did not need to augment their capital raised \$16.8 billion.

<sup>10</sup> E.g., under difficult economic circumstances.

# Figure 1

## Cumulative Change in Money Market Fund Assets in Prime Funds

August 1, 2008 - May 26, 2009

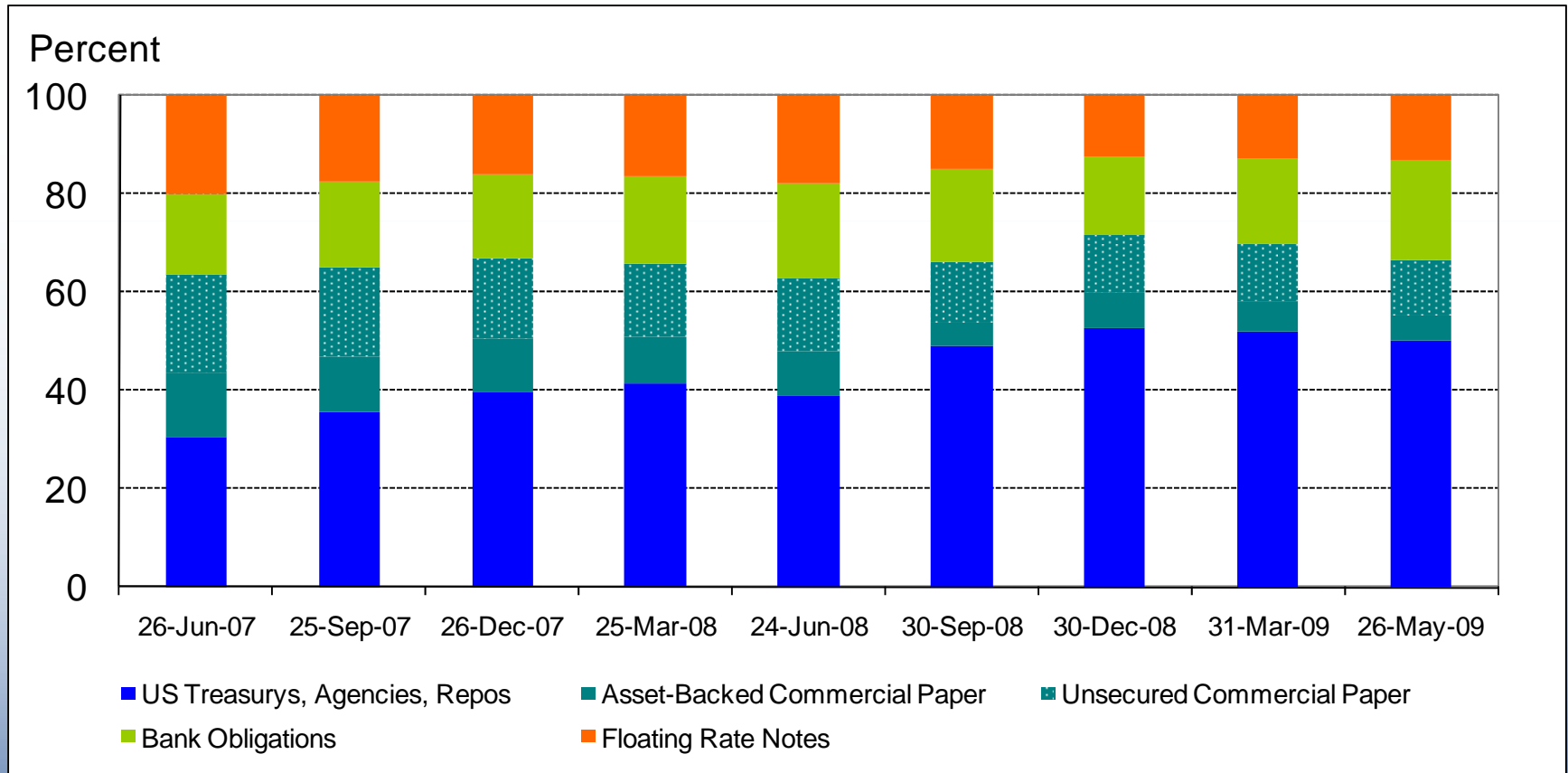


Source: iMoneyNet

# Figure 2

## Asset Composition of Taxable Money Market Funds

June 26, 2007 - May 26, 2009

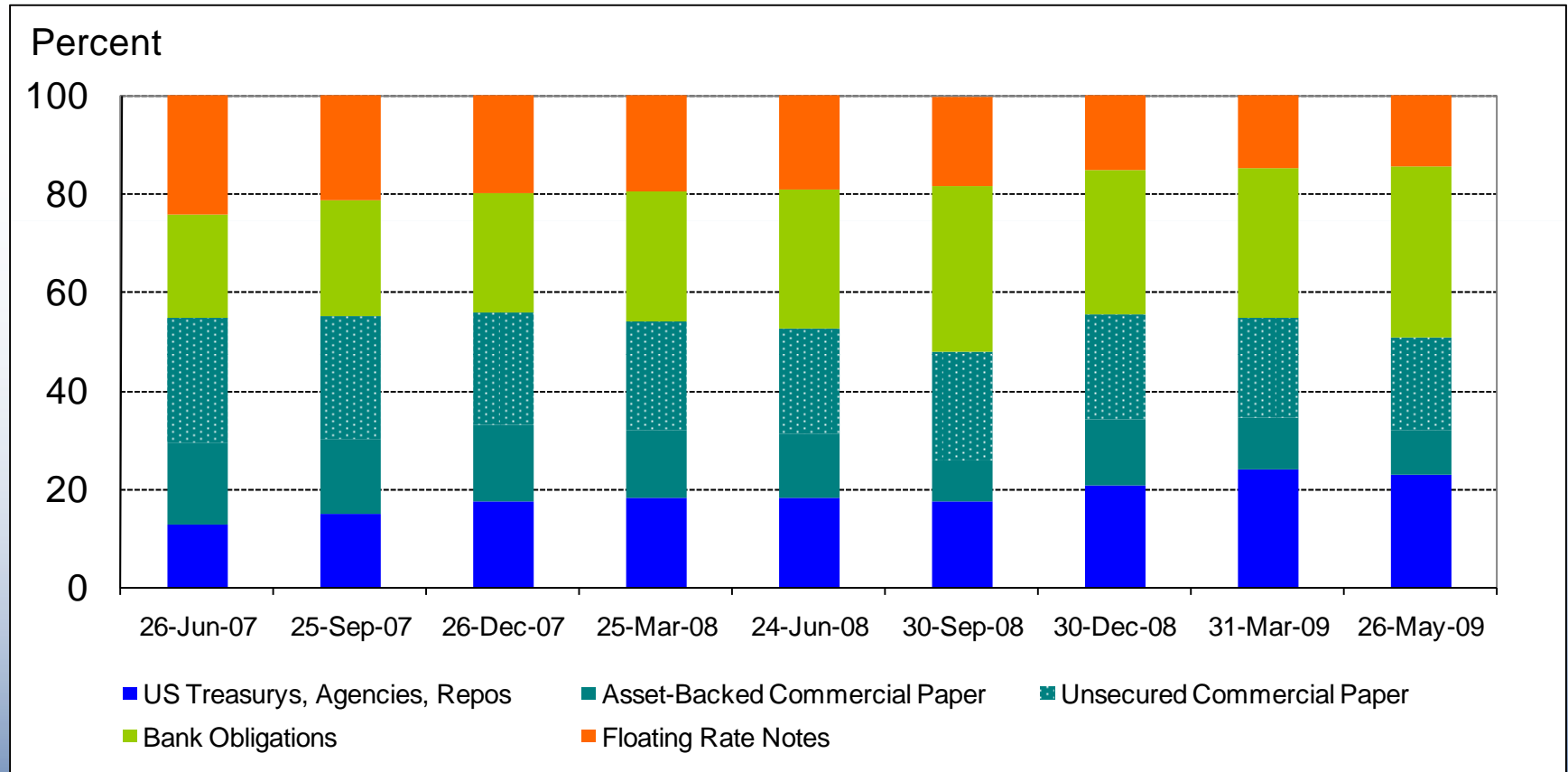


Source: iMoneyNet

# Figure 3

## Asset Composition of Prime Money Market Funds

June 26, 2007 - May 26, 2009

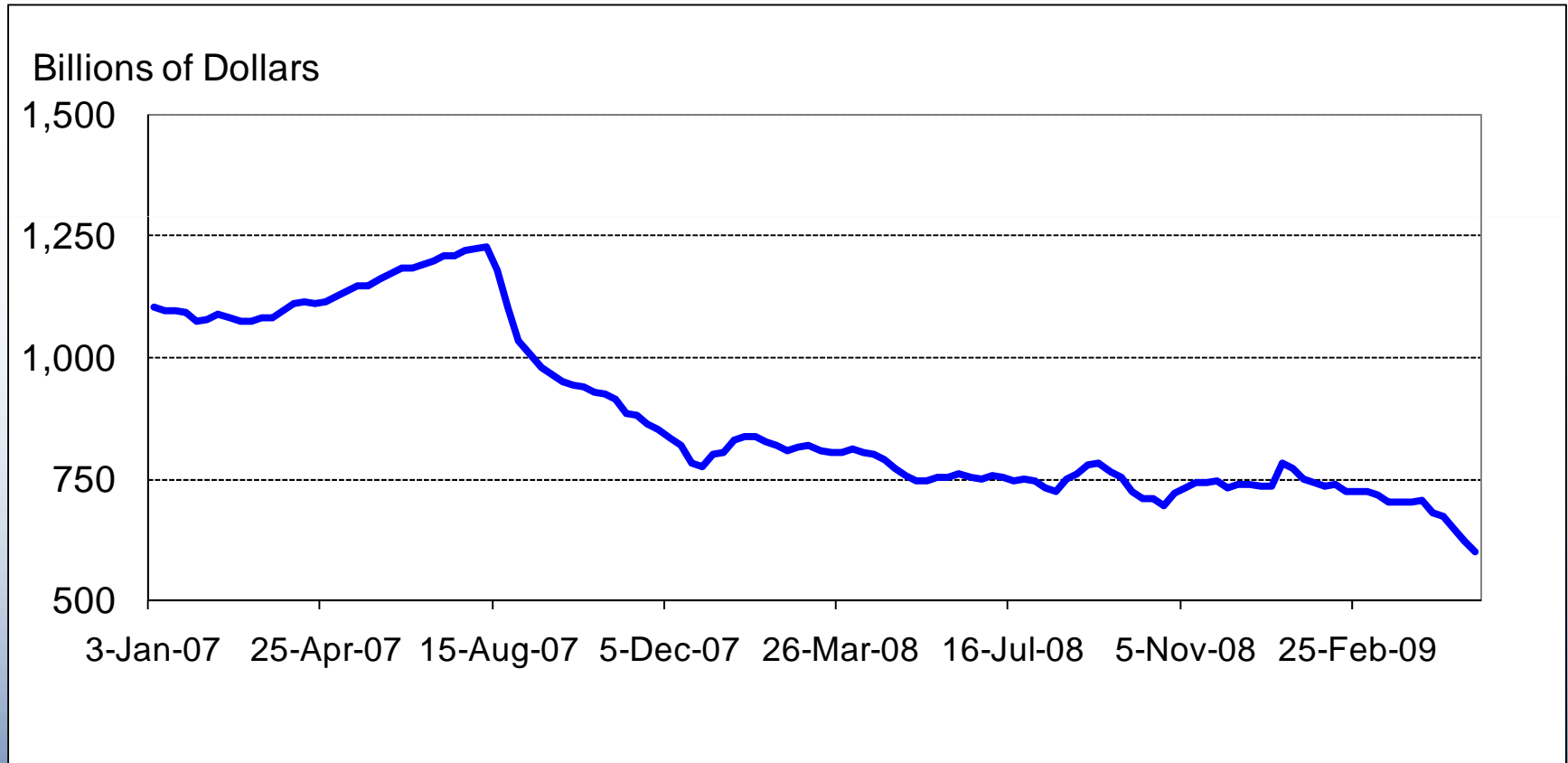


Source: iMoneyNet

# Figure 4

## Asset-Backed Commercial Paper Outstanding

Weekly, January 3, 2007 - May 13, 2009

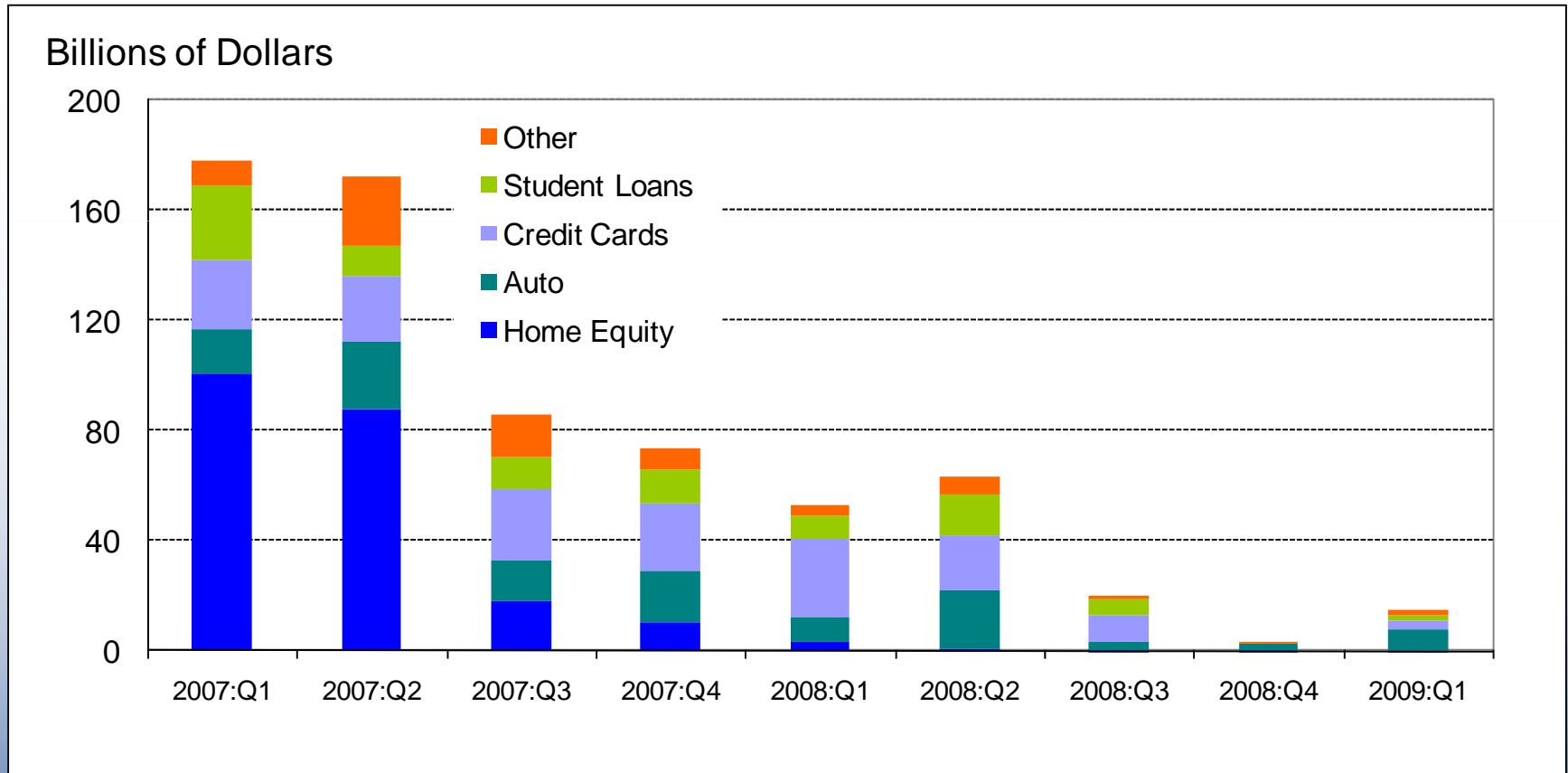


Source: Federal Reserve Board / Haver Analytics

# Figure 5

## Asset-Backed Securities Issuance by Type

2007:Q1 - 2009:Q1



Source: SIFMA, Thomson Reuters