NO. 979
SEPTEMBER 2021

The Term Asset-Backed Securities Loan Facility

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FEDERAL RESERVE BANK *of* NEW YORK

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Abstract

The COVID-19 pandemic disrupted the asset-backed securities (ABS) market, resulting in higher spreads on ABS and briefly halting the issuance of some ABS. On March 23, 2020, the Federal Reserve established the Term Asset-Backed Securities Loan Facility (TALF) to support the flow of credit to consumers and businesses by re-enabling the issuance of ABS. In this paper, we describe how TALF works, how much it was used, and its effect on the issuance and spreads of TALF-eligible securities relative to those of TALF-ineligible securities. We find that both the introduction of TALF and its subsequent expansion were associated with statistically significant declines in the spreads of TALF-eligible relative to TALF-ineligible ABS. However, the facility did not have a statistically significant effect on issuance. Finally, we compare TALF with an earlier version of the facility that was implemented during the global financial crisis and discuss lessons learned from implementing the program.

Key words: TALF, COVID crisis, Fed facility, securitization, ABS market, Federal Reserve lending facilities

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To view the authors' disclosure statements, visit
https://www.newyorkfed.org/research/staff_reports/sr979.html.

Introduction

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 the issuance of most ABS asset classes. On March 23, 2020, the Fed established the Term Asset-Backed Securities Loan Facility (TALF) to support the flow of credit to consumers and businesses. The TALF facilitated the 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.

A different version of the TALF was announced in 2008 and implemented successfully during the global financial crisis (GFC). In this paper, "TALF" denotes the 2020 version while the GFC version of the program is referred to as TALF 1.0. We describe how TALF works, how much it was used and its effect on the issuance and spreads of TALF-eligible securities relative to those of TALF-ineligible securities. We find that both the introduction of TALF and its subsequent expansion was associated with statistically significant declines in the spreads of TALF-eligible ABS relative to -ineligible ABS. However, the facility did not have a statistically significant effect on issuance. In the final section of this paper, we compare the two versions of the program and discuss the lessons learnt from implementing the program.

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 balance sheet. 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 Figure 1 below). 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

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[1] For the initial TALF announcement, see
https://www.federalreserve.gov/newsevents/pressreleases/monetary20200323b.htm. The FRBNY TALF page contains links to all materials, detailed reporting, and subsequent board announcements. Term Asset-Backed Securities Loan Facility - FEDERAL RESERVE BANK of NEW YORK (newyorkfed.org).

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) that holds the loans and issues securitized debt, freeing up their capacity to make new loans.[2]

Figure 1: How Asset-Backed Securities are Created
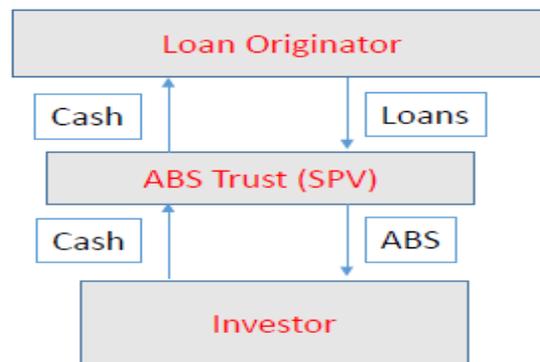
Note: The chart provides a simplified illustration of how an asset-backed security (ABS) is issued. SPV is the acronym for "Special Purpose Vehicle."

The importance of securitization as a funding source is evident in the large volume of ABS issued in 2019, when more than $300 billion were brought to market. After a seasonal lull in December 2019, ABS issuance was on the upswing in January and February of 2020 (see chart below). However, as coronavirus cases surged and authorities imposed social distancing and shutdowns beginning in March 2020, the economic outlook became highly uncertain, disrupting the financial markets. Total ABS issuance declined more than 70% from February to April 2020 (see Figure 2).

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[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/

Figure 2: Issuance of Asset-Backed Securities: 2019 to May 2020
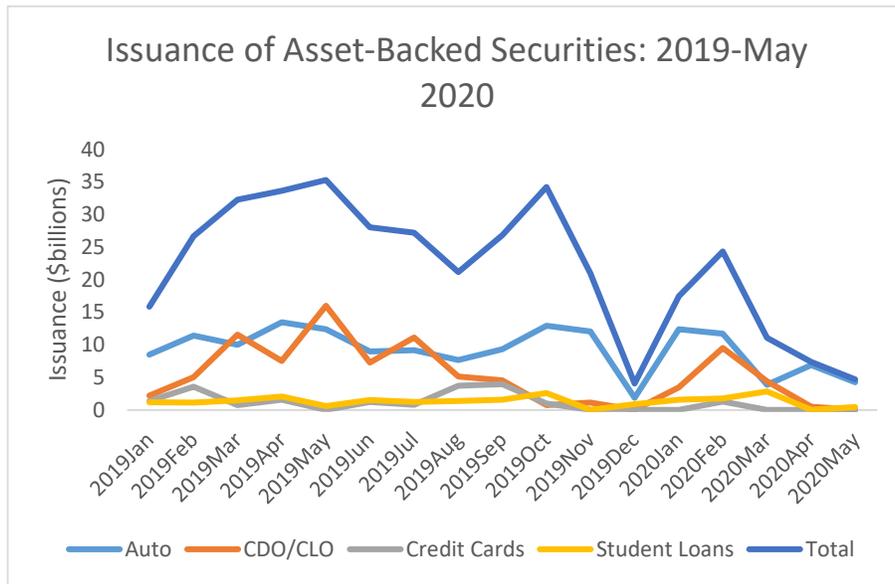
Note: The chart shows issuance of select ABS sectors.

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

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 Figure 3 below). For example, between February 20 and March 19, spreads on AAA-rated tranches of commercial mortgage-backed securities (CMBS) of 10-year maturity increased from by almost 200 basis points to about 280 basis points and spreads on AAA-rated tranches of 3-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 their ability to make loans.[3]

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

Figure 3: Spreads on AAA-rated ABS Tranches
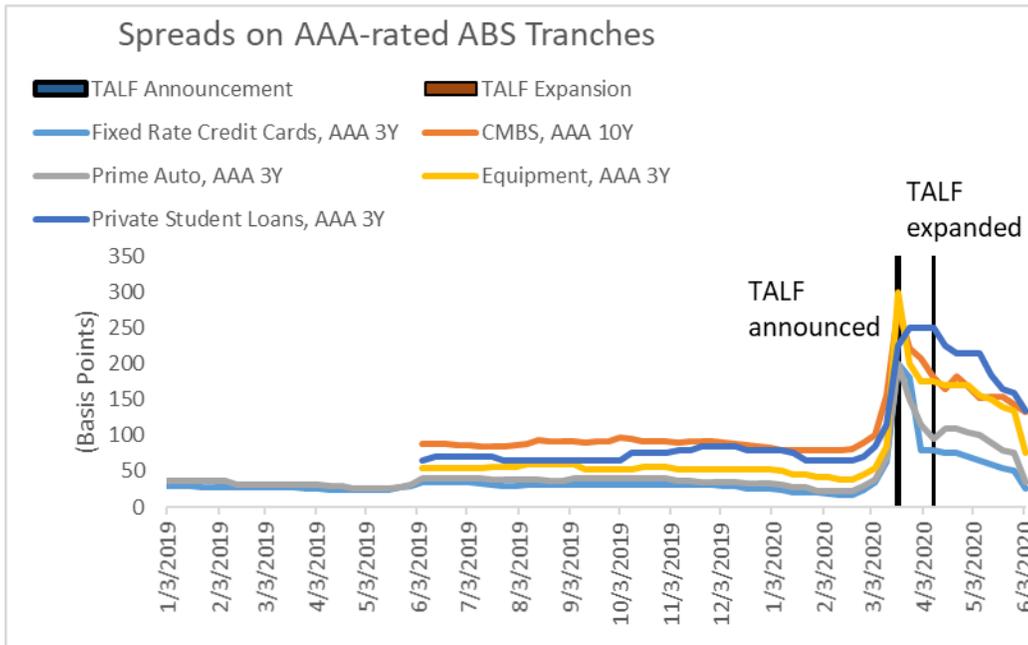
Note: Data is from Bloomberg.

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 Federal Reserve Bank of New York (FRBNY) 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]

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 FRBNY

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[4] For the provisions of Section 13(3), see https://www.federalreserve.gov/aboutthefed/section13.htm.
[5] For provisions of the CARES Act, see P.L. 116-136 Public Laws | Congress.gov | Library of Congress.

lent to a special purpose vehicle (TALF SPV), which provided funding to eligible borrowers that own eligible ABS (see Figure 4 below). [6] The TALF lent an amount equal to the market value of the ABS, less a haircut to account for the credit risk of the collateral, and 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 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 percent to 25 percent, depending on the asset class and average life of securities. Haircuts are calculated as a percentage of the underlying value of the ABS, implying that the TALF SPV did not take a loss unless price of the pledged ABS declined more than the haircut. The TALF only accepted

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[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 FAQs: Term Asset-Backed Securities Loan Facility - FEDERAL RESERVE BANK of NEW YORK (newyorkfed.org).

underlying assets or ABS structural features that are relatively simple and safe so as to further reduce the risk of loss to the taxpayer.[7]

Figure 4: How TALF Works
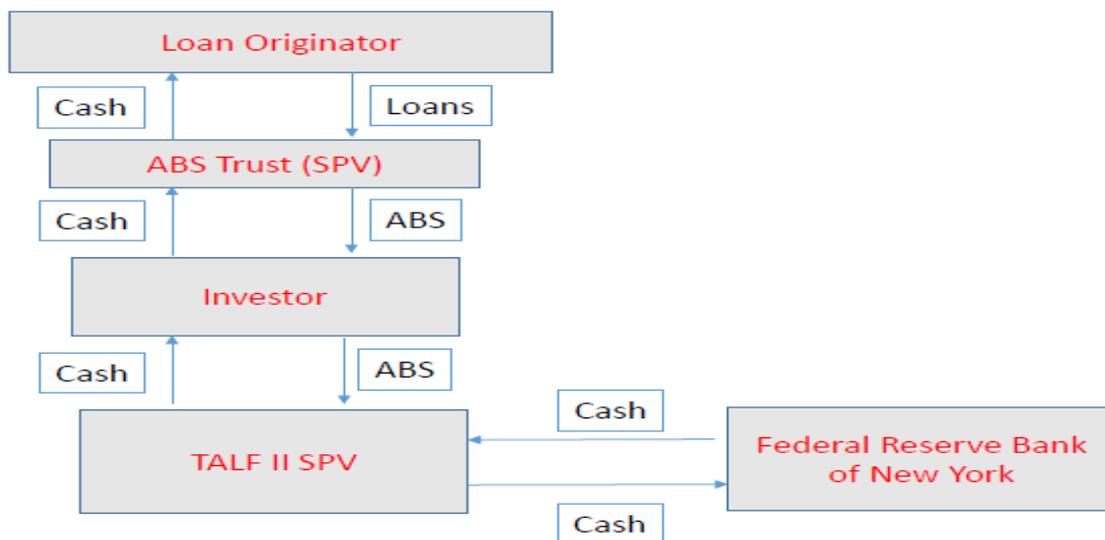
Note: The chart provides a simplified illustration of how investors borrow from TALF using an asset-backed security (ABS). SPV is the acronym for "Special Purpose Vehicle."

Approximately twice each month, borrowers were able to request one or more three-year TALF loans. TALF loans were non-recourse to the ABS investor– that is, if the investor did not repay the loan, remedies for TALF SPV is limited to enforcing its rights in the 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 CLOs were provided as collateral, it was150 basis points plus the 30-day average of the secured overnight financing rate (SOFR). As of December 31, 2020, the TALF closed for new loan extensions.

To What Extent was the TALF Utilized?

Since TALF loan terms were designed to be attractive during times of stress but not otherwise, its utilization tracked the recovery of securitization markets – that is, TALF was used extensively

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[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

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 et al, 2021). The activities of these return-sensitive investors facilitated the restoration of securitization market functioning, in line with the objectives of TALF.

Covitz et al. (2021) document three types of return-sensitive investors in TALF who accounted for 83 percent of all loans: TALF-only funds, fixed life partnerships, and hedge funds with TALF-only borrowers. TALF-only funds are investment vehicles established by asset managers for the express purpose of borrowing from TALF on behalf of their investors. Immediately following the announcement of TALF, market participants expected TALF returns similar to that 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 $30-50 billion.[8] These projected yield levels generated a lot of interest from market participants, and there was aggressive marketing of TALF-only strategies that would generate return by utilizing TALF financing (assumed to be cheaper than market financing). However, tighter spreads following the announcement of TALF made TALF-only strategies less attractive and consequently TALF-only funds had minimal participation in the first subscription. To avoid returning uninvested funds back to investors, they subsequently returned to TALF and became a major borrower from the facility.

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 floor plan 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 and market participants expected low TALF utilization for most traditional AAA-rated TALF-eligible ABS such as prime auto loans and credit cards due to unattractive TALF yields. Consistent with this interpretation, TALF

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[8] See the section on "What Did We Learn" for a comparison of TALF 1.0 and TALF 2.0. For information on TALF 1.0, see Term Asset-Backed Securities Loan Facility - FEDERAL RESERVE BANK of NEW YORK (newyorkfed.org)].

utilization was dominated by legacy CMBS and SBA securitizations, where spread tightening occurred more slowly.

Table 1: TALF Loans Requested at Each Subscription

Amount ($millions)

Sector	Subscription Dates 17-Jun	6-Jul	21-Jul	4-Aug	19-Aug	3-Sep	18-Sep	6-Oct	21-Oct	5-Nov	24-Nov	10-Dec
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: Term Asset-Backed Securities Loan Facility Rates, TALF rates - FEDERAL RESERVE BANK of NEW YORK (newyorkfed.org)

How did Markets Respond to the Announcement of TALF?

The liquidity backstop provided by TALF appears to have played a key role in restoring investor confidence at a time of great uncertainty, mitigating fears of spread widening even before the program began operations. 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, and the pace of activity only picked up in the second half of 2020. The liquidity provided by the TALF provided limited support to securitization issuance as, without increased economic activity, generation of new loans was naturally constrained.

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 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 23

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

participants that account for almost all dealer financing of dollar-denominated securities to non-dealers and are the most active intermediaries in over-the-counter (OTC) derivatives markets.[10]

The Q2 2020 survey indicates worsening secured funding terms and liquidity conditions for most dealers for ABS market transactions during the period February to May 2020. A majority of dealers reported heightened funding demands, 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 worst affected sectors during the pandemic), about two-thirds of dealers reported better liquidity conditions between mid-May and mid-August of 2020 versus more than 50% 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 Q4 2020 and Q1 2021.

Table 2: Funding and Liquidity Conditions in Secured Financing Markets: 2020-2021

Panel A: Demand for Funding of Securitized Financing Transactions

Survey dates: When conducted Period of change	Securities referenced	Increased or Decreased?	% 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%
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%
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?	% 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%
Nov 10–26 2020 Sep-Nov 2020	CMBS	Better	Over 50%
Feb 8 - 22, 2021 Dec 2020 – Feb 2021	Non-agency RMBS CMBS Consumer ABS	Better Better Better	About 60% About 50% About 80%

Panel C: Liquidity Conditions

Survey dates: When conducted Period of change	Securities referenced	Better or Worse?	% 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% >80%
Aug 11-20, 2020 Mid-May – mid-Aug 2020	Consumer ABS CMBS and Non-agency RMBS	Better Better	About two-third About 50%
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, Q12020 – Q12021.

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. These responses are summarized in Table 3. The dealers indicated improved funding terms independent of TALF-eligibility, reporting 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.

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

Survey dates: When conducted Period of change	Changes relative to mid-March in non-agency CMBS of	
	Funding terms (% of dealers, higher/lower, term type, TALF-eligibility)	Liquidity conditions (% of dealers, better/worse, TALF-eligibility)
Aug 11-20, 2020 Mid-May – mid-Aug 2020	About 50%; lower, collateral spreads; TALF -eligible & ineligible About 25%; lower, haircuts; TALF -eligible & ineligible About one-third; higher, max funding amount & maturity; TALF -eligible & ineligible	About one-third, better, TALF-eligible Same, TALF-ineligible

Source: Senior Credit Officer Opinion Survey (SCOOS) on Dealer Financing Terms, Q32020.

Improvements in ABS Spreads due to 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 seen from Figure 5 below. For example, between March 23 and April 9, spreads on AAA-rated, 5-year tranches of CMBS dropped from 300 basis points to 185 basis points, and AAA-rated, 3-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.

Figure 5: AAA Securitization Spreads

Select AAA Securitization Spreads

Data Source: Courtesy J.P. Morgan Chase & Co., Copyright 2021, FRBNY Staff Analysis
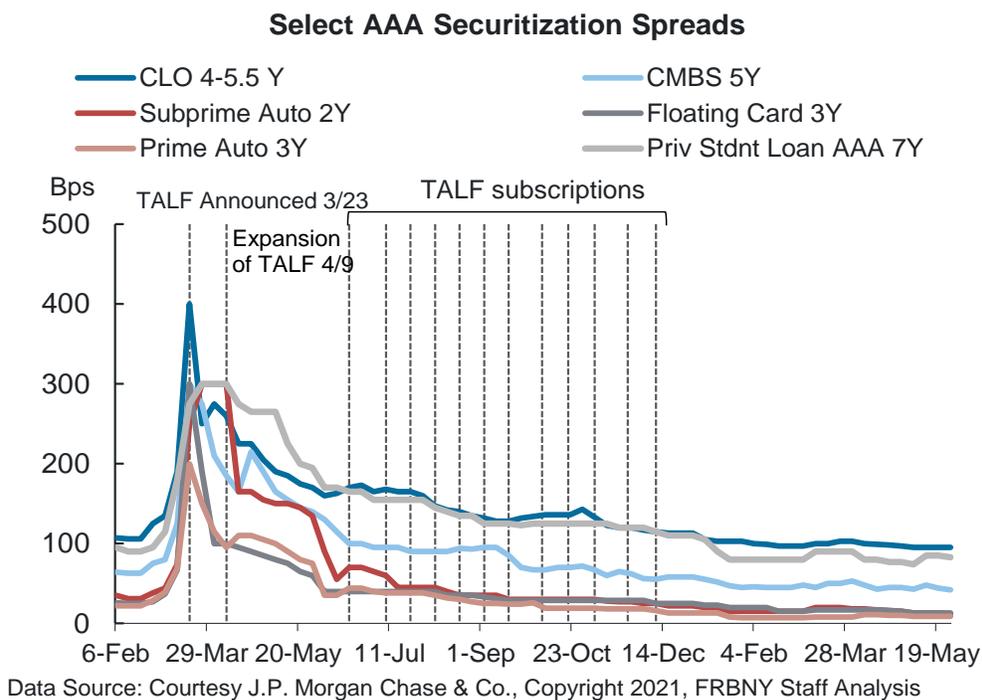
Notes: The chart shows the spreads of select ABS between February 2020 and May 2021.

On April 9, the asset classes eligible for the TALF were expanded to include certain types of CMBS and collateralized loan obligations (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 announcement of new Fed actions on April 9.[12] For example, spreads of 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 continued to

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[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.

narrow alongside. By the end of the year, when TALF closed for new loan extensions on December 31, 2020, spreads were close to pre-pandemic levels.

Identifying the effects of TALF on ABS spreads in the presence of market volatility and macro policy changes that occurred during our sample period, is challenging. Further, the Fed announced a slew of additional measures on March 23 to support households, businesses, and the US economy.[13] To better identify TALF effects, we estimate a regression to compare spread changes of TALF-eligible and -non-eligible securities (see the Box for a formal description of the regressions). Further, we use time fixed effects which absorb all purely time-series variations in spreads 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 being compared is their TALF-eligibility. Since the TALF-eligible securities were not eligible for any other Fed program, our estimates are likely to mostly identify the effects of the TALF announcements and not those of other Fed announcements.

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

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

Table 4: Effect of TALF on Changes in ABS Spreads

	(1)	(2)	(3)	(4)
March 23 Announcement	0.81	1.33		
	(0.06)	(0.09)		
March 23 Announcement x TALF ex CLO and CMBS	-43.93*	-44.62*	-44.62*	-44.65*
	(-1.89)	(-1.88)	(-1.83)	(-1.83)
March 23 Announcement x CLO and CMBS	-88.93*	-90.65*	-90.65*	-90.86*
	(-1.86)	(-1.87)	(-1.81)	(-1.82)
April 9 Announcement	-0.62**	-0.09		
	(-2.27)	(-0.22)		
April 9 Announcement x TALF ex CLO and CMBS	-2.50	-3.19	-3.19	-3.22
	(-1.03)	(-1.27)	(-1.23)	(-1.24)
April 9 Announcement x CLO and CMBS	-20.00***	-21.72***	-21.72***	-21.93***
	(-5.46)	(-6.98)	(-6.79)	(-6.47)
December 31 Expiration	-5.12***	-4.59**		
	(-2.62)	(-2.23)		
December 31 Expiration x TALF ex CLO and CMBS	3.25*	2.56	2.56	
	(1.71)	(1.24)	(1.20)	
December 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)
June 17 x Jun 17 Subscriptions				-13.04***
				(-3.90)
July 6 x July 6 Subscriptions				-0.45
				(-0.55)
July 21 x July 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 Spe 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 Nov5 Subscriptions				0.45
				(0.39)
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

Notes: The table reports results from regressing the change in 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 CLO and 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.

Results from the regressions are reported in Table 4. Column one of the table reports results when omitting the fixed effects (see the Box for a formal description of the regressions). We find that, following the March 23 announcement, spreads of all TALF-eligible securities decline significantly relative to TALF-ineligible securities. 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 to be included in 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, decline 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 two 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 three 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 the TALF subscriptions began, ABS spreads had already declined substantially and so further spread tightening on subscription dates may seem unlikely. Indeed, columns one to three 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 one and two. We explore the idea that TALF-eligible securities that were subscribed to benefitted from lower spreads on subscription dates. To this end, in column four 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 (i.e., June 17, September 18, October 6 and 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 following December 31, 2020, when the TALF ceased making new loans once we include the security fixed effects (see column two of the table). The average spread of ABS securities increases during the December expiration date, as suggested by the positive and significant estimate of the December expiration event dummy. However, since this result is obtained without including the time fixed effects, it may be attributable to the poor market liquidity at the end of the year. Indeed, spreads across asset classes continued to tighten following the end of new lending by TALF amid strong investor demand in the first two months of 2021.

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.

Improvements in ABS Issuance due to 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 Figure 6 below. For example, non-agency CMBS issuance dropped from $23 billion in Q1 2020 to just $7 billion in Q2 2020 before recovering to about $16.5 billion by Q4 2020. During the same period, student loan ABS issuance fell from over $7 billion in Q1 to about $3 billion in Q2 before recovering to $5.5 billion in Q4. CDO and CLO issuance fell from $35 billion in Q4 2019 to $ $22 billion in Q1 2020 before increasing to $33.5 billion in Q4.[14] In addition to TALF, market innovations such as shorter reinvestment periods may also have helped CLO issuance to recover.[15] As a result of the boost in issuance during the second half of 2020, issuance of non-agency securitized

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[14] See CLO issuance falls 48% as rush of loan downgrades threatens investor distributions (yahoo.com).
[15] Regarding shorter reinvestment terms for CLOs, see https://www.fitchratings.com/research/structured-finance/short-reinvestment-terms-supporting-us-clo-issuance-19-06-2020.

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.

Figure 6: US Non-Agency Securitization Issuance 2Q2012 to 1Q2021

Source: Asset-Backed Alert's ABA Database, Commercial Mortgage Alert's CMBS Database
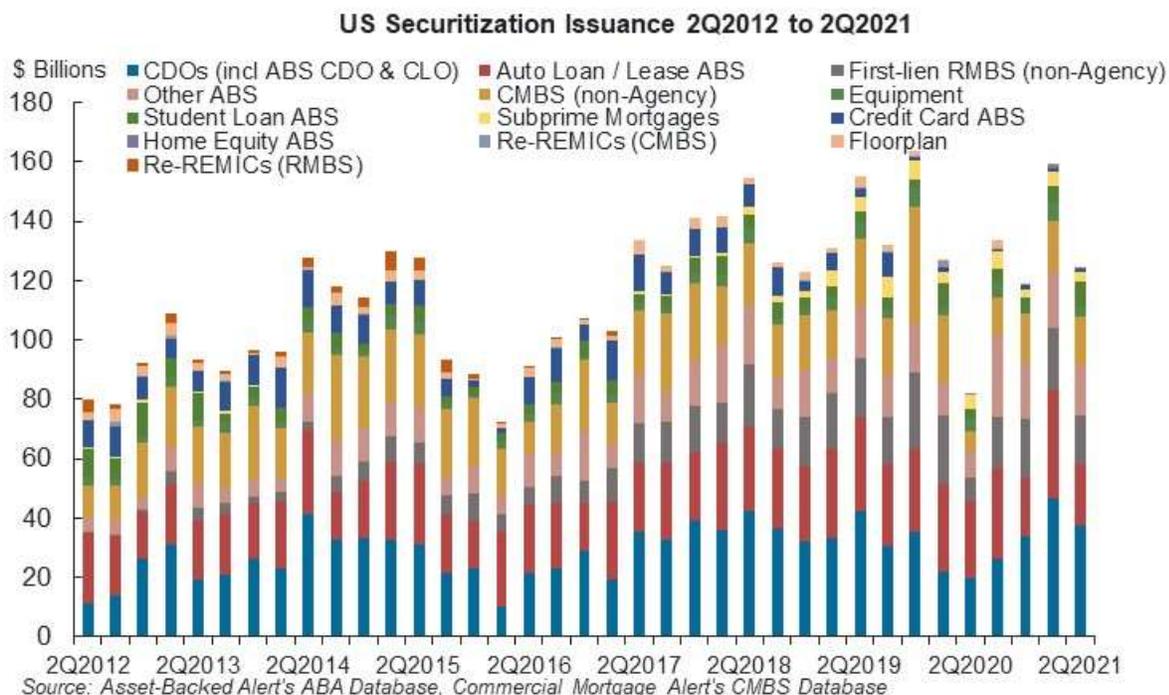
Source: Asset-Backed Alert's ABS database, Commercial Mortgage Alert's CMBS database.

Unlike other ABS sectors, issuance of auto ABS – a traditional benchmark ABS sector – remained resilient and remained 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 rapidly from April 2020. Other reasons for this good performance are debt relief by lenders including deferral, consumer forbearance and loan extensions and government stimulus and support programs.[16]

Like our analysis of ABS spreads, we identify TALF-specific effects by comparing TALF-eligible and -ineligible securities. However, due to inadequate data, the identification of TALF effects on issuance is less precise compared to the spread analysis. For example, the data is at the monthly frequency, so announcement effects are less precisely determined than when using

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

weekly data. In addition, timing of securitization issuance is complicated by multiple factors, including access to lenders' other funding sources, the time it requires to accumulate collateral and related capital market activities, such as structuring and placement of ABS notes. The list of TALF-eligible and -ineligible securities for the issuance regression is shown in Appendix 2.

The results are shown in Table 5. When omitting the fixed effects (see column one 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 of TALF-eligible securities was like those 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 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 issuance 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 Q4 2020 expiration of the program, nor do we find significant effects on issuances of ABS securities generally.

Table 5: Effect of TALF on Changes in ABS Issuances

	(1)	(2)	(3)	(4)
March 2020	-2.44***	-2.45**		
	(-2.88)	(-2.76)		
March 2020 x TALF ex CLO and CMBS	0.17	0.16	0.26	0.27
	(0.08)	(0.07)	(0.11)	(0.11)
March 2020 x CLO and CMBS	-0.10	-0.10	-0.10	-0.11
	(-0.06)	(-0.06)	(-0.05)	(-0.06)
April 2020	-2.76	-2.78		
	(-1.50)	(-1.47)		
April 2020 x TALF ex CLO and CMBS	3.48*	3.51	3.61	3.60
	(1.76)	(1.73)	(1.71)	(1.70)
April 2020 x CLO and CMBS	2.72	2.71	2.70	2.74
	(1.49)	(1.44)	(1.35)	(1.37)
December 2020	0.31	0.30		
	(1.09)	(1.21)		
December 2020 x TALF ex CLO and CMBS	0.75	0.77	1.00	
	(0.74)	(0.73)	(0.78)	
December 2020 x CLO and CMBS	0.27	0.27	0.29	
	(0.77)	(0.92)	(0.90)	
TALF Subscription Months	0.11	0.09		
	(1.44)	(1.21)		
TALF Subscription Months x TALF	-0.27	-0.26	-0.37	-0.40
	(-1.04)	(-0.94)	(-0.86)	(-0.67)
June 2020 x June Subscriptions				-2.99**
				(-2.26)
July 2020 x July Subscriptions				-1.46
				(-1.48)
Aug 2020 x Aug Subscriptions				2.59
				(1.54)
Sep 2020 x Sep Subscriptions				-2.21
				(-1.18)
Oct 2020 x Oct Subscriptions				-0.39
				(-0.28)
Nov 2020 x Nov Subscriptions				4.86**
				(2.72)
Dec 2020 x Dec Subscriptions				3.81***
				(3.64)
Security Fixed Effect	No	Yes	Yes	Yes
Time Fixed Effect	No	No	Yes	Yes
Adjusted R-squared	0.00	0.00	0.12	0.12

Notes: The table reports results from regressing the change in ABS issuance, using the specification in equation (2). "TALF" denotes a dummy variable for TALF-eligible securities "TALF ex CLO CMBS "is a dummy variable that excludes CLO and 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 2015 to June 2021 and contains 688 observations.

The results are similar after adding the security fixed effects (see column two 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 three 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 one 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 offered at yields tighter than initially expected. In 2021 through April, as the economy continued reopening, non-agency securitized product issuance was $220 billion, about 18 percent higher than the same period last year, significantly exceeding the 5-year average in 2016-2020 of $149 billion. Monthly issuance has approached pre-COVID levels, and investor demand remains strong, with significant oversubscription and favorable pricing on new transactions.

What Did We Learn?

The TALF was used and successfully implemented previously during the financial crisis of 2007-2009.[17] Even though the 2020 pandemic-induced market volatility was not triggered by stresses in the secured financial markets – unlike the 2008 crisis– the previous iteration of TALF 1.0 provided a useful template for the TALF 2.0. For example, spreads dropped significantly after the March 3, 2009 announcement of the first TALF 1.0 subscription date clarified the details of the program (Campbell et al. 2011), and new ABS issuance picked up after the first subscription date (Covitz et al. 2021).[18] 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

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[17] See Ashcraft, Garleanu and Pedersen (2011) for an analysis of the 2008 version of TALF.
[18] It is important to note that spreads widened more substantially and for a longer duration in 2008 as compared to 2020, creating the potential for a bigger reversal in spreads after TALF 1.0 was implemented.

did not respond to any 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.[19]

While the Fed had operated the TALF previously, there were several lessons learned from the current iteration of the program. The time between the announcement of the program and the first TALF subscription – while less than the gap between the announcement and first subscription of TALF 1.0 (five months) -- was considerable (three months) due to the increased operational complexity of the new TALF. One reason is the larger number of TALF-eligible asset classes which have varying market conventions. Additionally, in TALF 2020, the program held two subscriptions each month at which loan requests for all asset classes were accepted, whereas 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.

Another lesson learned relates to the value that the market ascribes to transparency of the TALF program. Because market participants knew the basic structure of TALF and that it had been successful in supporting the market in 2009, when the re-launch 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 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.

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[19] Other factors may have contributed to the different behaviors 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 -- which may have influenced market participants' perception of eventual inclusion.

Conclusion

We review the implementation and market impact of TALF, one of several liquidity and credit facilities that the Fed created in response to the market dislocation emanating from the COVID-19 pandemic.[20] The announcement of TALF resulted in significant improvements in the ABS market's functioning. Spreads of ABS declined broadly following the announcement of TALF in March 2020, but spreads of TALF-eligible securities declined even more. Even spreads of CLO and CMBS -- that only became eligible for TALF a month later – declined. Moreover, there is evidence that spreads of specific ABS that investors borrowed against in TALF declined on their TALF subscription dates during all of 2020.

Due to lower frequency data, we were unable to precisely identify TALF effects on ABS issuance. Moreover, if the underlying economic activity is muted, 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 the issuance of TALF-eligible relative to - ineligible ABS.

Even with the Fed's prior experience in operating TALF, the "time to market" (i.e., 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, a focus on 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.

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[20] For an overview of the Fed's actions, see https://libertystreeteconomics.newyorkfed.org/2020/04/the-covid-19-pandemic-and-the-feds-response.html

Box: 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":

$$\Delta Spread_{s,t} = \alpha_0 + \alpha_s + \alpha_t + \beta_1 MarchAnn_t * TALFEligible - ExCLOCMBS_s$$
$$+ \beta_2 MarchAnn_t * CLOCMBS_s + \beta_3 AprAnn_t * TALFEligible - ExCLOCMBS_s$$
$$+ \beta_4 AprAnn_t * CLOCMBS_s + \beta_5 DecAnn_t * TALFEligible - ExCLOCMBS_s$$
$$+ \beta_6 DecAnn_t * CLOCMBS_s + \gamma_0 Subscriptions_t * TALFEligible_s + \varepsilon_{s,t}$$

(1)

ΔSpread is the change in the spread of ABS security "s" from the prior week, and α_s and α_t 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 0 otherwise, and

- Subscriptions=1 for TALF subscription dates (see Table 1) and 0 otherwise.

The regression is estimated with OLS and the results are reported in Table 4. T-statistics based on robust standard errors are reported in parenthesis.[1]

Issuance Regressions

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

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

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

$$(2)$$

ΔIssuance is the change in the issuance of ABS security "s" from the prior month, and α_s and α_t 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.

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Appendix 1: List of TALF-eligible and -ineligible 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:

- 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 TALF-eligible and -ineligible securities in ABS issuance data

TALF-eligible securities are:

- Floorplan
- Equipment
- Student Loan ABS
- Credit Card ABS
- Auto Loan / Lease ABS
- CDOs (including CDO & CLO)
- CMBS conduit

The TALF-ineligible securities are:

- Miscellaneous (esoteric ABS)
- Commercial real estate (CRE) CDO & CLO
- CMBS Single Asset Single Borrower (SASB)