The Term Asset-Backed Securities Loan Facility

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OVERVIEW

- Asset-backed securities (ABS) have historically played an important role in keeping a healthy supply of credit to households and businesses, funding a substantial share of auto, student, credit card, and small business loans.
- The economic downturn emanating from the COVID-19 pandemic disrupted this securitization market, and financial markets more broadly, resulting in higher spreads and a sharp decline in issuance.
- This study reviews the implementation, utilization, and market impact of the Term Asset-Backed Securities Loan Facility (TALF), a financial-crisis-era tool resurrected by the Federal Reserve in the pandemic response.
- The authors find that both the introduction of the TALF and its subsequent expansion were associated with statistically significant declines in the spreads of ABS securities that were eligible for TALF loans versus those that were not. However, the available data do not show evidence of a statistically significant effect on issuance.

The asset-backed securities (ABS) market, by backing loans to households and businesses such as credit card and student loans, provides essential support to the flow of credit in the economy. The COVID-19 pandemic disrupted this market, resulting in higher spreads on ABS and briefly halting issuance of most ABS asset classes. On March 23, 2020, the Federal Reserve established the Term Asset-Backed Securities Loan Facility (TALF) to facilitate issuance of ABS backed by a variety of loan types including auto loans, credit card loans, and loans guaranteed by the Small Business Administration (SBA), thereby re-enabling the flow of credit to households and businesses.[1] The TALF ceased extending credit on December 31, 2020.

An earlier version of the TALF was announced in 2008 and implemented successfully during the global financial crisis (GFC). In this article, "the TALF" denotes the 2020 version, while we use TALF 1.0 to refer to the GFC version of the program. In Section 1, we describe how the TALF worked, how much it was used, and its effects on the issuance and spreads of TALF-eligible securities relative to those of TALF-ineligible securities. Section 2 documents that both

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the introduction of the TALF and its subsequent expansion were associated with statistically significant declines in the spreads of TALF-eligible ABS relative to TALF-ineligible ABS. However, the facility did not have a statistically significant effect on issuance. In Section 3, we compare the two versions of the program and discuss the lessons learned from implementing the program a second time. Section 4 concludes.

1. Conditions in Securitization Markets around the Pandemic Crisis

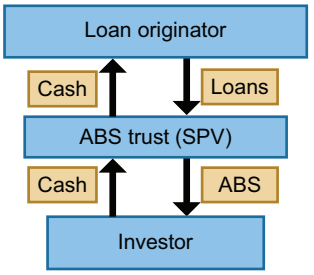
When financial firms provide loans to borrowers, they may keep and fund the loans on their balance sheets until loans are repaid or may securitize the loans by financing them off their balance sheets. In a securitization, large numbers of loans are pooled and used as collateral to issue ABS backed by the principal and interest payments on the loans (see Exhibit 1). Further, the cash flows from the loan pools are divided into multiple tranches with different risk characteristics and ratings, allowing investors such as asset managers, insurance companies, or commercial banks to buy the tranches that meet their capacity and willingness to bear risk. For example, risk-averse investors may choose to buy only the AAA-rated tranche of a securitization. Financial firms typically sell the loans to a separate, bankruptcy-remote entity known as a special purpose vehicle (SPV) that holds the loans and issues securitized debt, freeing up their capacity to make new loans.[2]

The importance of securitization as a funding source is evident in the large volume of ABS issued in 2019, when more than $300 billion was brought to market. After a seasonal lull in December 2019, ABS issuance was on the upswing in January and February of 2020 (see Chart 1). However, beginning in March 2020, as coronavirus cases surged and authorities imposed social distancing and shutdowns, the economic outlook became highly uncertain, disrupting financial markets. Total ABS issuance declined more than 70 percent from February to April 2020.

Along with declines in issuance, the spreads on the ABS spiked, reflecting both the heightened credit risk from loan losses and liquidity risk as investors ran short of cash (see Chart 2).

Exhibit 1

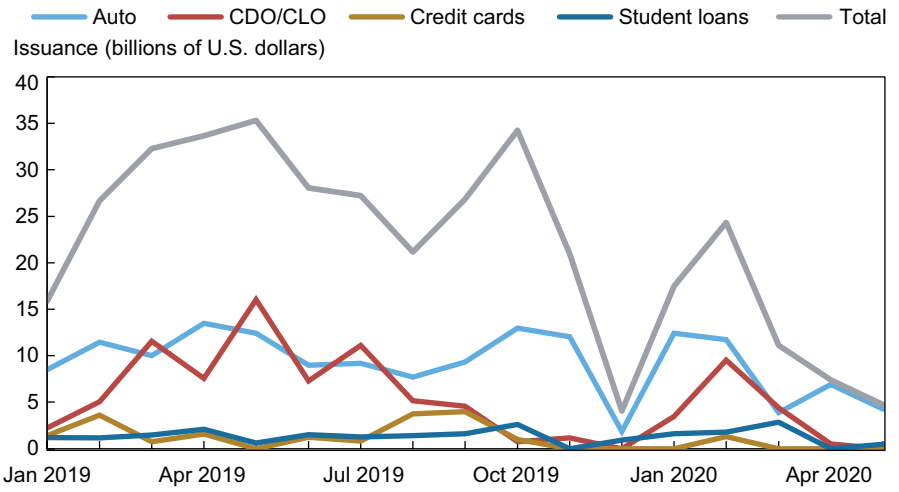
How Asset-Backed Securities Are Created



Notes: The chart provides a simplified illustration of how an asset-backed security (ABS) is issued. SPV is special purpose vehicle.

Chart 1

Issuance of Asset-Backed Securities (ABS): Jan 2019 to May 2020

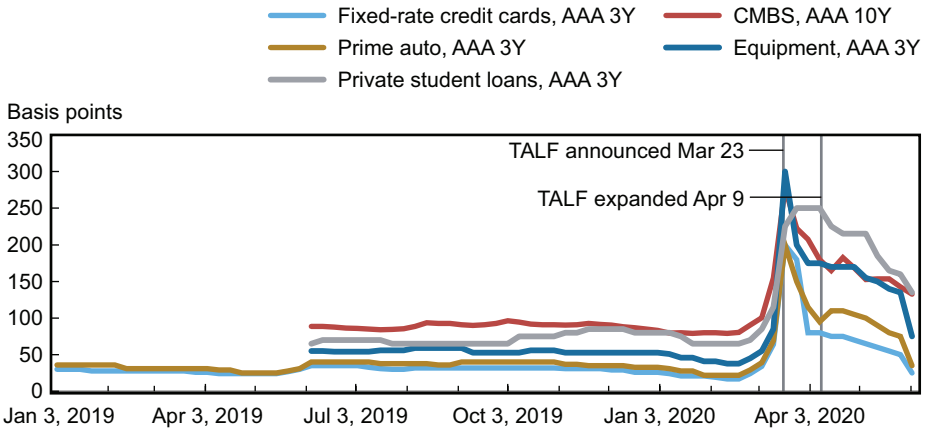


Source: SIFMA. https://www.sifma.org/resources/research/us-abs-issuance-and-outstanding/.

Notes: The chart shows issuance of select ABS sectors. CDO is collateralized debt obligation. CLO is collateralized loan obligation.

Chart 2

Spreads on AAA-Rated ABS Tranches



Source: Data are from Bloomberg L.P.

Notes: TALF is Term Asset-Backed Securities Loan Facility. ABS is asset-backed security.

For example, between February 20 and March 19, spreads on AAA-rated tranches of commercial mortgage-backed securities (CMBS) with ten-year maturity increased by almost 200 basis points to about 280 basis points and spreads on AAA-rated tranches of

three-year maturity prime auto loan ABS widened by almost 180 basis points to 200 basis points.

Since the ABS market has historically funded a significant portion of consumer and business lending, continued disruption of these markets—and of financial markets more broadly—had the potential to strain the liquidity and balance sheet capacity of financial institutions and hamper the flow of credit to consumers and businesses by limiting the ability of those institutions to make loans.[3]

1.1 The Establishment of the TALF

To facilitate the issuance of ABS, stabilize ABS markets generally, and support the continued availability of credit to households and businesses, the Federal Reserve Board authorized the New York Fed to establish the TALF under the authority of Section 13(3) of the Federal Reserve Act, with the prior approval of the Secretary of the Treasury.[4] The initial size of the facility was $100 billion, supported by $10 billion of equity authorized by the U.S. Department of the Treasury, using funds appropriated to the Exchange Stabilization Fund by Congress under section 4027 of the Coronavirus Aid, Relief, and Economic Security Act ("CARES Act").[5]

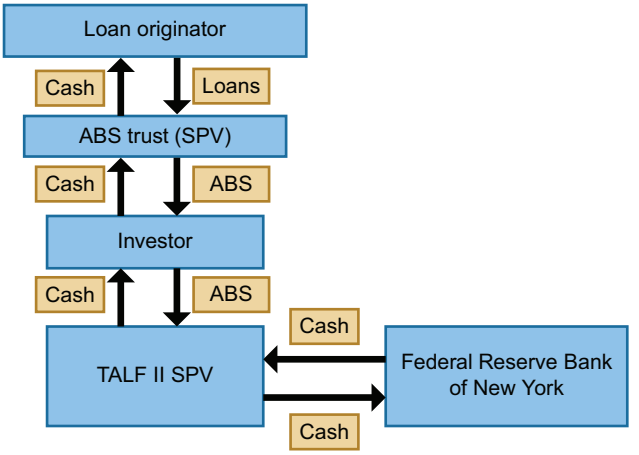
1.2 What Did the TALF Do and How Did It Do It?

The TALF was designed to facilitate the issuance of ABS backed by new or recently originated consumer and small business loans, leveraged loans, and commercial mortgages. The New York Fed lent to a special purpose vehicle (TALF SPV), which provided funding to eligible borrowers owning eligible ABS (see Exhibit 2).[6] The TALF lent an amount equal to the market value of the ABS, less a haircut to compensate for the collateral's credit risk. The loan was secured at all times by the ABS. By offering TALF loans to investors to purchase new or recently issued ABS, the facility provided liquidity to securitization markets and thereby facilitated the issuance of new ABS. In turn, financial firms that sell ABS to investors were able to free up capacity to continue lending to households and businesses.

The TALF contained several features intended to protect taxpayers from losses under adverse economic conditions. For an ABS to be eligible for a TALF loan, it needed a AAA credit rating from at least two rating agencies. Since AAA-rated tranches are the safest and largest in securitizations, limiting eligibility to these tranches allowed the TALF to have the greatest effect on market functioning while minimizing credit risk assumed by the Federal Reserve. In addition, TALF borrowers were required to post a haircut that ranged from 5 to 25 percent, depending on the asset class and average life of the securities. Haircuts were calculated as a percentage of the underlying value of the ABS, implying that the TALF SPV would not take a loss unless the price of the pledged ABS declined more than the haircut. The TALF only accepted underlying assets or ABS structural features that were relatively simple and safe in order to further reduce the risk of loss to taxpayers.[7]

Approximately twice each month, borrowers were able to request one or more three-year TALF loans. TALF loans were nonrecourse to the ABS investor—that is, if the investor did not repay the loan, remedies for the TALF SPV were limited to enforcing its rights in the

Exhibit 2
How the TALF Worked



Notes: The chart provides a simplified illustration of how investors borrow from the Term Asset-Backed Securities Loan Facility (TALF) using an asset-backed security (ABS). SPV is special purpose vehicle.

collateral—a feature that is atypical of ABS market financing under normal conditions. To provide more support under stressed than under normal market conditions, the TALF made loans at a premium over the rate that would prevail under normal market conditions. TALF loan interest rates were determined by the type of collateral securing the loan. For example, when collateralized loan obligations (CLOs) were provided as collateral, the rate was 150 basis points plus the thirty-day average of the secured overnight financing rate (SOFR). As of December 31, 2020, the TALF closed for new loan extensions.

1.3 To What Extent Was the TALF Utilized?

Since TALF loan terms were designed to be attractive during periods of stress but not at other times, its utilization tracked the recovery of securitization markets—that is, the TALF was used extensively during the crisis but less so when the markets recovered. Moreover, the majority of TALF borrowers were not traditional investors in AAA-rated ABS, such as insurance companies, but return-sensitive investors who viewed the facility as a temporary investment opportunity (Covitz, Meisenzahl, and Pence 2021). The activities of these return-sensitive investors facilitated the restoration of securitization market functioning, in line with the objectives of the TALF.

Covitz, Meisenzahl, and Pence (2021) document three types of return-sensitive investors in the TALF that accounted for 83 percent of all loans: TALF-only funds, fixed-life partnerships, and hedge funds with TALF-only borrowers. TALF-only funds were investment vehicles established by asset managers for the express purpose of borrowing from the TALF on behalf of their investors. Immediately following the announcement of the TALF, market participants expected TALF returns similar to those of TALF 1.0, ranging from high single digits to mid-teens for

AAA risk in asset classes including subprime auto, private student loans, auto floor plan, and auto lease ABS, with estimates of expected utilization of TALF loans between $30 billion and $50 billion.[8] These projected yields generated a lot of interest from market participants and there was aggressive marketing of TALF-only strategies designed to generate return by utilizing TALF financing (assumed to be cheaper than market financing). However, tighter spreads following the announcement of the TALF made TALF-only strategies less attractive.

TALF loans requested by asset class at each subscription are reported in Table 1. Small business and commercial mortgage were the most popular securitization sectors backing loan requests. In contrast, no loans were requested in the credit card, equipment, and floorplan sectors. By the time of the first TALF subscription on June 17, ABS spreads had tightened to the point that estimated TALF returns were in the low single digits. Market participants expected low TALF utilization for most traditional AAA-rated TALF-eligible ABS, such as prime auto loans and credit cards, because of unattractive TALF yields. Consistent with this interpretation, TALF utilization was dominated by legacy CMBS and SBA securitizations, markets where spread tightening occurred more slowly.

2. How Did Markets Respond to the Announcement of the TALF?

The liquidity backstop provided by the TALF appears to have played a key role in restoring investor confidence at a time of great uncertainty, mitigating fears that spreads would widen even before the program began operating. ABS spreads improved quickly following the TALF announcement as spreads tightened sharply across asset classes between March 23 and April 9. Issuance was slower to recover, with the pace of activity only picking up in the second half of 2020. TALF liquidity provided limited support to securitization issuance since, without increased economic activity, generation of new loans was naturally constrained.

2.1 Improvements in Market Functioning

In Table 2, we provide snapshots of the funding and liquidity conditions of secured financing markets during the pandemic, as well as changes attributable to the TALF, using the Fed's Senior Credit Officer Opinion Survey (SCOOS) on Dealer Financing Terms.[9] The survey collects qualitative information on changes in credit terms and conditions in securities financing from twenty-three participants that account for almost all dealer financing of dollar-denominated securities to nondealers. The surveyed participants are the most active intermediaries in over-the-counter derivatives markets.[10]

The Q2 2020 survey indicated worsening secured funding terms and liquidity conditions for most dealers in ABS market transactions from February to May 2020. A majority of dealers reported heightened funding demand, as well as worsening funding terms (such as haircuts) and liquidity conditions in ABS markets. In contrast, about half of dealers in the Q3 2020 survey indicated "easing of funding terms with respect to haircuts and collateral spreads for both average and most-favored clients." Strikingly, in consumer ABS (among the

Table 1

TALF Loans Requested at Each Subscription

Amount (millions of U.S. dollars)

	Subscription Dates											
Sector	Jun 17	Jul 6	Jul 21	Aug 4	Aug 19	Sep 3	Sep 18	Oct 6	Oct 21	Nov 5	Nov 24	Dec 10
Auto	-	-	-	-	-	-	-	-	-	-	-	-
Commercial mortgage	145	224	331	113	169	112	20	32	46	-	-	-
Credit card	-	-	-	-	-	-	-	-	-	-	-	-
Equipment	-	-	-	-	-	-	-	-	-	-	-	-
Floorplan	-	-	-	-	-	-	-	-	-	-	-	-
Leveraged loan	-	-	-	-	-	-	-	-	328	-	-	152
Premium finance	56	51	-	-	-	-	-	-	-	-	-	-
Small business	51	440	453	487	214	161	290	162	220	-	345	66
Student loan	-	8	200	46	-	10	-	-	-	26	-	-
Total	252	723	984	646	383	283	310	194	594	26	345	218

Source: Federal Reserve Band of New York. Term Asset-Backed Securities Loan Facility Rates, TALF rates. https://www.newyorkfed.org/markets/term-asset-backed-securities-loan-facility/term-asset-backed-securities-loan-facility-rates.

Note: Dates are in 2020.

Table 2

Funding and Liquidity Conditions in Secured Financing Markets: 2020-21

Panel A: Demand for Funding of Securitized Financing Transactions

Survey Dates: When Conducted, Period of Change	Securities Referenced	Increased or Decreased?	Share of Dealers Responding Increased/Decreased
Feb 11–25, 2020 Dec 2019–Feb 2020	Non-agency RMBS	Increased	Small
May 5–18, 2020 Feb–May 18, 2020	Non-agency RMBS, CMBS, and consumer ABS	Increased	>50 percent
Aug 11–20, 2020 Mid-May–Mid-Aug 2020	Non-agency RMBS and CMBS Consumer ABS	Increased No change	Small Small
Nov 10–26, 2020 Sep–Nov 2020	CMBS	Increased	About 20 percent
Feb 8–22, 2021 Dec 2020–Feb 2021		No change	

Panel B: Funding Terms (Haircuts, Collateral Spreads, Max Funding Amounts, and Maturity)

Survey Dates: When Conducted, Period of Change	Securities Referenced	Better or Worse?	Share of Dealers Responding Better/Worse
Feb 11–25, 2020 Dec 2019–Feb 2020		No change	
May 5–18, 2020 Feb–May 18, 2020	Non-agency RMBS, CMBS, and consumer ABS	Worse	Most
Aug 11–20, 2020 Mid-May–Mid-Aug 2020	Consumer ABS	Better	About 50 percent
Nov 10–26, 2020 Sep–Nov 2020	CMBS	Better	Over 50 percent
Feb 8–22, 2021 Dec 2020–Feb 2021	Non-agency RMBS CMBS Consumer ABS	Better Better Better	About 60 percent About 50 percent About 80 percent

Panel C: Liquidity Conditions

Survey Dates: When Conducted, Period of Change	Securities Referenced	Better or Worse?	Share of Dealers Responding Better/Worse
Feb 11–25, 2020 Dec 2019–Feb 2020	Non-agency RMBS and consumer ABS	Better	Small
May 5–18, 2020 Feb–May 18, 2020	Consumer ABS Non-agency RMBS and CMBS	Worse Worse	>50 percent >80 percent
Aug 11–20, 2020 Mid-May–Mid-Aug 2020	Consumer ABS CMBS and non-agency RMBS	Better Better	About two-thirds About 50 percent
Nov 10–26, 2020 Sep–Nov 2020	Consumer ABS	Better	About one-third
Feb 8–22, 2021 Dec 2020–Feb 2021	Non-agency RMBS and consumer ABS	Better	About one-third

Source: Senior Credit Officer Opinion Survey (SCOOS) on Dealer Financing Terms, Q1:2020–Q1:2021.

Notes: ABS is asset-backed security. CMBS is commercial mortgage-backed security. RMBS is residential mortgage-backed security.

Table 3
The Effect of the TALF on Funding and Liquidity Conditions in Secured Financing Markets

	Changes Relative to Mid-March in Non-agency CMBS	
Survey Dates: When Conducted, Period of Change	Funding Terms (Share of Dealers; Higher/Lower; Term Type; TALF-Eligibility)	Liquidity Conditions (Share of Dealers; Better/Worse; TALF Eligibility)
Aug 11 – 20, 2020 Mid-May–Mid-Aug 2020	About 50 percent; lower; collateral spreads; TALF-eligible and ineligible	About one-third; better; TALF-eligible
	About 25 percent; lower; haircuts; TALF-eligible and ineligible	Same; TALF-ineligible
	About one-third; higher; max funding amount and maturity; TALF-eligible and ineligible	

Source: Senior Credit Officer Opinion Survey (SCOOS) on Dealer Financing Terms, Q3:2020.

Notes: TALF is Term Asset-Backed Securities Loan Facility. CMBS is commercial mortgage-backed security.

worst-affected sectors during the pandemic), about two-thirds of dealers reported better liquidity conditions between mid-May and mid-August of 2020. That contrasts with the more than 50 percent of dealers who reported worse liquidity conditions during the crisis period between February and May 18, 2020. Dealers continued to report better funding and liquidity conditions in the fourth quarter of 2020 and the first quarter of 2021.

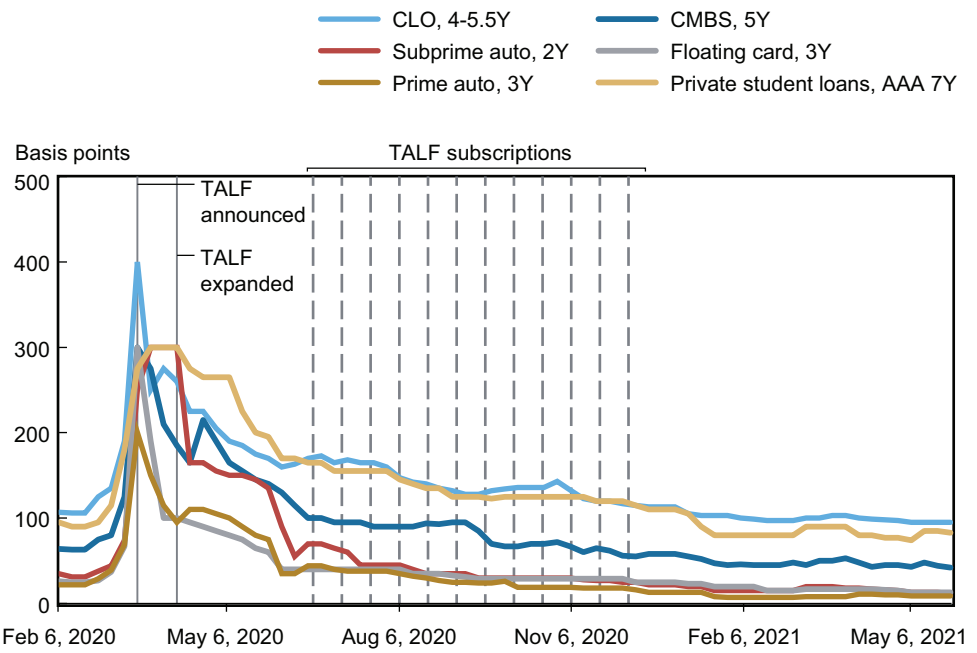
The Q3 2020 survey also asked dealers to compare funding and liquidity conditions for TALF-eligible and TALF-ineligible CMBS relative to mid-March 2020 conditions. Table 3 summarizes these responses. The dealers indicated improved funding terms independent of TALF eligibility, and they reported lower collateral spreads and haircuts, and greater and longer maturity funding amounts. Further, the dealers reported better liquidity conditions for TALF-eligible CMBS relative to TALF-ineligible CMBS.

2.2 Improvements in ABS Spreads due to the TALF

The announcement of the TALF on March 23 appears to have provided a backstop for securitization market pricing and helped to normalize ABS spreads, as Chart 3 shows. For example, between March 23 and April 9, spreads on AAA-rated, five-year tranches of CMBS dropped from 300 basis points to 185 basis points, and AAA-rated, three-year maturity tranches of primary auto loan ABS dropped from 200 basis points to 95 basis points. However, spreads on some less-liquid ABS asset classes, such as subprime auto loans and student loans, remained elevated.

On April 9, the asset classes eligible for the TALF were expanded to include certain types of CMBS and CLOs.[11] Spreads on these new TALF-eligible asset classes had already tightened following the initial TALF announcement and they tightened further following announcement of the expansion. Interestingly, spreads on ABS asset classes that had not improved following the TALF announcement on March 23 also fell after the expansion of the TALF and

Chart 3
AAA Securitization Spreads



Sources: Courtesy J.P. Morgan Chase & Co., Copyright 2021; authors' calculations.

Notes: The chart shows the spreads of select asset-backed securities between February 2020 and May 2021. CLO is collateralized loan obligation. CMBS is commercial mortgage-backed security. TALF is Term Asset-Backed Securities Loan Facility.

announcement of new Fed actions on April 9.[12] For example, spreads on AAA tranches of ABS backed by subprime auto loans dropped from 300 basis points in the week of April 9 to 165 basis points in the following week. Student loan spreads plateaued and gradually decreased. As TALF subscriptions continued in 2020, ABS spreads kept narrowing. By December 31, 2020, when the TALF closed for new loan extensions, spreads were close to pre-pandemic levels.

It is challenging to identify the effects of the TALF on ABS spreads in the context of market volatility and the macro policy changes that occurred during our sample period. Further, the Fed announced a slew of additional measures on March 23 to support households, businesses, and the U.S. economy.[13] To better isolate TALF effects, we perform a statistical analysis, estimating regressions to compare spread changes of TALF-eligible and ineligible securities (See Box 1 for a formal description of the regressions used in this study). Further, we use time-fixed effects which absorb all purely time-series variations in spreads—for example, those induced by market and macro factors. Finally, we use ABS security fixed effects to absorb all purely security-specific factors (for example, contractual features specific to a security). This ensures that the only difference between the two groups of securities under comparison is their TALF eligibility. Since the TALF-eligible securities could not qualify for any other Fed

Box 1

Regression Specifications

In this box, we describe the regressions used to estimate announcement effects on TALF-eligible relative to TALF-ineligible securities.

Spread Regressions

We estimate the following panel regression for security "*s*" and week "*t*":

$$\begin{aligned}\Delta Spread_{s,t} = {} & \alpha_0 + \alpha_s + \alpha_t + \beta_1 MarchAnn_t * TALFEligible - ExCLOCMBS_s + \beta_2 MarchAnn_t * CLOCMBS_s \\ & + \beta_3 AprAnn_t * TALFEligible - ExCLOCMBS_s + \beta_4 AprAnn_t * CLOCMBS_s + \beta_5 DecAnn_t * \\ & TALFEligible - ExCLOCMBS_s + \beta_5 DecAnn_t * CLOCMBS_s + \gamma_0 Subscriptions_t * \\ & TALFEligible_s + \varepsilon_{s,t} \end{aligned} \quad (1)$$

$\Delta Spread$ is the change in the spread of ABS security "*s*" from the prior week, and αs and αt are the security and time period fixed effects, respectively. The remaining regressors are dummy variables defined as follows:

- *TALFEligible-exCLOCMBS* = 1 for TALF-eligible securities except CLO and CMBS, and 0 otherwise,
- *CLOCMBS* = 1 for TALF-eligible CLO and CMBS and 0 otherwise,
- *TALFEligible* = 1 for *all* TALF-eligible securities, and 0 otherwise,
- *MarchAnn* = 1 on March 23, 2020, and 0 otherwise,
- *AprAnn* = 1 on April 9, 2020, and 0 otherwise,
- *DecExp* = 1 on December 31, 2020, and January 7, 2021, and 0 otherwise, and
- *Subscriptions* = 1 for TALF subscription dates (see Table 1) and 0 otherwise.

The regression is estimated with ordinary least squares (OLS) and the results are reported in Table 4. *T*-statistics based on robust standard errors are reported in parentheses.[a]

Issuance Regressions

We estimate the following regression for security "*s*" and month "*t*":

$$\begin{aligned}\Delta Issuance_{s,t} = {} & \alpha_0 + \alpha_s + \alpha_t + \beta_1 March2020_t * TALFEligible - ExCLOCMBS_s + \beta_2 March2020_t * CLOCMBS_s \\ & + \beta_3 Apr2020_t * TALFEligible - ExCLOCMBS_s + \beta_4 Apr2020_t * CLOCMBS_s + \beta_5 Dec2020_t * \\ & TALFEligible - ExCLOCMBS_s + \beta_6 Dec2020_t * CLOCMBS_s + \gamma_0 SubscriptionMonths_t * \\ & TALFEligible_s + \varepsilon_{s,t} \end{aligned} \quad (2)$$

$\Delta Issuance$ is the change in the issuance of ABS security "*s*" from the prior month, and αs and αt are the security and time period fixed effects, respectively. The announcement, expiration, and subscription dummies have been replaced by the relevant month dummies. The eligibility dummies are defined in the same manner as before.

[a] Specifically, we use the White period method that assumes errors for a cross-section are heteroskedastic and serially correlated.

program, our estimates are likely mostly to identify the effects of the TALF announcements and not those of other Fed announcements.

A list of TALF-eligible and TALF-ineligible securities used in the analysis is provided in Appendix 1.

Results from the regressions are reported in Table 4. Column 1 of the table reports results when omitting the fixed effects. We find that, following the March 23 announcement, spreads of all TALF-eligible securities declined significantly relative to securities not qualifying for the TALF. Even spreads of CLO and CMBS securities that were not TALF-eligible at the time but became eligible subsequently decreased by almost 90 basis points. This result might suggest that markets anticipated these securities would be included in the TALF. There is no evidence of a broader spillover to ABS markets since the standalone March announcement dummy is not significant. Following the April 9 announcement, the spreads of CLO and CMBS securities that became eligible declined a further 20 basis points, with no further declines in other TALF-eligible securities. The April announcement dummy is negative and significant, which may suggest a broad decline in ABS spreads on this day, but this result is obtained without accounting for security-specific characteristics. We discuss the results for TALF subscriptions and the December expiration event below.

In column 2 of Table 4, we add the security fixed effects and find that the results are mostly unchanged. This means that the better performance of TALF-eligible securities is due to their eligibility feature and not other differences with TALF-ineligible securities. One exception is that the April announcement dummy is no longer significant, indicating that the prior result was due to differences in security characteristics unrelated to TALF. In column 3 of the table, we further add the time fixed effects which absorb all purely time-series variations, including the standalone announcement effects, and so the latter can no longer be estimated separately. Once again, the results are essentially unchanged, indicating that they are not driven by market and macro factors such as volatility and government policy changes.

By the time TALF subscriptions began, ABS spreads had already declined substantially and so further spread tightening on subscription dates may seem unlikely. Indeed, columns 1 to 3 of the table show that spreads of TALF-eligible securities do not experience incremental tightening on subscription dates. However, there appears to be a general decline in ABS spreads on these dates as the TALF subscription dummy is negative and significant in columns 1 and 2. We explore the idea that subscribed TALF-eligible securities benefitted from lower spreads on subscription dates. To this end, in column 4 of the table, we interact a dummy variable for TALF-subscribed securities with a dummy variable for the subscription date (see Table 1 for the subscriptions data). These results show that TALF-subscribed securities experienced additional moderate tightening on some dates (such as June 17, September 18, October 6, and October 21). One exception is August 19, when spreads of the CMBS security—the only one in our data that was subscribed to on that day—increased significantly. A possible explanation for this result is that market liquidity is generally poor in summer and CMBS liquidity worsened more relative to other ABS securities on August 19.

Importantly, we do not find significant spread increases for TALF-eligible securities in the weeks before and after December 31, 2020, when the TALF ceased making new loans once we include the security fixed effects (see column 2 of the table).[14] On the contrary, the average spread of ABS securities *decreases* on the December expiration date, as suggested by the negative and significant estimate of the December expiration event dummy. Indeed, in the first

Table 4
The Effect of the TALF on Changes in ABS Spreads

	(1)	(2)	(3)	(4)
Mar 23 Announcement	0.81	1.33		
	(0.06)	(0.09)		
Mar 23 Announcement x TALF ex CLO and CMBS	-43.93*	-44.62*	-44.62*	-44.65*
	(-1.89)	(-1.88)	(-1.83)	(-1.83)
Mar 23 Announcement x CLO and CMBS	-88.93*	-90.65*	-90.65*	-90.86
	(-1.86)	(-1.87)	(-1.81)	(-1.82)
Apr 9 Announcement	-0.62**	-0.09		
	(-2.27)	(-0.22)		
Apr 9 Announcement x TALF ex CLO and CMBS	-2.50	-3.19	-3.19	-3.22
	(-1.03)	(-1.27)	(-1.23)	(-1.24)
Apr 9 Announcement x CLO and CMBS	-20.00***	-21.72***	-21.72***	-21.93***
	(-5.46)	(-6.98)	(-6.79)	(-6.47)
Dec 31 Expiration	-5.12***	-4.59**		
	(-2.62)	(-2.23)		
Dec 31 Expiration x TALF ex CLO and CMBS	3.25*	2.56	2.56	
	(1.71)	(1.24)	(1.20)	
Dec 31 Expiration x CLO and CMBS	1.75	0.03	0.03	
	(0.84)	(0.01)	(0.01)	
TALF Subscriptions	-3.07***	-2.55**		
	(-3.33)	(-2.30)		
TALF Subscriptions x TALF	0.93	0.03	0.03	0.50
	(1.10)	(0.03)	(0.03)	(0.42)
Jun 17 x Jun 17 Subscriptions				-13.04***
				(-3.90)
Jul 6 x Jul 6 Subscriptions				-0.45
				(-0.55)
Jul 21 x Jul 21 Subscriptions				-2.83
				(-1.59)
Aug 4 x Aug 4 Subscriptions				-4.62
				(-1.62)
Aug 19 x Aug 19 Subscriptions				6.21***
				(6.68)
Sep 3 x Sep 3 Subscriptions				-4.74
				(-1.43)
Sep 18 x Sep 18 Subscriptions				-16.91***
				(-19.57)
Oct 6 x Oct 6 Subscriptions				-1.54*
				(-1.76)
Oct 21 x Oct 21 Subscriptions				-1.78***
				(-3.12)
Nov 5 x Nov 5 Subscriptions				0.45
				(0.39)

(Continued on next page)

Table 4 *(Continued)*

	(1)	(2)	(3)	(4)
Dec 10 x Dec 10 Subscriptions				1.01
				(1.21)
Security fixed effects	No	Yes	Yes	Yes
Time fixed effects	No	No	Yes	Yes
Adjusted *R*-squared	0.00	0.03	0.73	0.72

Source: Authors' calculations.

Notes: The table reports results from regressions of the changes in asset-backed security (ABS) spreads, using the specification in equation (1). "TALF" denotes a dummy variable for TALF-eligible securities. "TALF ex CLO CMBS" is a dummy variable that excludes collateralized loan obligations (CLO) and commercial mortgage-backed securities (CMBS) from the set of TALF-eligible securities. "CLO and CMBS" indicates a dummy variable for TALF-eligible CLO and CMBS. The sample is from January 2, 2020, to May 31, 2021, and contains 1,224 observations. ***, **, and * indicate significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

two months of 2021, spreads across asset classes continued to tighten following the end of new lending by TALF amid strong investor demand.

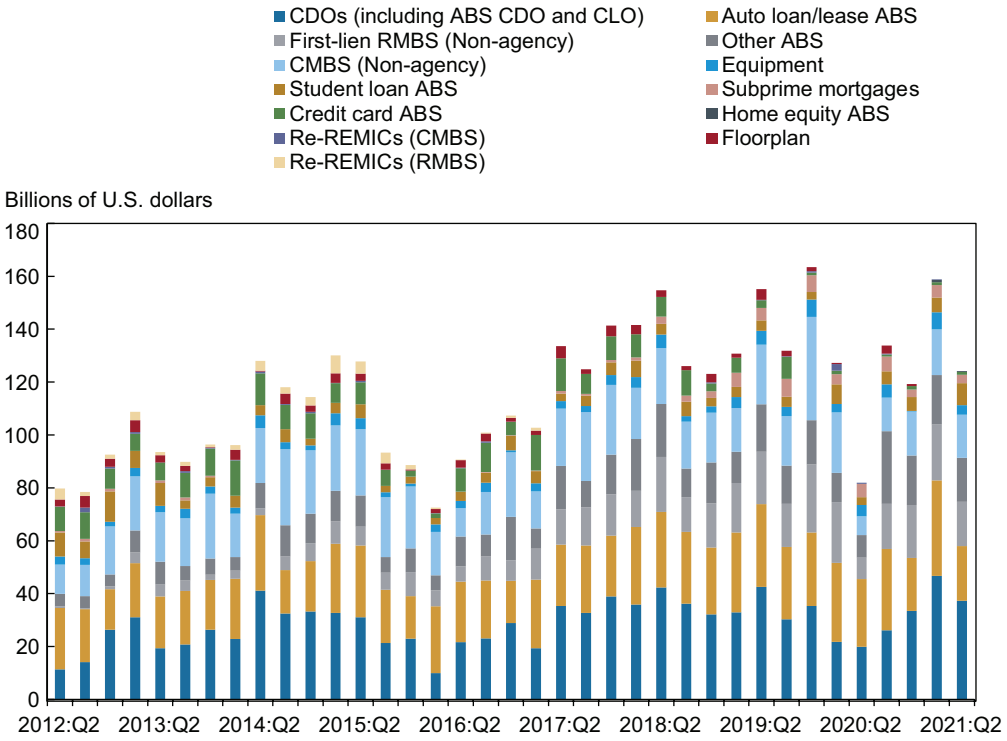
In 2021, as the economy continued to reopen, AAA spreads for major securitized asset classes fully retraced their COVID-induced spread widening and reached multi-year lows. Although spreads of lower-rated tranches have not fallen as much relative to those of senior tranches, the gap has continued to narrow. Credit curves, measured as the difference between spreads on senior and junior tranches, have continued to flatten and are now only marginally steeper than they were prior to the pandemic.

2.3 Improvements in ABS Issuance due to the TALF

ABS issuance suffered a broad slowdown in March and April of 2020, but the pace of issuance recovered in the second half of the year for most securitized products, as seen in Chart 4. For example, non-agency CMBS issuance dropped from $23 billion in the first quarter of 2020 to just $7 billion in the second quarter before recovering to about $16.5 billion by the fourth quarter. During the same period, student loan ABS issuance fell from over $7 billion in the first quarter to about $3 billion in the second quarter before recovering to $5.5 billion in the fourth quarter. CDO and CLO issuance fell from $35 billion in the fourth quarter of 2019 to $22 billion in the first quarter of 2020 before increasing to $33.5 billion in the fourth quarter.[15] In addition to TALF, market innovations such as shorter reinvestment periods may also have helped CLO issuance to recover.[16] As a result of the boost in issuance during the second half of 2020, issuance of non-agency securitized products in all of 2020 was about $460 billion compared to about $580 billion in 2019—a decline of only about 20 percent compared to the prior year.

Unlike other ABS sectors, issuance of auto ABS—a traditional benchmark ABS sector—remained resilient and steady at between $26 billion and $30 billion in the first three quarters of 2020. Auto ABS issuance is in large part related to auto sales volume, which recovered

Chart 4
U.S. Non-Agency Securitization Issuance, 2012:Q2 to 2021:Q1



Sources: Asset-Backed Alert's ABS database; Commercial Mortgage Alert's CMBS database.

Notes: ABS is asset-backed security. CMBS is commercial mortgage-backed security. RMBS is residential mortgage-backed security. CLO is collateralized loan obligation. CDO is collateralized debt obligation. REMIC is real estate mortgage investment conduit.

rapidly from April 2020. Other reasons for this good performance were debt relief by lenders including deferral, consumer forbearance and loan extensions, and government stimulus and support programs.[17]

Like our analysis of ABS spreads, we identify TALF-specific effects by comparing TALF-eligible and TALF-ineligible securities. However, due to inadequate data, the identification of TALF effects on issuance is less precise than the spread analysis. For example, the data are at the monthly frequency, so announcement effects are less precisely determined than when using weekly data. In addition, timing of securitization issuance is complicated by multiple factors, including access to lenders' other funding sources, the time required to accumulate collateral, and related capital market activities such as the structuring and placement of ABS notes. (Appendix 2 shows the list of eligible and ineligible securities used in the issuance regression.)

Table 5 shows the results of this analysis. When omitting the fixed effects (see column 1 of the table), we find that the standalone March 2020 dummy is negative and significant, indicating ABS issuances decrease significantly in March, as expected. However, issuance

Table 5
The Effect of the TALF on Changes in ABS Issuances

	(1)	(2)	(3)	(4)
March Announcement	-2.44***	-2.45**		
	(-2.88)	(-2.76)		
March Announcement x TALF ex CLO and CMBS	0.17	0.16	0.26	0.27
	(0.08)	(0.07)	(0.11)	(0.11)
March Announcement x CLO and CMBS	-0.10	-0.10	-0.10	-0.10
	(-0.06)	(-0.06)	(-0.05)	(-0.06)
April Announcement	-2.76	-2.78		
	(-1.50)	(-1.47)		
April Announcement x TALF ex CLO and CMBS	3.48*	3.51	3.61	3.60
	(1.76)	(1.73)	(1.71)	(1.70)
April Announcement x CLO and CMBS	2.72	2.71	2.70	2.74
	(1.49)	(1.44)	(1.35)	(1.37)
December Expiration	0.31	0.30		
	(1.09)	(1.21)		
December Expiration x TALF ex CLO and CMBS	0.75	0.77	1.00	
	(0.74)	(0.73)	(0.78)	
December Expiration x CLO and CMBS	0.27	0.27	0.29	
	(0.77)	(0.92)	(0.90)	
TALF Subscriptions	0.11	0.09		
	(1.44)	(1.21)		
TALF Subscriptions x TALF	-0.27	-0.26	-0.37	-0.40
	(-1.04)	(-0.94)	(-0.86)	(-0.67)
June x June Subscriptions				-2.99**
				(-2.26)
July x July Subscriptions				-1.46
				(-1.48)
August x August Subscriptions				2.59
				(1.54)
September x September Subscriptions				-2.21
				(-1.18)
October x October Subscriptions				-0.39
				(-0.28)
November x November Subscriptions				4.86**
				(2.72)
December x December Subscriptions				3.81***
				(3.64)
Security fixed effects	No	Yes	Yes	Yes
Time fixed effects	No	No	Yes	Yes
Adjusted *R*-squared	0.00	0.00	0.12	0.12

Source: Authors' calculations.

Notes: The table reports results from regressions of the changes in asset-backed security (ABS) spreads, using the specification in equation (1). "TALF" denotes a dummy variable for TALF-eligible securities. "TALF ex CLO CMBS" is a dummy variable that excludes collateralized loan obligations (CLO) and commercial mortgage-backed securities (CMBS) from the set of TALF-eligible securities. "CLO and CMBS" indicates a dummy variable for TALF-eligible CLO and CMBS. The sample is from January 2, 2020, to May 31, 2021, and contains 1,224 observations. ***, **, and * indicate significance at the 1 percent, 5 percent, and 10 percent levels, respectively.

of TALF-eligible securities is similar to issuance of TALF-ineligible securities, as shown by the insignificant coefficient of the interaction of the March dummy with the TALF-eligibility dummy. Since the March 2020 dummy includes the pre-TALF period when issuances essentially stopped, any positive effect of the TALF on March issuances is difficult to determine. During April 2020, issuances of TALF-eligible CLO and CMBS securities increase significantly relative to TALF-ineligible securities, while issuances of other TALF-eligible securities are similar to those of TALF-ineligible securities. We do not find significant declines in issuances of TALF-eligible securities following the expiration of the program at the end of the fourth quarter of 2020, nor do we find significant effects on issuances of ABS securities generally.

The results are similar after adding the security fixed effects (see column 2 of the table). One difference is that the better issuance performance of TALF-eligible CLO and CMBS securities is no longer significant in April 2020, although the magnitude and *T*-statistics remain similar. The significance of these effects is further reduced after adding the time fixed effects (see column 3 of the table). Thus, the positive April 2020 effects on CLO and CMBS issuance are mainly due to incomplete controls for differences in security characteristics and changes in market and macro factors.

Regarding TALF subscriptions, absent fixed effects (column 1 of the table), issuances of TALF-eligible securities do not increase incrementally on subscription dates. Did TALF-eligible securities that were subscribed to benefit from higher issuance during their subscription months? The result shows that TALF-subscribed securities experienced additional moderate increases during November and December 2020.

In 2021, as the economy continued to reopen, the issuance of ABS approached pre-COVID levels, as deals were oversubscribed, leading to the size of issuances being revised upwards and their offering at yields tighter than initially expected. Through April 2021, as the economy opened further, non-agency securitized product issuance was $220 billion, about 18 percent higher than in the same period in 2020 and significantly exceeding the five-year average in the 2016-20 period of $149 billion. Monthly issuance has approached pre-COVID levels and investor demand remains strong, with significant oversubscription and favorable pricing on new transactions.

3. What Did We Learn?

The TALF was used and successfully implemented previously during the financial crisis of 2007-09.[18] Even though the 2020 pandemic-induced market volatility was not triggered by stresses in the secured financial markets, unlike in the 2008 crisis, the previous iteration of TALF 1.0 provided a useful template for TALF 2.0. For example, spreads dropped significantly after the March 3, 2009, announcement of the first TALF 1.0 subscription date, which clarified the details of the program (Campbell et al. 2011). New ABS issuance picked up after the first subscription date (Covitz, Meisenzahl, and Pence 2021).[19] The success of TALF 1.0 bolstered market participants' confidence even before the operational details of TALF 2.0 had been worked out. Indeed, unlike TALF 1.0, spreads on ABS dropped immediately after the announcement of TALF 2.0, as we have shown.

While the structure of TALF 2.0 is largely similar to the 2009 program, one notable difference is that CLOs were not included as eligible collateral in TALF 1.0. Consequently, spreads on CLOs did not respond to TALF 1.0 announcements, whereas CLO spreads fell significantly after TALF 2.0 was announced on March 23, 2020—even before AAA-rated CLO tranches were made TALF-eligible.[20]

While the Fed had operated the TALF previously, there were several lessons learned from the later iteration of the program. The time between the program's announcement and the first TALF subscription was less than the five-month gap between the announcement and first subscription of TALF 1.0. Still, the three months between announcement and first subscription of TALF 2.0 was considerable, reflecting the new program's increased operational complexity. One reason is the larger number of TALF-eligible asset classes, which have varying market conventions. Additionally, in TALF 2.0 in 2020, the program held two subscriptions each month at which loan requests for all asset classes were accepted. By contrast, in 2009, the TALF only held one subscription for ABS and one subscription for CMBS each month. The switch to semi-monthly subscriptions further increased the operational complexity of the program.

The 2020 experience also demonstrates the value that the market ascribes to TALF program transparency. ABS market participants knew the basic structure of the TALF and were aware of its success in supporting the market in 2009. When the relaunch of the program was announced in March 2020, market confidence was bolstered and spreads for highly rated securitized products began to tighten immediately and tightened steadily until the TALF began operations. Even after the publication of the first iteration of the TALF Frequently Asked Questions on May 12, spreads for most highly rated securitization tranches did not change materially. The Fed published on the TALF page of its public website the eligibility determination for each CUSIP against which borrowers requested loans at each subscription, which helped borrowers gauge what collateral would be deemed eligible at future subscriptions.

4. Conclusion

We review the implementation and market impact of the TALF, one of several liquidity and credit facilities that the Fed created in response to the market dislocation emanating from the COVID-19 pandemic.[21] The announcement of the TALF resulted in significant improvements in the ABS market's functioning. Spreads of ABS declined broadly following the announcement of the TALF in March 2020, but spreads of TALF-eligible securities declined even more. Even spreads of CLO and CMBS—instruments that only became eligible for the TALF a month later—narrowed. Moreover, there is evidence that spreads of specific ABS that investors borrowed against in the TALF declined on their subscription dates throughout 2020.

Due to lower frequency data, we are unable to precisely identify TALF effects on ABS issuance. Moreover, if underlying economic activity is subdued, the incentive to issue is muted even if issuance spreads are attractive. Thus, it may not be so surprising that we do not find statistically significant evidence of an increase in issuance of TALF-eligible ABS relative to ineligible ABS.

Even with the Fed's prior experience in operating the TALF, the "time to market" (that is, the time between the announcement of the program and the first TALF subscription) was considerable (three months) due to the increased operational complexity of TALF 2.0. However, the Fed's focus on TALF transparency allowed TALF 2.0 to gain the confidence of market participants and played a part in the program's success in normalizing market functioning.

Appendix 1: List of Securities in ABS Spread Data

TALF-eligible securities are:

- Prime Auto AAA 3-Year
- CMBS 5-Year
- Card AAA 3-Year and 5-Year (Fixed and Floating Rates)
- Equipment AAA 3-Year
- CLO 4-5.5 Years
- Private Student Loan AAA 3-Year and 7-Year

The TALF-ineligible securities are:

- Federal Family Education Loan Program (FFELP) Securities
- Card BBB 5-Year (Fixed Rates)
- Prime Auto BBB 3-Year
- Subprime Auto AAA 2-Year and BBB 3-Year

Appendix 2: List of Securities in ABS Issuance Data

TALF-eligible securities are:

- Floorplan
- Equipment
- Student Loan ABS
- Credit Card ABS
- Auto Loan / Lease ABS
- CDO (including CDO and CLO)
- CMBS Conduit

The TALF-ineligible securities are:

- Miscellaneous (Esoteric ABS)
- Commercial Real Estate CDO and CLO
- CMBS Single Asset Single Borrower (SASB)

Notes

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[1] For the initial TALF announcement, see https://www.federalreserve.gov/newsevents/pressreleases/monetary20200323b.htm. The New York Fed TALF page contains links to all materials, detailed reporting, and subsequent board announcements: https://www.newyorkfed.org/markets/term-asset-backed-securities-loan-facility.

[2] An SPV is a separate legal entity created by an organization, typically to carry out a special purpose. See https://corporatefinanceinstitute.com/resources/knowledge/strategy/special-purpose-vehicle-spv/.

[3] For example, securitization funded around 45 percent of both credit card and auto loans in September 2008 (Covitz, Meisenzahl, and Pence 2021).

[4] For the provisions of Section 13(3), see https://www.federalreserve.gov/aboutthefed/section13.htm.

[5] For provisions of the CARES Act, see Public Law 116-136. https://www.congress.gov/116/plaws/publ136/PLAW-116publ136.pdf.

[6] A U.S. business that owns eligible collateral may borrow from the TALF if it (a) is created or organized in the United States or under the laws of the United States, (b) has significant operations in and a majority of its employees based in the United States, and (c) maintains an account relationship with a TALF Agent. See the TALF FAQ: https://www.newyorkfed.org/markets/term-asset-backed-securities-loan-facility/term-asset-backed-securities-loan-facility-faq.

[7] Additional details can be found in the TALF FAQ. https://www.newyorkfed.org/markets/term-asset-backed-securities-loan-facility/term-asset-backed-securities-loan-facility-faq.

[8] See the section "What Did We Learn" for a comparison of TALF 1.0 and TALF 2.0. For information on TALF 1.0, see https://www.newyorkfed.org/markets/talf.

[9] The survey results are reported on the Federal Reserve Board's website. https://www.federalreserve.gov/data/scoos.htm.

[10] There were twenty-two participating institutions in the Q1 2020 survey.

[11] For further details on the TALF expansion, see https://www.federalreserve.gov/newsevents/pressreleases/files/monetary20200409a1.pdf.

[12] For the list of Fed actions on April 9, see https://www.federalreserve.gov/newsevents/pressreleases/monetary20200409a.htm.

[13] For a list of Fed announcements on March 23, 2020, see https://www.federalreserve.gov/newsevents/pressreleases/monetary20200323b.htm.

[14] We define the "Dec. 31 Expiration" dummy variable to include both the week ending December 31, 2020, and the week ending January 7, 2021.

[15] See Kristen Haunss, "CLO Issuance Falls 48 Percent as Rush of Loan Downgrades Threatens Investor Distributions," *Yahoo! Finance*, April 17, 2020, https://finance.yahoo.com/news/clo-issuance-falls-48-rush-135437340.html.

[16] Regarding shorter reinvestment terms for CLOs, see https://www.fitchratings.com/research/structured-finance/short-reinvestment-terms-supporting-us-clo-issuance-19-06-2020.

[17] For further details, see https://www.msci.com/www/blog-posts/covid-stimulus-helped/02297638613 and http://www.spglobal.com/_assets/documents/ratings/research/100048329.pdf.

[18] See Ashcraft, Gârleanu, and Pedersen (2011) for an analysis of the 2008 version of TALF.

Notes (Continued)

[19] It is important to note that spreads widened more substantially and for a longer duration in 2008 compared with 2020, creating the potential for a bigger reversal in spreads after TALF 1.0 was implemented.

[20] Other factors may have contributed to the different behavior of CLO spreads in the two TALF episodes. These include: (1) investor appetite for complex securitized products was low in 2009, as evidenced by the low issuance volume of CLOs in 2009 and 2010; and (2) the size of the CLO market was substantially larger in 2020, indicative of CLOs being recognized as a major securitization asset class—a factor that may have influenced market participant perception of eventual inclusion.

[21] For an overview of the Fed's actions, see Michael Fleming, Asani Sarkar, and Peter Van Tassel, "The COVID-19 Pandemic and the Fed's Response," Federal Reserve Bank of New York *Liberty Street Economics*, April 15, 2020, https://libertystreeteconomics.newyorkfed.org/2020/04/the-covid-19-pandemic-and-the-feds-response/.

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