

The asset-backed securities markets, the crisis, and TALF

Sumit Agarwal, Jacqueline Barrett, Crystal Cun, and Mariacristina De Nardi

Introduction and summary

Credit performs the essential function of moving funds from the savers who want to lend to the investors and consumers who wish to borrow. Under ideal conditions, this process ensures that funds are invested by the most skilled and productive individuals, thus improving efficiency and stimulating growth, and that consumers can get funds when they need them the most to satisfy their consumption needs.

Many different instruments of borrowing and lending have emerged to better address the needs of borrowers and lenders. Examples are trade credit, banks, stocks and commodities markets, and an enormous variety of financial institutions.

For many years, banks and financial institutions were collecting and lending funds while keeping the resulting loans on their books until they were repaid. Regulations and the need to follow sound and prudent lending practices were generating a need for collateral, thus tightly linking the amount of funds collected to the amount of loans created, even in the presence of more profitable and productive lending activities. For example, a bank generating lots of mortgage loans, which are typically financed by short-term deposits, had to keep a significant share of collateral to ensure that they could repay their depositors in case they wanted their money back at short notice.

To alleviate firms' need to hold large amounts of collateral and allow investors and institutions to share risk, asset-backed securities products were introduced in 1970. Asset-backed securities (ABS) are bonds backed by the cash flow of a variety of pooled receivables or loans. ABS can be securities backed by any type of asset with an associated cash flow, but are generally securities collateralized by certain types of consumer and business loans as opposed to mortgage-backed securities, which are backed by mortgages. Firms issue ABS to diversify

sources of capital, borrow more cheaply, reduce the size of their balance sheets, and free up capital.

For example, a bank holding consumer loans on its books could pool a large number of loans together and issue bonds with specific income streams generated by this pool of loans. In addition, the bank would transfer the loans to a separate entity. Selling the loans would generate cash flows that could be used to issue additional loans on the market.

ABS issuance grew steadily, increasing liquidity and reducing the cost of financing. From an annual issuance of \$10 billion in 1986, the ABS market grew to an annual issuance of \$893 billion in 2006, its peak in the U.S.¹ This growth was accompanied by expansion in the ABS market investor base from banks and institutional investors to hedge funds and structured investment vehicles (SIV).

The growth in ABS came to a sudden end with the financial crisis that started in 2007, which was characterized by a global credit crunch. The crisis began with a decline in house prices and an increase in mortgage defaults, particularly on subprime mortgages (high-risk loans to borrowers with poor credit). Uncertainty quickly spread to other consumer loan markets, such as those based on car loans, credit cards, and student loans. In July 2007, ABS issues backed by residential mortgages dried up. The failure of Lehman Brothers in October 2008 was a big shock to the financial markets and to investor confidence, and yields on ABS skyrocketed.² In this new high-yield environment, there was no economic incentive for lenders to issue new ABS. Consumer ABS (auto, credit card, and student loan segments)

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and commercial mortgage-backed securities markets³ issuances vanished. The intermediation of household and business credit between investors and borrowers stopped.

This credit crisis was in many ways also a credit rating crisis. Given the difficulty for investors to evaluate these structured financial products, most relied on ratings of ABS bonds by the major rating agencies. Prior to the crisis, more than half of the structured finance securities rated by Moody's carried a rating of AAA, the highest possible rating and typically reserved for securities that are perceived to be extremely low risk. In 2007 and 2008, the creditworthiness of structured finance securities deteriorated dramatically. Almost 40,000 Moody's-rated tranches (specific portions within a class of bonds) were downgraded, and almost one-third of the downgraded tranches had been rated AAA. The ensuing confusion about the true value and risk of these complicated financial products and the extent of financial institutions' exposure to them fueled additional market uncertainty and further reduced the availability of credit.

The Board of Governors of the Federal Reserve System recognized the importance of keeping a healthy supply of credit alive and acknowledged the important role of ABS markets in this process. To get these markets working again, the Board introduced the Term Asset-Backed Securities Loan Facility (TALF) on November 25, 2008. The official document announcing the facility stated: "The ABS markets historically have funded a substantial share of consumer credit and SBA-guaranteed small business loans. Continued disruption of these markets could significantly limit the availability of credit to households and small businesses and thereby contribute to further weakening of U.S. economic activity." The same document also explained that the TALF was "intended to assist the credit markets in accommodating the credit needs of consumers and small businesses by facilitating the issuance of asset-backed securities (ABS) and improving the market conditions for ABS more generally."

TALF facilitated issuance of new ABS and, even more importantly, provided a safety net by allowing people holding ABS products to borrow by putting up these products as collateral at a given price. This not only allowed these investors to satisfy their liquidity needs, but also provided an important guarantee of a

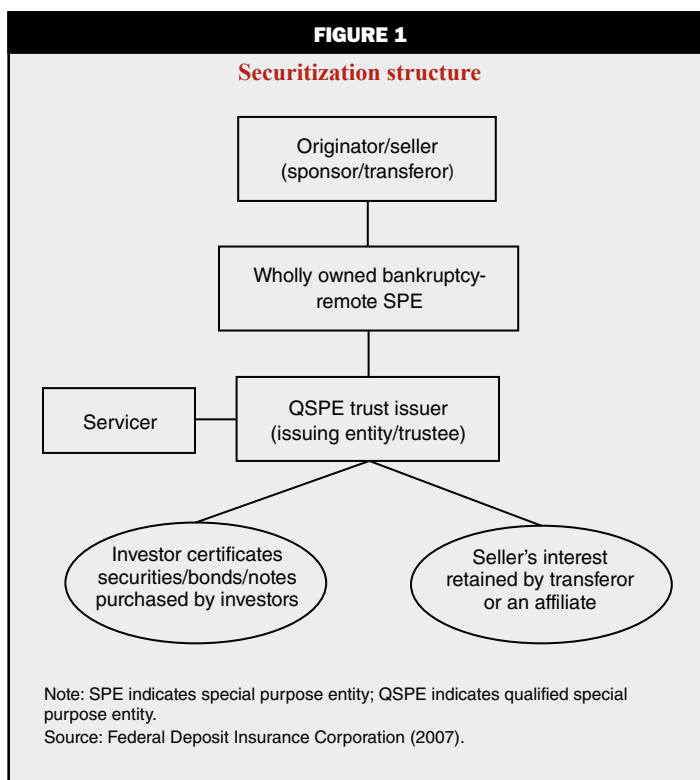
maximum price of liquidity for qualified borrowers. This guarantee generated a crucial backstop against irrational fears, lowering the value of these assets below what one could expect based on reasonable fundamentals.

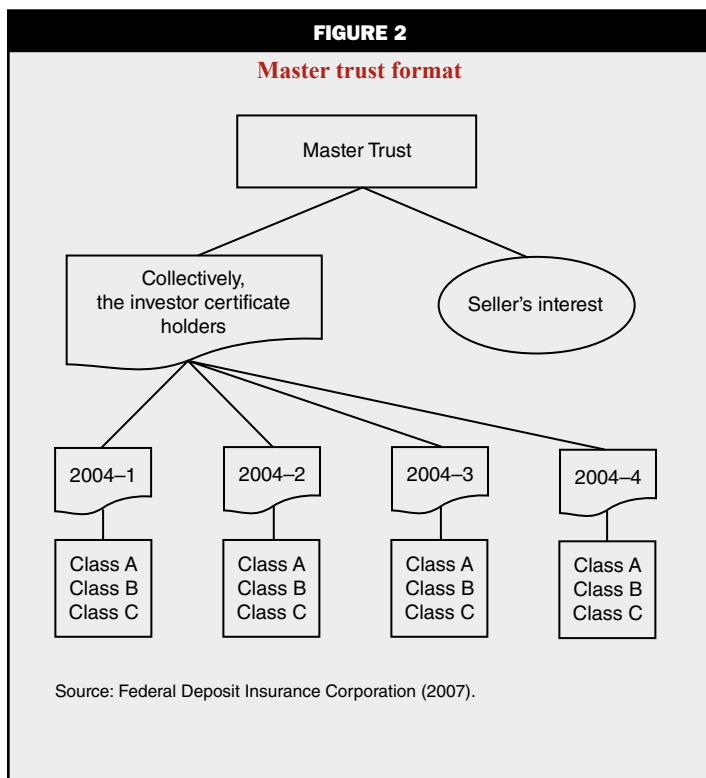
In this article, we analyze the role of ABS markets in generating credit and liquidity. We study how this role was disrupted during the crisis, and we argue that TALF successfully helped reestablish the ABS markets and the credit supply.

First, we describe how ABS products work, the growth of the market for these products, and its collapse. Then we show that TALF helped calm the markets and helped restart ABS issuance and reduce credit spreads, thus helping to reestablish a healthy credit supply to the markets.

Overview of the ABS market

How does securitization work? The essence of securitization is pooling and tranching. After pooling a set of assets, the originator creates different classes of securities, known as tranches, which have prioritized claims against the collateral pool. In a tranching deal, some investors hold more senior claims than others. In the event of default, the losses are absorbed by the lowest priority class of investors before the higher priority class of investors are affected. Thus, the pooling and tranching create some securities that are safer than the average asset in the collateral pool and some that are much riskier.





To explain the mechanics of securitization, we focus on credit card ABS, which make up the largest share of consumer ABS. Credit card ABS are bonds backed by credit card receivables, which include interest charges, annual fees, late payment fees, over-limit fees (for exceeding the account maximum), recoveries on charged-off accounts, and interchange. Interchange is income from card associations (Visa, MasterCard, and Novus) paid to the issuing bank; it varies from 1 percent to 2 percent of charged amounts.

Securitization structures are designed to isolate loans from the bankruptcy or insolvency risks of the other entities involved in the transaction. This is typically accomplished by the originator's transferring the receivables to one or more bankruptcy-remote entities, one of which will ultimately issue the ABS to investors. Bankruptcy remote refers to a subsidiary or affiliate corporation whose asset/liability structure and legal status make its obligations secure even in the event of the bankruptcy of its parent or guarantor. Since this off-balance-sheet debt is isolated from bankruptcy risks, it should be cheaper than debt that takes into account the possibility of bankruptcy (Gorton and Souleles, 2005).

The securitization is created when the financial institution (also known as the originator, transferor, seller, or sponsor) accumulates a significant volume of receivables and transfers these receivables to a wholly owned, bankruptcy-remote special purpose

entity (SPE). The SPE then transfers the receivables to a securitization vehicle, typically a qualified SPE trust, or QSPE. (See figure 1.)

The trust then packages the receivables and issues investor certificates (sold to investors) and trust certificates (retained by the transferor or affiliate). Proceeds from the sale of the investor certificates go to the trust. The trust in turn pays the financial institution (seller) for the purchase of the underlying receivables.

The investor certificates noted in figure 1 are usually issued with a senior/subordinated structure. The seller/originator often retains the bottom or most subordinated pieces, which get paid out last, in order to obtain high ratings from rating agencies. The trust certificates are also referred to as the transferor's interest, seller's certificate, or seller's interest. The seller's interest is traditionally retained by the originator, but as the ABS market expanded, an active market in subordinated sellers' tranches developed. Credit derivatives

could also be used to hedge away exposure risk. This meant that it was relatively easy for originators to sell their interest in securitizations, or at least hedge away some of the risk (Fender and Mitchell, 2009).

Master trust format

Rather than setting up a new trust for each securitization issued, a single master trust is used for multiple issues, as illustrated in figure 2. A master trust allows receivables to be added to the trust over time and multiple "series" of certificates to be issued, identified by specific issue dates and all backed by a single pool of receivables in the master trust. Additional series can be offered from the master trust at any time. The cash flow generated from all of the receivables in the master trust is used to fund debt service payments on each series (Fitch Ratings, 2006).

Series issued by the same master trust also have the ability to share excess finance charge collections. If finance charges allocated to one series are not needed to cover the corresponding interest, defaults, and servicing payments, the funds can instead be applied to absorb shortages in another series.

Trust assets are allocated among current and future noteholders and the seller's interest. The seller's interest represents the ownership interests in the trust assets that have not been allocated to any investor certificate holder's interest. The seller's interest insulates investors

from non-credit-related reductions in receivables by serving as a first layer of protection to absorb such fluctuations. This ensures that the receivables balance is sufficiently high, following dilutions due to charge reversals, fraud, seasonal swings in new receivable generation, and over-concentration amounts. Credit losses, on the other hand, are shared pro rata between the seller's interest and investors. Trusts generally have a specified minimum seller's interest, determined by the rating agencies, to ensure a base level of collateralization.

Cash flows

The monthly payment rate (MPR) is the principal collected during the month divided by the ending or average principal balance of receivables for the same period. The MPR measures the portion of outstanding receivables paid down each month; an MPR of 50 percent indicates full loan repayment in two months.

The underlying receivables may have different maturities from the outstanding certificates. For example, credit card securitizations have a relatively short life, typically eight to ten months, while supporting outstanding certificates that may have three, five, or ten year maturities. As a result of this maturity mismatch, each series issued out of the master trust is structured to have a revolving period, typically followed by a controlled accumulation period.

During the revolving period, payments are made to the servicer for cash flows from the receivables. The servicer deposits the payments into two collection accounts, one reserved for principal and the other for trust expenses and interest payments on the investors' certificates. New receivables generated by the designated accounts are purchased from the originating institution/seller with funds from the principal account.

During a controlled accumulation period, the principal payments are reinvested in short-term investments and become the collateral for the outstanding investor certificates. As principal payments are received, the short-term investments grow until they equal the amount of the outstanding investor certificates in the maturing series. At this point, the trustee makes a bullet payment to all investment certificate holders. During a controlled amortization period, principal collections are paid out to investors monthly throughout the period (Fitch Ratings, 2006).

If funds in the principal and interest payment reserve accounts are insufficient to repay investors on the expected maturity date, the accumulation or controlled amortization period will continue until the legal final maturity date. At this time, the trust will sell the remaining receivables to pay investors, if necessary.

Default and early amortization

Various performance events can trigger an early amortization or accelerated payment of the ABS. For most deals, early amortization is triggered when the three-month average MPR is lower than a predetermined percentage. Other early amortization events can include bankruptcy, failure to maintain receivables balances at predetermined levels, failure to pay the outstanding dollar amount of the notes by the expected payment date, and failure to pay interest for a predetermined period.

In the event of default, principal collections are distributed to investors, with senior notes paid off first. Principal collections are allocated as a percentage of the invested amount of the receivables balance at the onset of early amortization.

Credit ratings

ABS products are backed by a pool of receivables, have a complicated seniority structure, and rely on specific legal guarantees in case of default. In addition, there is asymmetric information between the issuers of the securities and the investors. To help inform investors and the market at large, rating agencies analyze ABS bonds and attach credit ratings to their various tranches.

The credit analysis of securitizations is a complex process that includes an evaluation of the originator and servicer; an assessment of the collateral and historical asset performance; an understanding of the securitization and legal structure; and modeling of cash flows under various stress scenarios.

The interaction between credit ratings and financial regulation was an important contributor to the growth in securitization markets. The use of credit ratings in the regulation of financial institutions created a large demand for highly rated (especially AAA) securities. Minimum capital requirements for banks, insurance companies, and broker-dealers depend on the credit ratings of the assets on their balance sheet. Pension funds also face rating-based investment restrictions. Securitization allowed investors to participate in asset classes to which they would otherwise not have had access. For example, an investor that was not permitted to buy B-rated corporate bonds could invest in AAA-rated ABS securities that were issued on a pool of B-rated corporate bonds, which would typically yield more than bonds rated A or higher.

In order to receive higher debt ratings and thus improve marketability and financing costs, ABS products require credit enhancements. Enhancements can be internal, external, or a combination of both. Common external credit enhancement facilities include cash collateral accounts, collateral invested amounts (CIA),

third-party letters of credit, and reserve accounts. Internal credit enhancements facilities can include senior/subordinated certificates, excess finance charges, spread accounts, and over-collateralization (Fitch Ratings, 2006).

Growth of ABS

The ABS market that had such a prominent role in the recent financial crisis evolved over the course of several decades. Before the 1970s, banks usually held loans on their balance sheet until they matured or were paid off. The loans were primarily funded by bank deposits and depository institutions and mainly provided credit to the areas where they accepted these deposits. As a result, geographical imbalances in the flow of credit to borrowers emerged (Sellon and VanNahmen, 1988). Although investors traded whole loans, the market was relatively illiquid; mortgage lenders faced the risk that they would not find investors to purchase the whole loans, as well as the risk that interest rates could change.

The introduction of securitization addressed several of the shortfalls in the housing market, in particular. In 1970, the first form of securitization was brought to the marketplace. At this time, the Government National Mortgage Association (GNMA) introduced government-insured pass-through securities, in which the principal and interest payments were passed from borrowers to investors who purchased bonds that were backed by Federal Housing Administration and Veterans Administration 30-year single-family mortgages (Sellon and VanNahmen, 1988; Ergungor, 2003). Soon after, the Federal Home Loan Mortgage Corporation (FHLMC) and the Federal National Mortgage Association (FNMA) began issuing pass-through securities of their own. The pass-throughs were structured so that interest payments on the mortgages were used to pay interest to investors of the bonds, and principal payments were used to pay down the principal of the bonds (Rosen, 2007). The launch of pass-through securities provided several advantages. Investors could buy a liquid instrument that was free of credit risk. Lenders could move any interest rate risk associated with mortgages off their balance sheet and make additional loans with the new capital that they received from securitizing older loans. Businesses and consumers faced lower borrowing costs and were given increased access to credit as the geographical inefficiencies that were previously present were eliminated. One of the drawbacks to these new securities is that they were unable to accommodate different risk preferences and time horizons of investors.

The mortgage market continued to evolve with the issuance of the first private-label mortgage pass-through security by Bank of America in 1977 and the

first collateralized mortgage obligation (CMO) by FHLMC in 1983. CMOs addressed an important risk of owning pass-through securities—prepayment risk. Prepayment risk is the unexpected early return of principal as a result of refinancing. Borrowers are most likely to refinance when interest rates fall and investors are forced to reinvest the returned principal at a lower return than they previously expected. CMOs lowered prepayment risk for certain investors by providing different classes (tranches) of securities that offered principal repayment at varying speeds. The introduction of tranches in CMOs set the stage for more sophisticated debt vehicles that were tailored to the preferences of different types of investors (Ergungor, 2003). The senior tranches are highly rated and have the lowest risk. In the event that defaults occur in the underlying bonds, the losses are distributed among the junior tranches first. The senior tranches do not experience losses until all of the junior tranches have been exhausted. The junior tranches are high-risk instruments that come with the potential for high yields.

In the mid 1980s, securitization techniques that were developed for the mortgage market were applied to nonmortgage assets. Other types of receivables such as auto loans and equipment leases involved predictable cash flows, which made them attractive for securitization. Banks also soon developed structures to normalize the cash flows of credit card receivables, facilitating the creation of credit card ABS. In order to provide additional protection to investors on these securities, which were not government-insured, the pools of assets were over-collateralized, so that the value of the underlying loan portfolio was larger than the value of the security. Additional credit enhancements, such as the excess spread, the creation of reserve accounts, and letters of credit, were also implemented. The purpose of these credit enhancements was to limit losses for investors in the event of defaults. The market grew to include the securitization of additional asset types, including home equity loans, manufactured housing loans, and student loans.

The ABS market increased dramatically from 1996, when the value of outstanding securities was \$404.8 billion, to 2008, when the value of outstanding securities reached \$2,671.8 billion (figure 3). Although each type of security exhibited growth during this period, the largest expansions were seen in home equity ABS, student loan ABS, and collateralized debt obligations (CDOs), which are securities that can be backed by several different types of debt. Securities backed by credit card receivables made up the largest portion of ABS in 1996; by 2009, home equity ABS and CDOs made up the bulk of the market (figure 4). The value

of monthly ABS issuance also increased steadily until June 2006, when it peaked at \$110 million (figure 5, panel A).

The crisis

The formation and bursting of the housing bubble played an important role in starting and subsequently deepening the financial crisis. Among the factors contributing to the housing bubble were programs aiming at increasing home ownership, low interest rates, and reduced credit standards.

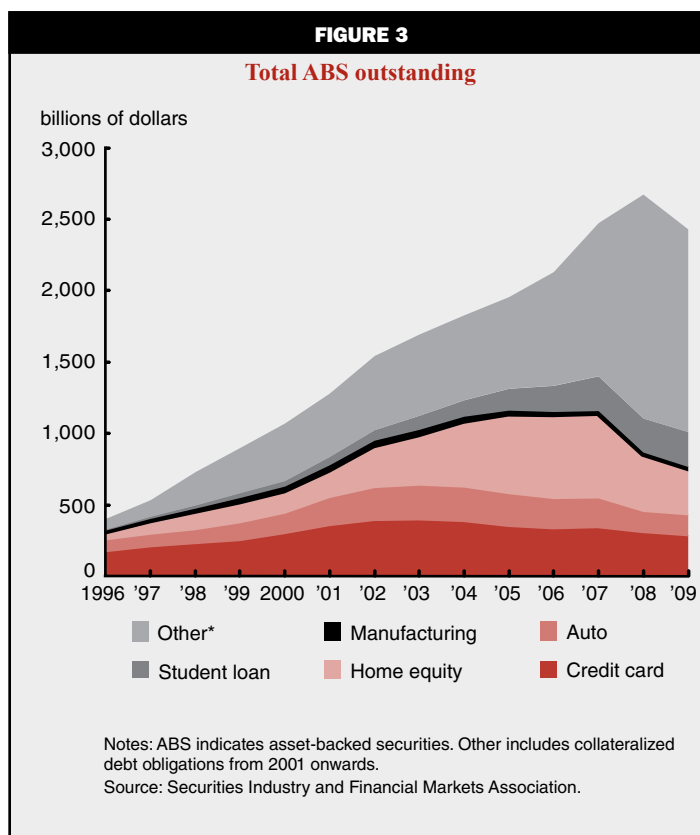
For decades, increasing homeownership has been a government policy objective, implemented through subsidies, tax breaks, and dedicated agencies. These policy interventions, coupled with historically low interest rates, encouraged unprecedented borrowing. As home prices surged, many households borrowed against the value of their homes by refinancing mortgages or taking out home equity lines of credit. At the same time, the banks that originated the loans were selling them rather than keeping them on their balance sheets. By securitizing mortgages, banks were able to originate more mortgages, but the quality of these mortgages deteriorated as the quantity increased. Lenders allowed borrowers with poor credit to purchase homes with low or no down payments. The credit rating companies compounded the problems by rating the ABS securities under the assumption that house prices would keep appreciating. This critical assumption turned out to be false (Sabry and Okongwu, 2009).

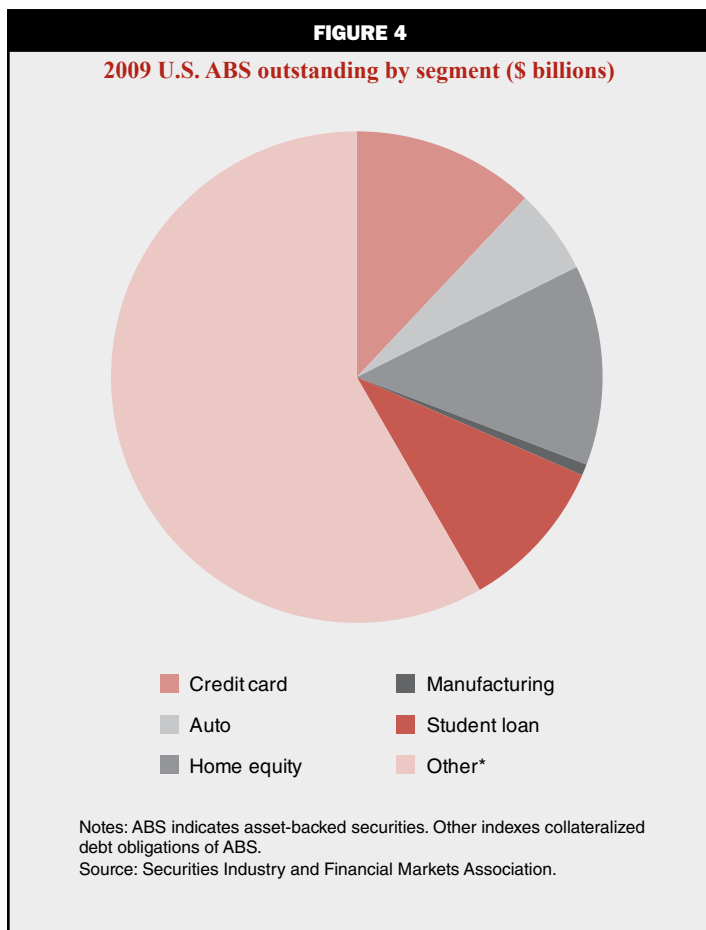
In 2007, the housing market started to decline: Home sales and construction starts slowed, home prices dropped, and interest rates began to rise. Defaults on subprime loans, especially those that had not required a down payment or income verification, started to surge. As interest rates started rising, adjustable mortgages started to reset at higher levels and fears spread that foreclosures would increase. Lenders and mortgage buyers responded to the defaults by tightening credit standards. Several subprime lenders suffered losses and eventually were forced to file for bankruptcy. As it became clear that many of the mortgages in default had been securitized, the previously highly rated securities were downgraded, causing demand for outstanding asset-backed securities to collapse. At the same time, a banking panic in the sale and repurchase agreement (repo) market forced banks to sell their assets at unfavorable prices (Gorton and

Metrick, 2009). There was also a sharp decline in the issuance of new housing-related securities. Although securities backed by housing-related collateral made up the majority of new ABS issuances in 2005 and 2006, starting in 2007, issuances for housing-related securities dried up (figure 5, panel B). By 2008, securities that were backed by student loans, credit card receivables, and automobile loans made up the majority of new ABS issuance because there were so few securities backed by real estate loans.

Benmelech and Dlugosz (2009, 2010) show that the deterioration in the credit ratings of structured financial products began in 2007, when there were more than 8,000 downgrades, an eightfold increase over the previous year. In the first three quarters of 2008, there were almost 40,000 downgrades, which overshadowed the cumulative number of downgrades since 1990. In 2007, downgrades were not only more common, but also more severe. The average downgrade was 4.7 notches (defined as the distance between two adjacent ratings) in 2007 and 5.8 notches in 2008, compared with an average 2.5 notches in both 2005 and 2006.

The unforeseen nationwide decline in the housing market and the related economic downturn were important factors that led to the deterioration in credit quality





cover the losses, investors were unwilling to provide it, except at a very large premium. These problems were further exacerbated by the fact that financial firms were reluctant to lend to each other. The insolvencies that emerged led to additional distress through defaults on payment obligations. The credit crisis caused the demise or bailout of Bear Stearns, Lehman Brothers, Fannie Mae, Freddie Mac, Merrill Lynch, Washington Mutual, Wachovia, AIG, and many other financial institutions around the world.

Assessing the impact of TALF

At the height of the crisis in the fall of 2008, following the collapse of Lehman Brothers, interest rate spreads on AAA-rated tranches of ABS skyrocketed to historical highs, reflecting unusually large risk premiums. Issuance of ABS slowed to a trickle in September and October, significantly limiting the availability of credit for small businesses and households. These market disturbances further weakened the U.S. economy (Dudley, 2009).

On November 25, 2008, the Federal Reserve announced the creation of the Term Asset-Backed Securities Loan Facility (TALF). This program was designed to meet the credit market needs of house-

holds and small businesses by facilitating the issuance of ABS collateralized by auto loans, student loans, credit card loans, and loans guaranteed by the SBA. The aim of the program was to stimulate demand for ABS in order to lower the cost and increase the availability of new credit. Under the terms of this program, the Federal Reserve Bank of New York would lend up to \$200 billion to holders of AAA-rated ABS, backed by newly originated loans from the designated sectors. The New York Fed would lend an amount equal to the market value of the ABS less a fraction of their value, called a "haircut." The haircuts served as a form of credit protection and minimized the risk that the purchaser would not repay the loan if the assets that they pledged for collateral declined in value. These non-recourse loans would have a term of one year and be secured by the ABS. The TALF would stop making new loans on December 31, 2009, unless the Federal Reserve found it necessary to extend the program. In addition, the Treasury Department would provide \$20 billion as an additional form of credit protection to the New York Fed to protect against the possibility that the loans

of these securities, but it is also natural to wonder how the credit agencies' risk assessments could have been so far off the mark.

Benmelech and Dlugosz provide empirical evidence that rating shopping also played a role in the collapse of the structured finance market. Rating shopping occurs when an originator chooses the rating agency that will assign the highest rating or has the most lax criteria for obtaining a desired rating. Most rating agencies are hired and paid by the originator to provide credit ratings. The probability that a tranche will be downgraded within a year after issuance is higher for tranches rated by only one rating agency. Also, the drop in rating is more severe in this case.

When the market broke down, the banks that were holding securities off their balance sheets until their expected sale were forced to bring them back onto their balance sheets under provisions in the original ABS issuance contracts. These banks incurred large and unplanned regulatory capital charges. At a time when these institutions needed to raise new capital to

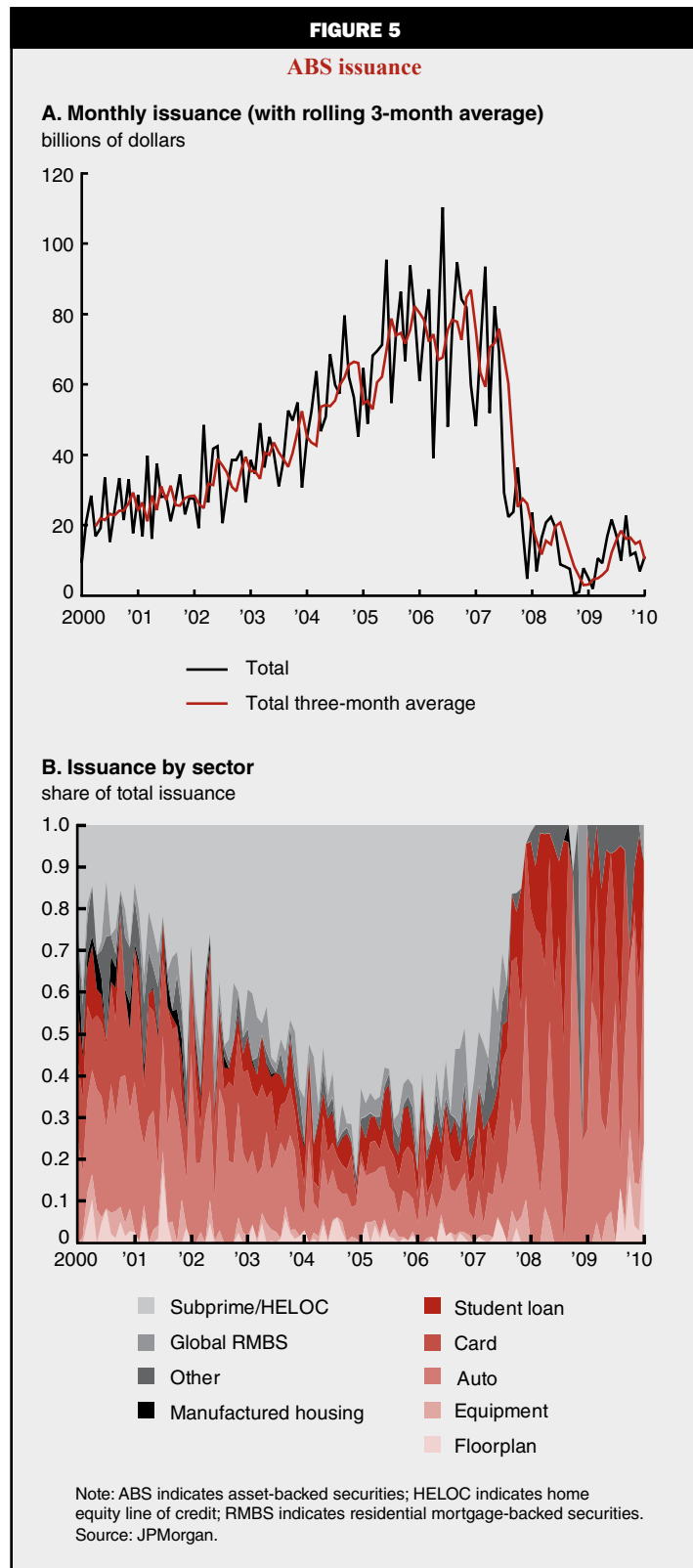
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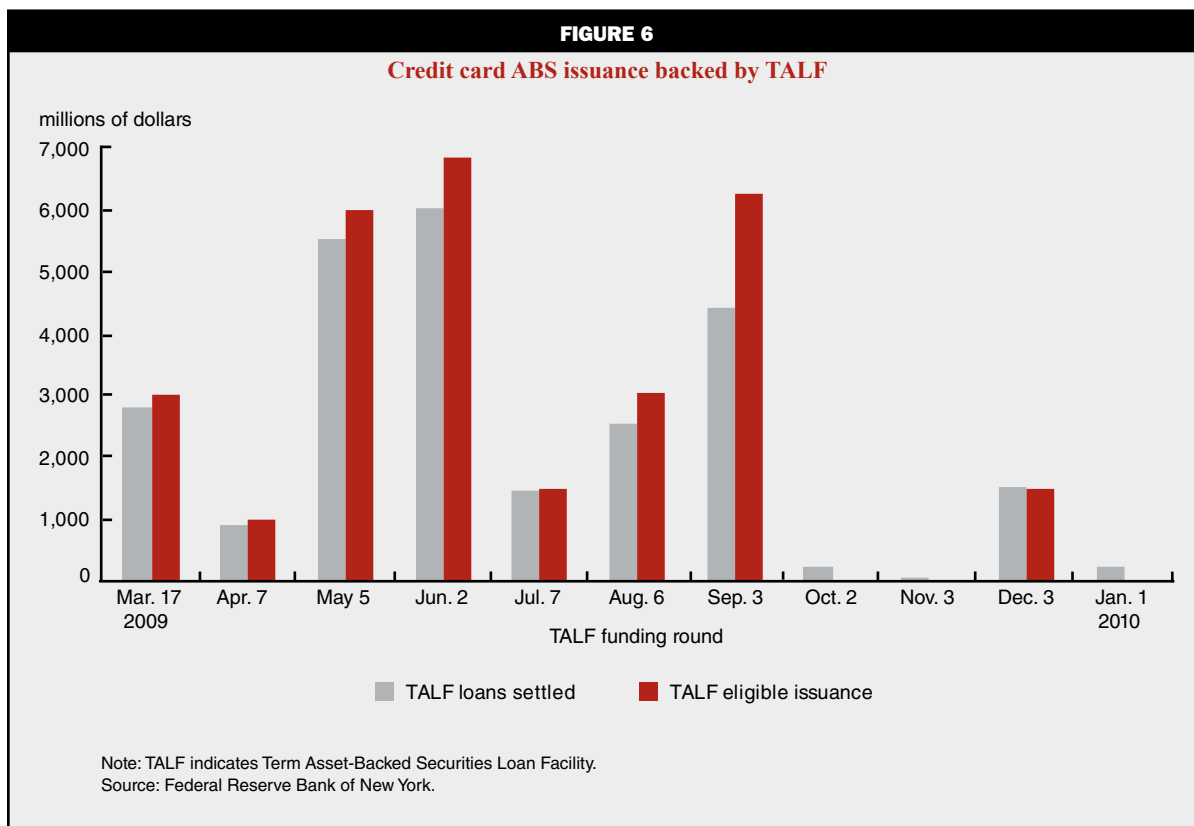
would not be repaid (Board of Governors, 2008b).⁴

In the subsequent months, additional changes were made to TALF. On December 19, 2008, the maturity of TALF loans was extended from one year to three years. On February 10, 2009, the Federal Reserve announced that, along with the Treasury Department, it was prepared to expand the scope and size of TALF. Under the Treasury's Financial Stability Plan, the Treasury would use \$100 billion to leverage up to \$1 trillion in lending (up from the previous levels of \$20 billion and \$200 billion, respectively). On March 17–19, 2009, the first TALF operation was conducted—the total amount of TALF loans settled was \$4.71 billion dollars, split between \$1.91 billion in auto loans and \$2.8 billion in credit card loans.

The Federal Reserve announced on March 19, 2009, that the set of collateral eligible for loans through TALF would be further expanded to include residential mortgage servicing advances, loans backed by business equipment, floorplan loans, and vehicle fleet leases. Soon after, the list was further expanded to include commercial mortgage-backed securities (CMBS) and insurance premium finance loans. The CMBS market had ground to a halt in mid 2008, and the inclusion of CMBS for TALF loans was designed to prevent defaults on viable properties and facilitate the sale of distressed properties. The Federal Reserve also announced it would allow up to \$100 billion of TALF loans to have an extended maturity of five years. On May 19, the Federal Reserve said that beginning in July, certain commercial mortgage-backed securities issued before January 1, 2009, would be eligible collateral for TALF loans.

On August 17, 2009, the Federal Reserve and Treasury announced an extension to TALF. Newly issued ABS and legacy CMBS would be eligible to receive TALF money through March 31, 2010, and newly issued CMBS would be eligible to receive loans through June 30, 2010. They also announced that they did not foresee the addition of other types of collateral.





Market volatility before November 2008, lack of stability in the mortgage market, and the absence of a consistent subordinated market were important factors generating the need for the TALF program. TALF helped unlock ABS issuance by providing a backstop to market uncertainty and fears by providing credit to people holding eligible ABS products. This helped generate some new ABS issuances. Figure 6 displays TALF-eligible credit card issuances and TALF credit card loans settled, starting from the first TALF issuance. The graph shows a close match between the two: Basically all credit card TALF-eligible loans received TALF support, with the difference being explained by the required haircut.

There was, to be sure, ABS market activity outside TALF, and it is likely that the TALF program still had a lot to do with the success of these offerings by providing a floor to the market. In this way, TALF may also have had a beneficial effect on non-TALF deals by helping to reduce spreads and decrease market volatility more broadly.

Since the introduction of TALF, ABS interest rate spreads have narrowed from historical highs in the fourth quarter of 2008, which suggests a significant improvement in liquidity and availability of credit in the market. Panels A and B of figure 7 illustrate the

spreads on two-year and three-year AAA-rated ABS (the highest quality rating) backed by credit card receivables and auto loans, along with sequentially numbered lines indicating the dates of various TALF announcements. Before the creation of TALF, spreads soared to up to 600 basis points for auto ABS and 550 basis points for credit card ABS. Soon after the creation of TALF on November 28, 2008 (date line 1), spreads dropped by over 200 basis points in both of these sectors. After the announcement that TALF could be expanded to up to \$1 trillion (date line 2) and the first TALF operation was conducted (date line 3), these spreads continued to fall for both types of securities. The markets also responded favorably to additional announcements that expanded the set of collateral eligible for TALF loans to include residential mortgage servicing advances, business equipment loans, floorplan loans, vehicle leases (date line 3), CMBS (date line 4), and legacy CMBS (date line 5). By the time TALF was extended for three additional months for newly issued ABS and legacy CMBS and six additional months for newly issued CMBS, spreads were only about 50 basis points above historical levels (date line 7). At the completion of TALF, spreads have fallen to approximately pre-crisis levels.

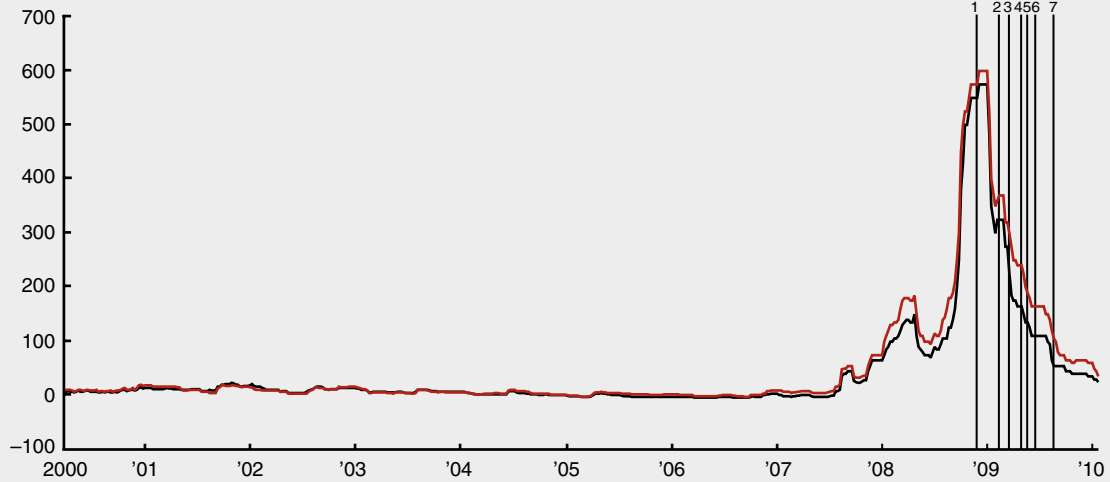
With spreads tightening and volatility declining, analysts say that traditional cash investors have re-entered

FIGURE 7

ABS spreads to swaps

A. Auto ABS

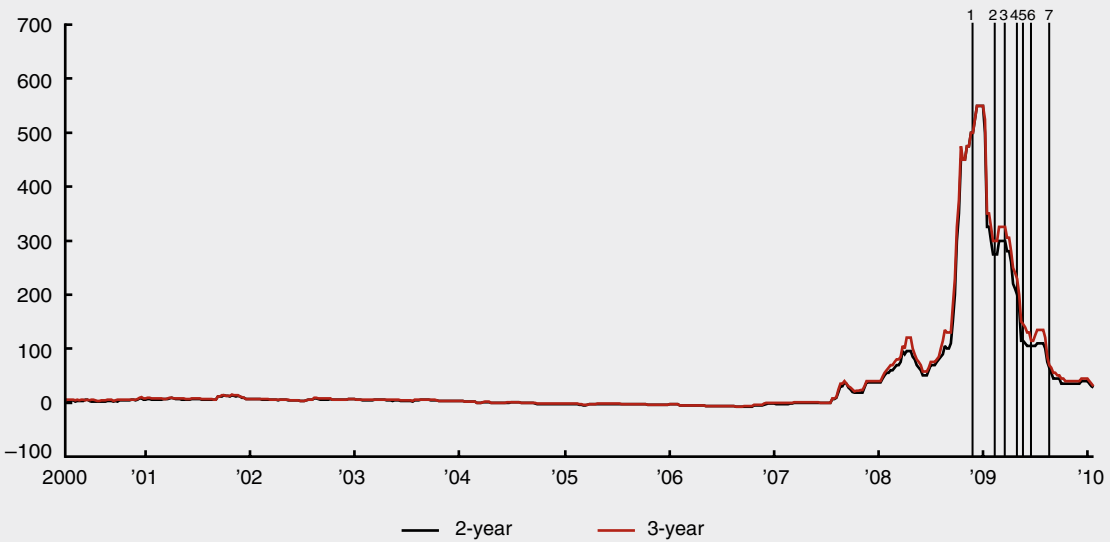
basis points



Legend: 1, TALF announcement; 2, expand TALF size; 3, TALF start/expand collateral; 4, TALF CMBS announcement; 5, TALF legacy CMBS announcement; 6, TALF CMBS start; 7, extension of TALF announcement.

B. Credit card ABS

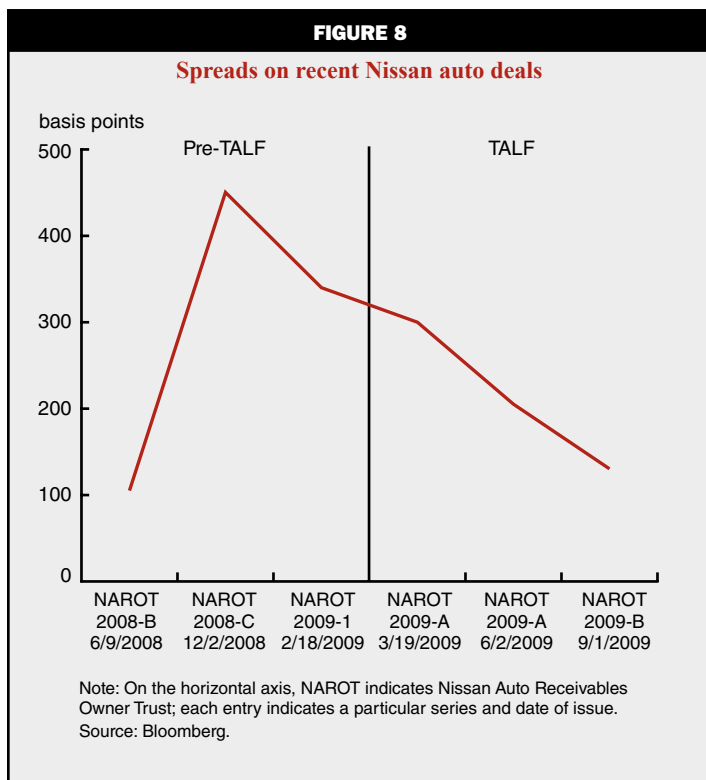
basis points



Legend: 1, TALF announcement; 2, expand TALF size; 3, TALF start/expand collateral; 4, TALF CMBS announcement; 5, TALF legacy CMBS announcement; 6, TALF CMBS start; 7, extension of TALF announcement.

Note: ABS indicates asset-backed securities; TALF indicates Term Asset-Backed Securities Loan Facility; CMBS indicates commercial mortgage-backed securities.

Source: Deutsche Bank.



the market. Auto finance companies that have issued multiple deals this year have seen funding costs fall with successive deals. Figure 8 illustrates the spreads on ABS backed by Nissan auto loans both before TALF was put into effect and after. Since the securities were issued by the same manufacturer, the deals are comparable. The spreads reached 450 basis points before TALF was enacted and ultimately fell to 150 basis points by September of 2009. This indicates greater liquidity in the ABS markets and improved capital funding options for firms.

Inspection of ABS spreads for sectors that were not the focus of TALF operations suggests that TALF may also have played a beneficial role in the broader market. In Figure 9, panel A, AAA-rated ABS spreads are shown for various sectors. After the announcement of TALF's expansion to as much as \$1 billion on February 10, 2009, spreads for the credit card, auto, and student loan sectors narrowed.

Issuance for the consumer ABS market has also increased across the credit card, auto loan, and student loan segments (figure 9, panel B). Even before the first TALF operation, student loan ABS reemerged in February 2009, the first issuance in the sector since August 2008. TALF loans in March and April 2009 supported the first credit card deals since October

2008, and more auto loan ABS were issued in those two months than in the previous four months combined.

As markets resumed more normal levels of issuance, new issuance was increasingly done without TALF support. TALF loans settled peaked in the June 2009 round of funding, with a decrease in loan requests through the rest of 2009 (figure 10, panel A). Overall issuance, particularly for both auto sector ABS (figure 10, panel B) and credit card ABS (figure 10, panel C) remained healthy, as originators were able to issue ABS without reliance on TALF support. In the second quarter of 2009, half of the ABS in these two sectors were supported by TALF; by the fourth quarter, the issuances supported by TALF had dwindled to a small number.

In addition, TALF has eased funding pressure by providing alternative funding for firms. After issuing TALF-eligible ABS, 80 percent of issuers were able to decrease their funding costs, with approximately half of issuers reducing costs by over 100

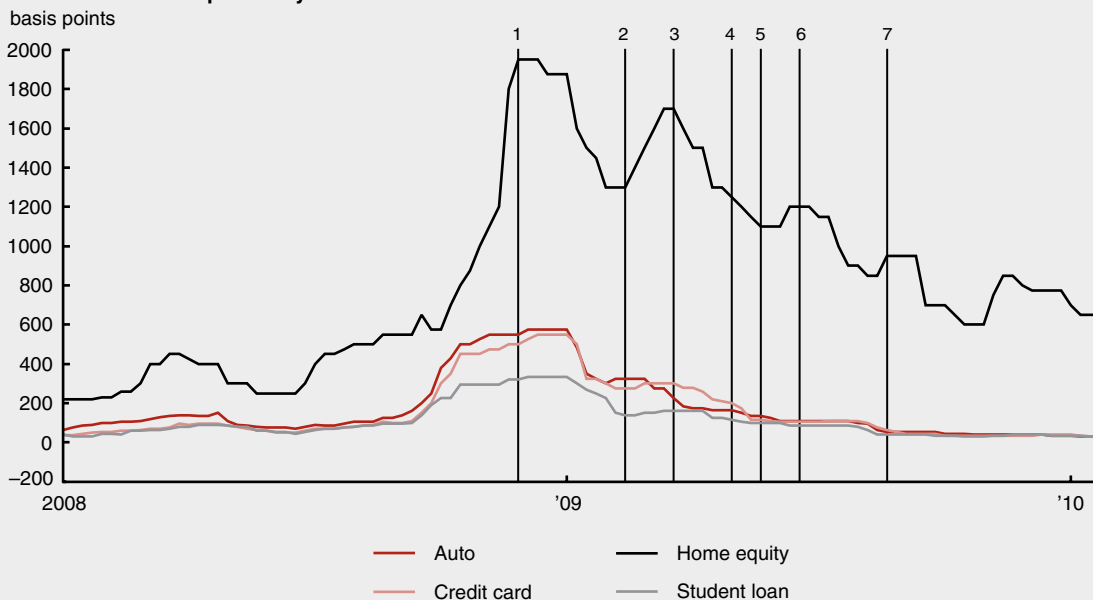
basis points and about one-quarter reducing costs by over 200 basis points. Importantly, the TALF program was conducted with minimal risk to the Federal Reserve and the Treasury. As of February 2010, the Treasury anticipated realizing a profit from the TALF program (U.S. Government Accountability Office, 2010).

A paper by Johnson, Pence, and Vine suggests that programs such as TALF that restored credit to the markets helped prevent the broader U.S. economy from sinking even further into distress. The authors found a strong link between financing conditions and the sale of vehicles when using both household level data and aggregate data. Specifically, they found that 38 percent of the decline in vehicle sales between the end of 2007 and the beginning of 2009 could be attributed to increases in the interest rates on new vehicle loans and households' perception that credit conditions were unfavorable. The purchases of households that were likely to face borrowing constraints were extremely sensitive to changes in credit conditions, but were not sensitive to expected changes in income. The study found that aggregate vehicle sales fell 130,000 units for every 1 standard deviation increase to the interest rate. This suggests that by making credit more accessible and affordable to consumers, TALF supported vehicle sales and the economy as a whole.

FIGURE 9

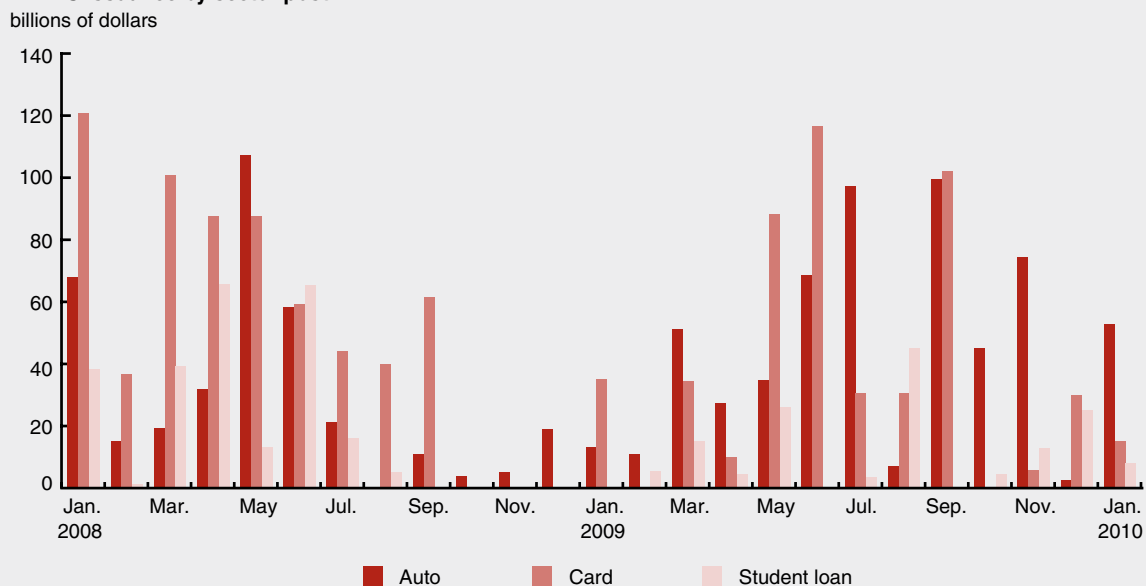
Impact of TALF on ABS spreads and issuance

A. AAA-rated ABS spreads by sector



Legend: 1, TALF announcement; 2, expand TALF size; 3, TALF start/expand collateral; 4, TALF CMBS announcement; 5, TALF legacy CMBS announcement; 6, TALF CMBS start; 7, extension of TALF announcement.
 Notes: Spreads for auto, credit card, and home equity sectors are to swaps. Spread for the student loan sector is to three-month Libor.

B. ABS issuance by sector post-TALF



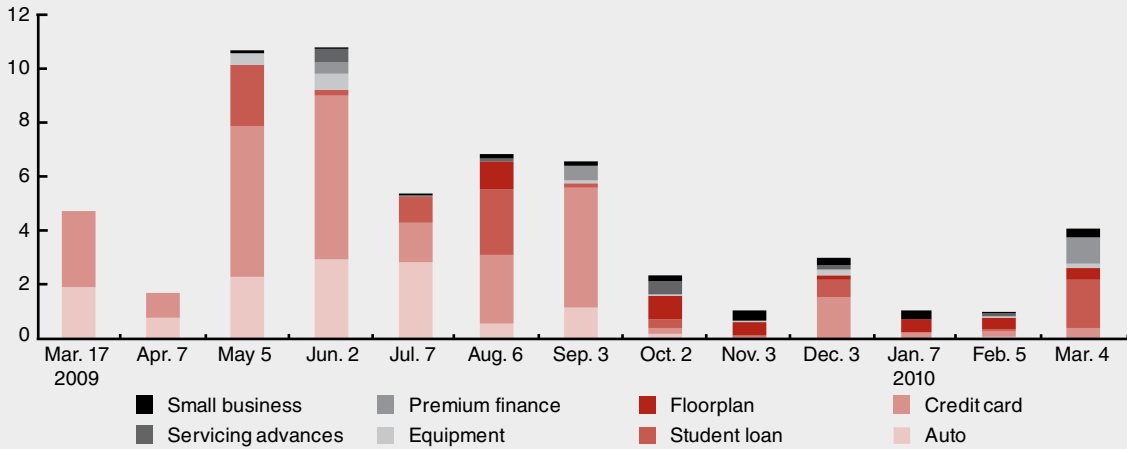
Note: ABS indicates asset-backed securities; TALF indicates Term Asset-Backed Securities Loan Facility; CMBS indicates commercial mortgage-backed securities.
 Sources: Panel A data from Deutsche Bank; panel B data from JPMorgan.

FIGURE 10

TALF loans

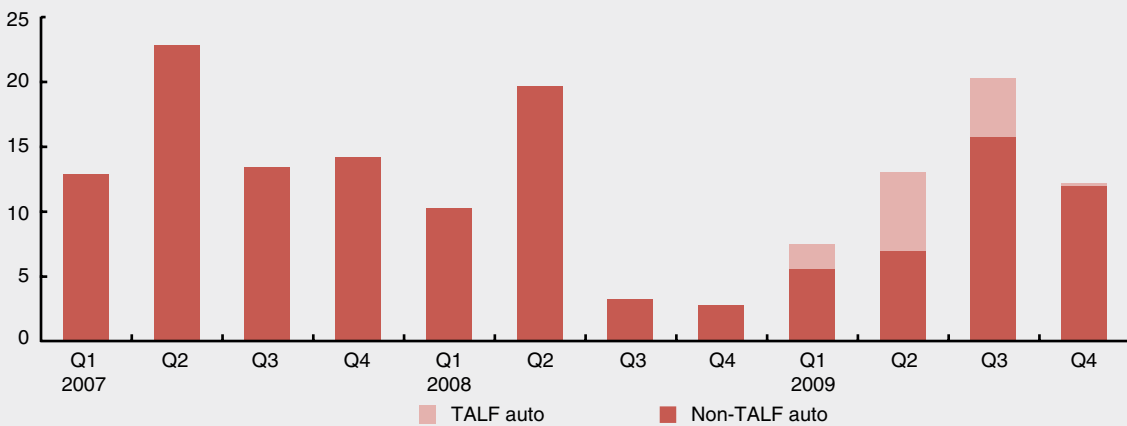
A. TALF loans by sector

billions of dollars



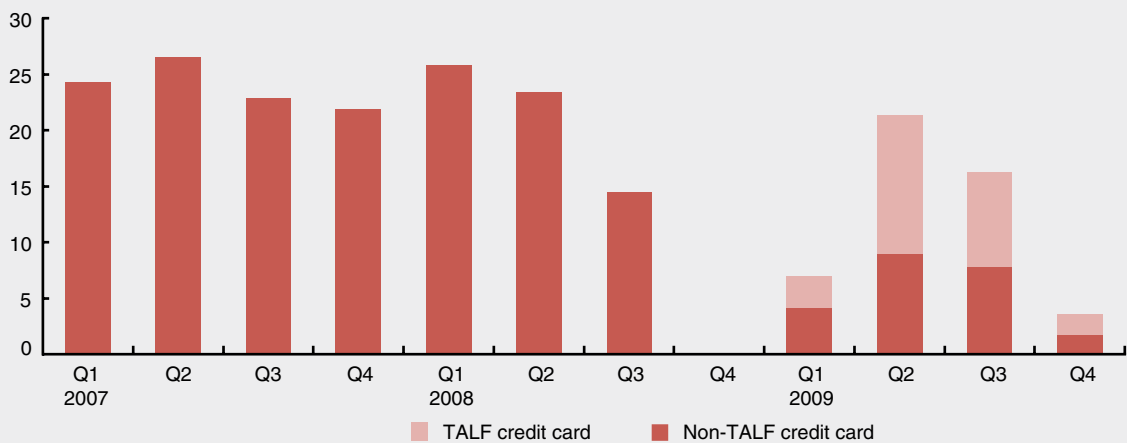
B. Auto ABS issuance backed by TALF

billions of dollars



C. Credit card ABS issuance backed by TALF

billions of dollars



Note: ABS indicates asset-backed securities; TALF indicates Term Asset-Backed Securities Loan Facility.
Sources: Panel A data from Federal Reserve Bank of New York; panel B and panel C data from Federal Reserve Bank of New York and JPMorgan.

Conclusion

The ABS market augments the banking industry's balance sheet capacity and provides an important source of funding for market participants. Liquid and well-functioning ABS markets help to keep credit flowing freely between consumers, firms, and investors. The TALF program offered a liquidity backstop and leverage to investors in the ABS and CMBS markets. The resulting increase in market liquidity helped spreads in core ABS classes, such as credit card and prime auto, to fall back to levels similar to those seen before the Lehman bankruptcy. TALF was also instrumental in funding new issuance to return ABS markets to pre-crisis operations. As ABS markets have recovered, increasing amounts of ABS have been issued without TALF support.

ABS spreads for many sectors, including prime auto, equipment, and credit cards, are pricing below the TALF loan rate and have not been adversely affected by the conclusion of the TALF program. However, spreads for ABS backed by longer maturity and subprime assets, such as subprime credit card, private credit student loans, and floorplan, will likely widen following the end of TALF. This is because issuance in these asset classes is more reliant on TALF financing; and spreads may increase modestly to make the deals attractive enough to investors to replace levered TALF investors.

NOTES

¹ABS data from JPMorgan include U.S. issuance for the following sectors: student loan, auto, credit card, equipment, floorplan, global RMBS (residential mortgage-backed securities), subprime/HELOC (home equity line of credit), manufactured housing, franchise, insurance, servicing advances, marine, stranded assets, RV (recreational vehicle), tax lien, tobacco, and time share.

²Data from Deutsche Bank; see figure 7.

³Data from JP Morgan show that subprime/HELOC ABS issuance fell from \$31 billion in June 2007 to \$9 billion in July 2007. ABS issuance backed by autos and credit cards fell to zero in August and October 2008, respectively.

⁴The material in this section draws on several press releases issued by the Board of Governors of the Federal Reserve System as cited in the references.

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