Have Central Bank Interventions Permanently Repriced Corporate Credit?

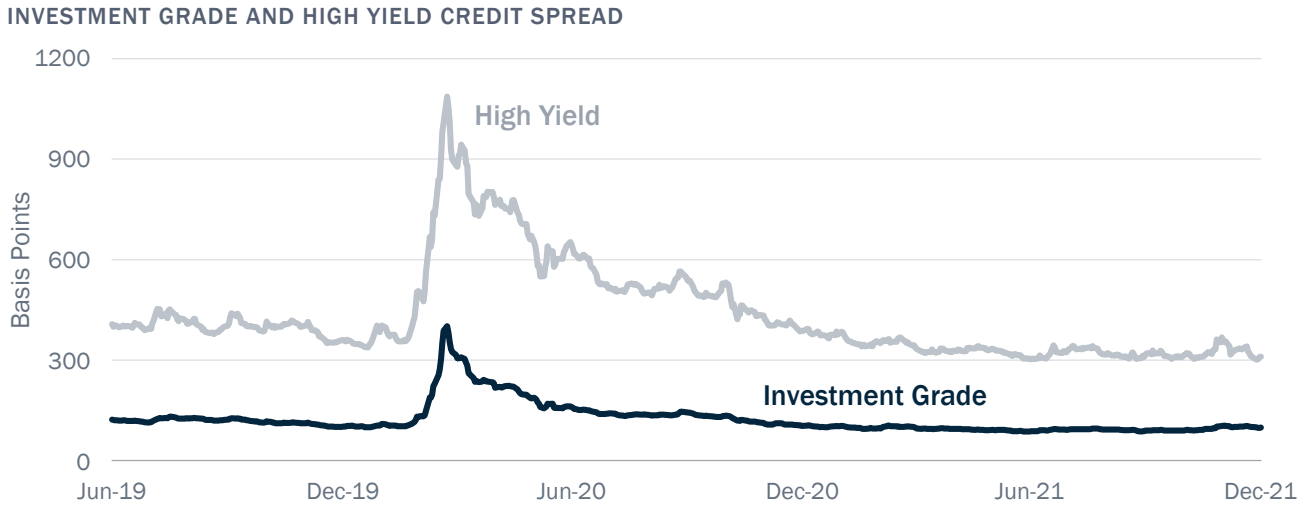
Our analysis of market pricing finds no evidence the Federal Reserve's interventions in the corporate bond market have had an ongoing impact on US credit spreads. In the eurozone, where ECB intervention started four years earlier and has a firm mandate, there is some evidence of an impact, but it is less than conclusive.

MacKay Shields
A New York Life Investments Company

Introduction

As part of its response to severe market and economic dislocations in the early days of the pandemic, the Federal Open Market Committee (FOMC) announced primary and secondary market purchase programs for corporate bonds. These programs were aimed at supporting corporations' access to credit, and improving liquidity in the primary and secondary corporate bond markets. The programs had an almost immediate impact on liquidity and valuations in the investment grade market, where the purchases were concentrated. And even though the Federal Reserve purchased only token amounts of fallen angels and high yield Exchange Traded Funds (ETFs), the actions served to stabilize the high yield market as well. Over the course of the program, investment grade (IG) and high yield (HY) companies were able to access primary markets, doing so in record amounts to refinance their debt at historically low interest rates. The Federal Reserve backstop also boosted investor confidence in the corporate bond market, leading spreads on IG and HY indices to quickly retrace to pre-pandemic levels (Figure 1). The programs were so successful in restoring investor confidence that ultimately, out of a secondary market purchase commitment of up to $250 billion, the Federal Reserve only purchased $13.7 billion of corporate bonds and ETFs. While these and other Federal Reserve responses to the pandemic prevented much worse market and economic outcomes, the corporate bond purchase programs have not been without their critics. Some have stated the corporate bond market interventions have permanently impacted price discovery, as investors may now assume corporations are ring-fenced from future economic shocks. Now that the Federal Reserve has crossed a long-standing red line and purchased credit instruments, they will most certainly do so during future recessions or financial crises, so the logic goes. Even if this turns out not to be the case, the expectation of future intervention can still impact corporate credit valuations, at least until that expectation is disappointed. The lower cost of credit for corporations could thus encourage excessive leverage, which could very well sow the seeds of a future crisis.

FIGURE 1: Fed Intervention Stabilizes Credit Markets



As of December 31, 2021.
SOURCE: Bloomberg.

Other investors may believe there is a higher hurdle to Federal Reserve intervention in credit markets; that is, it would take a tail event such as a major financial crisis for the central bank to bring back the corporate purchase facilities. Even so, this expectation could impact compensation for bearing long-term credit risk even during normal times, resulting in a new, lower equilibrium for credit risk compensation.

In addition to financial stability concerns, the perception of a Federal Reserve backstop for corporate credit can have implications for investment strategy. And these implications are of immediate import, given that recessions in both the US and eurozone are likely over the next year. For example, investors who typically underweight corporate credit markets late in the economic cycle on expectations of spread widening may instead discover the activation of a corporate purchase program prevents spreads from widening as much as they typically would, as the economy weakens. Alternatively, such investors stand to benefit if market assumptions of a "Fed put" in credit markets turn out to be incorrect. Thus, understanding the extent to which market valuations currently reflect expectations of future central bank interventions, and the conditions under which the Federal Reserve might indeed intervene during future shocks, will remain of importance to credit investors.

In what follows, we first review corporate bond purchase activity under the Fed's credit programs during the pandemic. We also discuss corporate bond purchases in the euro area, where the European Central Bank's authority to purchase corporate bonds is clearer, and more independent of the political process. Comparisons with bond purchases in the euro area can also be useful in our analysis of spreads, model-based valuations, and options pricing. For example, if investors now assume a permanent Federal Reserve backstop of corporate credit, we might observe a persistent repricing of US credit relative to euro-area credit, where a corporate backstop has been in place for longer. We also provide a separate text box on the legal framework for corporate credit purchases by the Federal Reserve, as well as the political context of purchases, as these considerations will influence the potential for future interventions in credit markets. By way of contrast, the box includes some discussion of the legal framework for ECB corporate bond purchases.

Following our review of corporate bond purchase activity in the US and euro area, we move on to the heart of the paper, where we look for evidence that credit market interventions have left an enduring "footprint" on corporate debt valuations. Here we focus on spread levels, pricing of credit indices relative to model valuations, and options pricing. Comparison of current spreads to valuation models, as well as options skew, can provide insights into whether Fed and ECB purchases of credit instruments continue to influence pricing.

Finally, we conclude with a summary of our findings. Overall, we find no clear evidence that Fed purchases of corporate bonds during the health crisis left an ongoing mark on the pricing of corporate credit risk. In contrast, we find some evidence of this in the eurozone, though the evidence is far from conclusive. This could stem from the fact that ECB purchases of corporate bonds are a standing, if unconventional, component of the ECB toolkit. In fact, the ECB had restarted its corporate bond purchase program even before the pandemic. The clearer legal and political framework for ECB purchases of corporate bonds, as well as the longer history of such purchases, has likely created a market perception that the ECB is much more likely than the Fed to extend quantitative easing into the corporate bond market during a future recession or period of market turmoil.

Authors

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A Review of the Corporate Purchases

Federal Reserve

"If the Fed has opened up a Pandora's box, we would expect more muted volatility, tighter spreads, and lower downside risk than what market participants have experienced in the past."

Asset purchase programs as we know them became a staple of US monetary policy in 2008, in response to the housing and resulting financial crisis. On November 25, 2008, the Federal Reserve announced that it would purchase up to $600 billion in agency mortgage-backed securities (MBS) and agency debt. On December 1, 2008, then-Chairman Ben Bernanke provided details on the program to the public, which was formally launched later that month, on December 16. On March 18, 2009, the FOMC announced they would expand purchases of MBS and agency debt by an additional $850 billion, and purchase $300 billion of US Treasury debt.

As is evident in Figure 2 below, these announcements have resulted in a substantial decline in the yields of various assets, including those not on the Fed's buy list. Option-Adjusted Spreads (OAS), however,

FIGURE 2: Announcements Alone Can Have a Significant Impact on Markets

	Changes in Yields on Announcement Date					Changes in OAS on Announcement Date			
	10-Year Treasury	10-Year TIPS	FNMA 30-Year MBS	Investment Grade Corporate	High Yield Corporate	FNMA 30-Year MBS	Investment Grade Corporate	BBB Corporate	High Yield Corporate
11/25/08	(21.58)	(34.00)	(44.70)	(14.00)	(10.00)	(33.94)	3.00	1.00	11.00
12/01/08	(18.91)	(20.80)	(11.50)	(14.00)	7.00	5.54	6.00	8.00	30.00
12/16/08	(25.69)	(27.90)	(28.40)	(14.00)	(6.00)	16.41	1.00	4.00	8.00
03/18/09	(47.36)	(54.00)	(15.20)	(40.00)	(4.00)	15.14	—	7.00	38.00

SOURCE: Bloomberg.

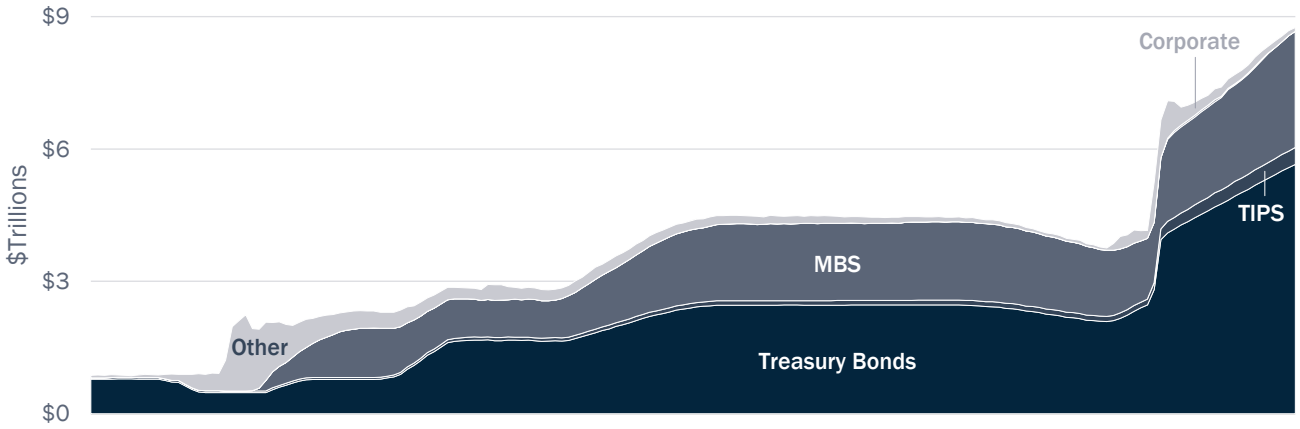
generally widened on the news. This was likely due to expectations of an economic downturn and probably increase in default risk, or at a minimum, impaired liquidity conditions at the time. Following this first foray into quantitative easing, the Fed engaged in two additional purchase programs during the recovery from the global financial crisis (GFC), and again returned to asset purchases, at significant scale, during the pandemic and through 2021, when it began scaling back purchases in November. The Federal Reserve's balance sheet continued to grow until 1Q2022, albeit at a declining pace, and has since begun to shrink for only the second time since the GFC, in an attempt to tighten financial conditions to combat inflation.

The purchase of long-term corporate debt is new in the US, and like past announcements, there was an immediate market response. When the Federal Reserve announced a program to purchase investment grade corporate debt and ETFs on March 23, 2020, financial markets responded immediately (Figure 3). Indeed, the Fed didn't even start buying bonds until June, but the announcement alone was enough to begin to restore calm to an otherwise fragile market. The Secondary Market Corporate Credit Facility (SMCCF) was authorized to purchase up to $250 billion of corporate bonds and ETFs, a paltry sum against the $10 trillion corporate bond market. Still, as has been the case with all other facilities, the market likely assumed the Fed would do whatever it takes to restore liquidity to credit markets and expand the programs if that ever became necessary.[1]

The expansion of the SMCCF to newly fallen angels and high yield ETFs on April 9, 2020, contributed to the market's "whatever it takes" interpretation of the policy response.

In the end, the Fed purchased just under $14 billion of bonds and ETFs, but its mere presence restored order to markets in short order. However, this episode alone is insufficient to claim the presence of a Fed put on a go-forward basis. We need evidence of a more durable impact. If the Fed opened up a Pandora's box, we would expect more muted volatility, tighter spreads, and lower downside risk than what market participants have experienced in the past. We will look for evidence of this in US markets, but before doing so, we first look at the ECB's experience with corporate bond purchases.

FIGURE 3: Federal Reserve Balance Sheet—Securities Held Outright



As of July 31, 2022.
SOURCE: Bloomberg, Federal Reserve.

1. On April 9, 2020, the Federal Reserve announced the purchases under the SMCCF could extend to recent fallen angels, i.e., firms rated BBB-/Baa3 as of March 22, 2020. This announcement also stated a small portion of ETF purchases would occur in ETFs that primarily invest in high yield bonds.

European Central Bank

"There are indications that the market has changed since ECB intervention began, though it is premature to draw firm conclusions."

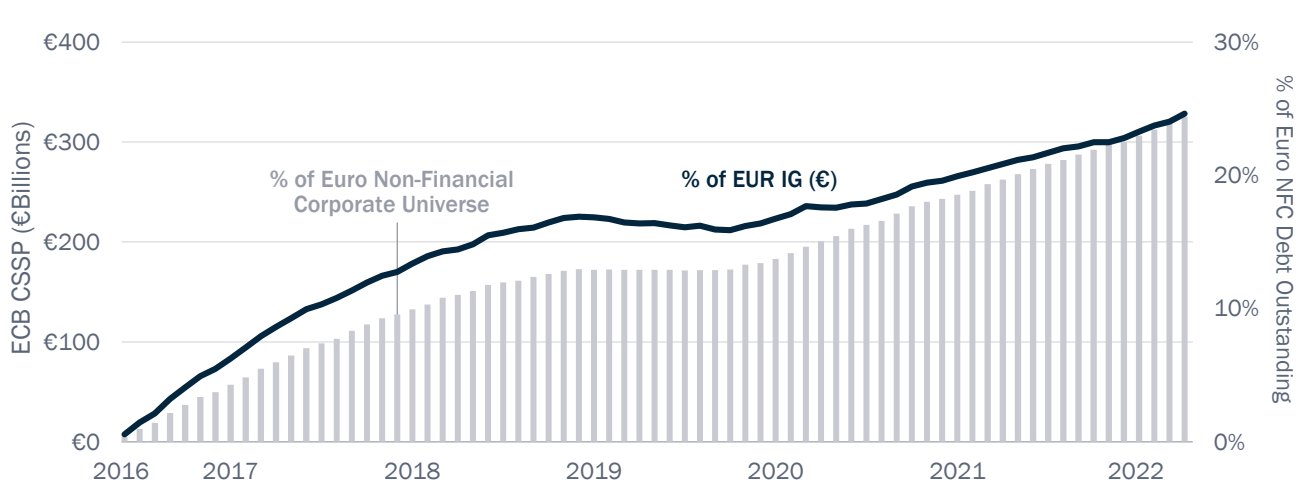
The European Central Bank began purchasing corporate debt in 2016. The legality of ECB corporate bond purchases is clear and unambiguous. As a result, one might expect investors to view this authority with a sense of comfort, that the ECB will do "whatever it takes" to provide liquidity and restore order to financial markets whenever necessary. Thus it is possible that the ECB's Corporate Sector Purchase Program (CSPP) has made a lasting impact on European credit markets.

Figure 4 below shows the size of the ECB's corporate bond portfolio. Unlike the Fed, the ECB has confined its corporate sector purchases to investment grade debt. ECB purchases during the pandemic were considerably larger than those of the Fed. While the Fed purchased a total of $14 billion of bonds and ETFs in 2020, the ECB purchased that amount in the first two-and-a-half months of the COVID-19 pandemic. Their purchases were a considerably higher percentage of the European corporate bond market, which is less than half the size of the US corporate bond market.

However, if experience in the US is any guide, it is not just the amount the central bank purchases that influences investor perception. It is how confident market participants are that the ECB would do whatever it takes and step in no matter the circumstances or political climate to restore order. Below are historical spreads for European A-rated and BBB-rated corporate debt.

A few notable events are worth pointing out. The Global Financial Crisis (GFC) saw spreads widen to all-time highs, and then just a few years later spreads widened again—though less substantially—during the European sovereign debt crisis in 2011. Bear in mind, the ECB did not engage in direct asset purchases until 2015, although other support programs were put in place during the GFC, and these were expanded to provide further support to the banking sector during the sovereign debt crisis. Since then, the selloff in 2020 was the most notable and significant. As in the US, the ECB stepped up its asset purchases and the selloff was short-lived, with credit spreads returning

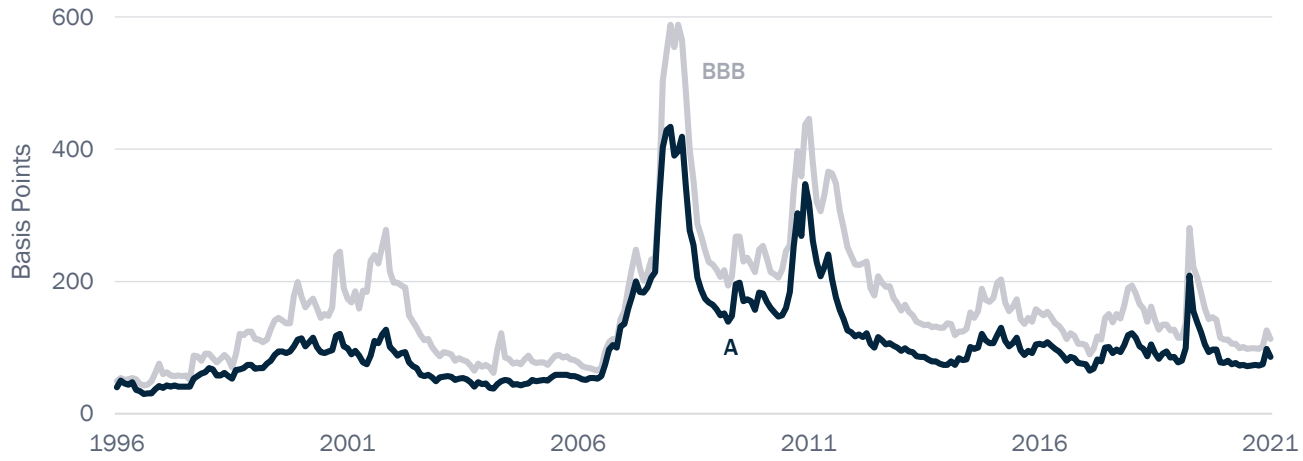
FIGURE 4: ECB Corporate Bond Purchases—Significant and Persistent



As of August 31, 2022.
SOURCE: Bloomberg.

FIGURE 5: Euro Corporate OAS

ECB PORTFOLIO SIZE AND % OF EURO IG MARKET



As of December 31, 2021.
SOURCE: ICE Data.

to pre-COVID levels by the end of 2020. It is also noteworthy that the spread widening in March 2020 was far less significant than in past crises, despite a far greater, and immediate, impact of the pandemic. While it is impossible to compare crises that are precipitated by different catalysts, the widening during the COVID-19 pandemic was far more subdued than in the past two major selloffs. Of course, perhaps learning from past experience, central banks including the ECB were also far swifter in taking action this time around.

A look at the history of credit spreads before and after the inception of ECB asset purchases shows no conclusive evidence of an "ECB put." However, there are indications the market has changed since ECB intervention began, though it is premature to draw firm conclusions. Until the COVID-19 pandemic, there were no events that stressed financial markets or the economy to a point where such a "put" was repeatedly tested.

A look at credit spreads above (Figure 5) shows that median spreads for A-rated debt are in line with pre-CSPP levels for Europe (we show US spreads as well for comparison). For lower rated BBB debt, spreads have indeed been narrower since the ECB's first intervention in credit markets in 2016, although this could also be influenced by investor appetite for yield in the lower interest rate environment of the past several years. The same holds true for US credit spreads. This could also be driven as much by the belief that central banks will intervene during times of crisis, making greater risk taking "safer" than it once was. But one should also bear in mind this lower median for spreads occurred against a backdrop of massive issuance of corporate credit, and an increase in corporate leverage, both of which would normally be headwinds for narrower spreads.

In Figure 6 (page 8) we also show the annualized spread volatility, calculated from weekly changes in spreads. Spread volatility has been lower in the presence of ECB asset purchases. While certainly premature to attribute this solely to the CSPP, lower spread volatility is certainly a result we would expect, as would lower equilibrium spread levels, in the presence of an implicit ECB put. While the US Federal Reserve

Pandemic Induced Spread Widening More Muted Than Past Crises

Euro Area Debt Spread Widening | CHANGE IN BPS

	A	BBB
GFC[1]	389	545
Euro Debt Crisis[2]	206	245
COVID-19[3]	143	178

1. June 30, 2007—December 18, 2008
2. May 4, 2011—November 29, 2011
3. February 21, 2020—April 3, 2020
SOURCE: ICE Data

FIGURE 6: Credit Spreads Better Behaved in the Presence of ECB Buying?

	Changes in Yields on Announcement Date				Changes in OAS on Announcement Date			
	Median Spreads		Spread Volatility		Median Spreads		Spread Volatility	
	A	BBB	A	BBB	A	BBB	A	BBB
1997-2021	92	141	62	88	105	177	75	105
Pre-2016	92	145	63	91	117	192	76	100
Post-2016	93	138	61	81	96	154	70	120

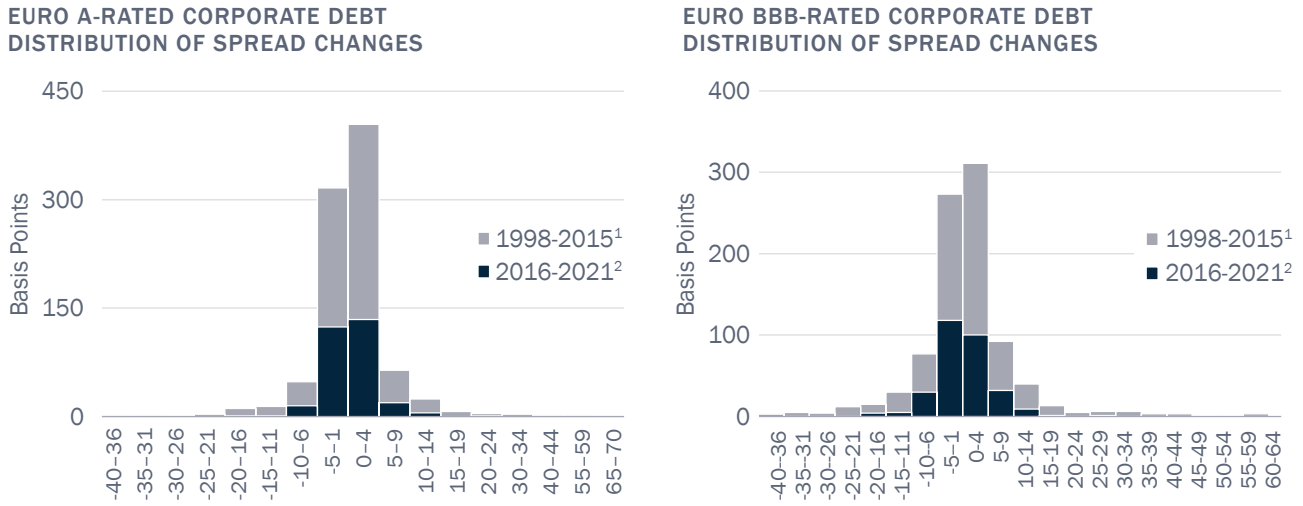
As of December 31, 2021.
SOURCE: ICE Data and MacKay Shields.

was purchasing debt during this same period, it was confined to government bonds and agency mortgage-backed securities until the COVID-19 pandemic began. While it is noteworthy median spread levels had declined in the US, this was a period of generally robust economic growth driven by the same forces that existed in Europe, where investor appetite for yield drove investors to seek riskier assets. That BBB spreads exhibited modestly higher volatility could be explained by the substantial increase in downgrades over the period, as corporations took advantage of lower yields to lever balance sheets.

Related to this, a reduction in volatility in the presence of a central bank put would come from a mitigation in extreme spread widening. Markets would presumably conclude that central banks would step in to restore calm during periods of stress. We should also see this in the distribution of spreads, where we would expect them to have shorter tails, or at least a shorter right tail. We observe this in Figure 7 below.

On the left, we note the distribution of weekly spread changes prior to and after the inception of ECB asset purchases. We would not expect spreads to be normally distributed. Due to the inherent asymmetry of corporate debt, one would expect a fatter right tail. While present, it is not pronounced in A-rated debt (it would surely be so in markets with higher default risk, such as below-investment grade debt). The right panel shows the same information for BBB-rated corporate debt. The distribution is similar in shape and, not unexpectedly given the lower spread volatility, the tails are shorter. Again, we need to acknowledge

FIGURE 7: Thinner Tails Exhibited but Dearth of Events Gives Pause



1. January 1998—December 2015.
2. January 2016—December 2021.
SOURCE: ICE Data and MacKay Shields.

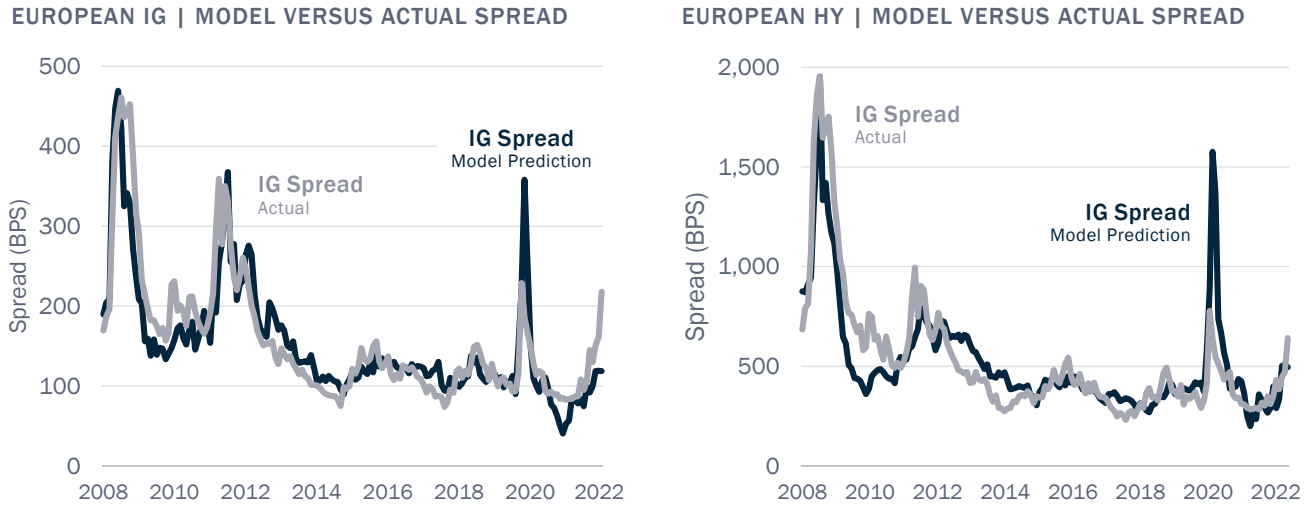
the period post-CSPP is considerably shorter than the period prior (approximately 18 years versus six years) with fewer episodes of extremes. However, there is some evidence of attributes we would expect to be present in the presence of a central bank put: Modestly tighter spreads, lower spread volatility, and a shorter right tail, even if it is premature to conclude such a put exists conclusively.

Another approach we took to examining the hypothesis of a central bank put in Europe was to compare realized spread behavior to a fair value model of corporate spreads. To be sure, we looked at several versions of models (all of which estimate a fair value of broad-based market spreads monthly) whose results are published by the major investment banks. The models typically use a set of sensible factors in an attempt to provide an estimate of the price credit risk. Here, we selected a model published by UBS, which uses explanatory variables that capture economic fundamentals, credit performance, and market liquidity measures to estimate the fair level of spreads. Figure 8 shows modeled spreads tracked realized spread behavior fairly well, historically. As noted, since the inception of the CSPP, there were no extreme events until the COVID-19 pandemic selloff in March 2020. Interestingly, we observe that the model predicted spreads for European investment grade should have widened +265 bps, approaching 360 bps, from 94 bps in early February. In fact, spreads actually widened by 135 bps, about half that amount. Similarly for high yield debt (which the ECB does not purchase) in the right panel, spreads did not widen to the levels the model would have predicted.

It is important to bear in mind models are generalizations that cannot possibly incorporate all factors that may move markets. Indeed, markets may deviate from model estimates for any number of reasons. Case in point, recently European IG spreads increased by more than forecast by the model as seen below in Figure 8. This was primarily due to a confluence of events related to weak economic performance in Europe, an abrupt pullback in quantitative easing (QE) from the ECB, and poorer-than-expected liquidity. That this larger-than-expected spread widening occurred against a backdrop of the ECB pulling back on stimulus, and as part of this, eliminating the purchase of new debt (the ECB has ceased expansion of their balance sheet) does not by itself thwart the hypothesis of an ECB put. The ECB, like the Fed, has prioritized a reduction in inflation and appears willing, at least for the time being, to live with slower growth as a result. It remains to be seen what they would do should the economy deteriorate more rapidly or financial markets nosedive.

Another place to look for prospective evidence of a central bank put would be options markets. If investors believe volatility would be more muted in the

FIGURE 8: Spreads Widen by Less Than Expected in 2020



As of June 30, 2022.
SOURCE: UBS, used with permission.

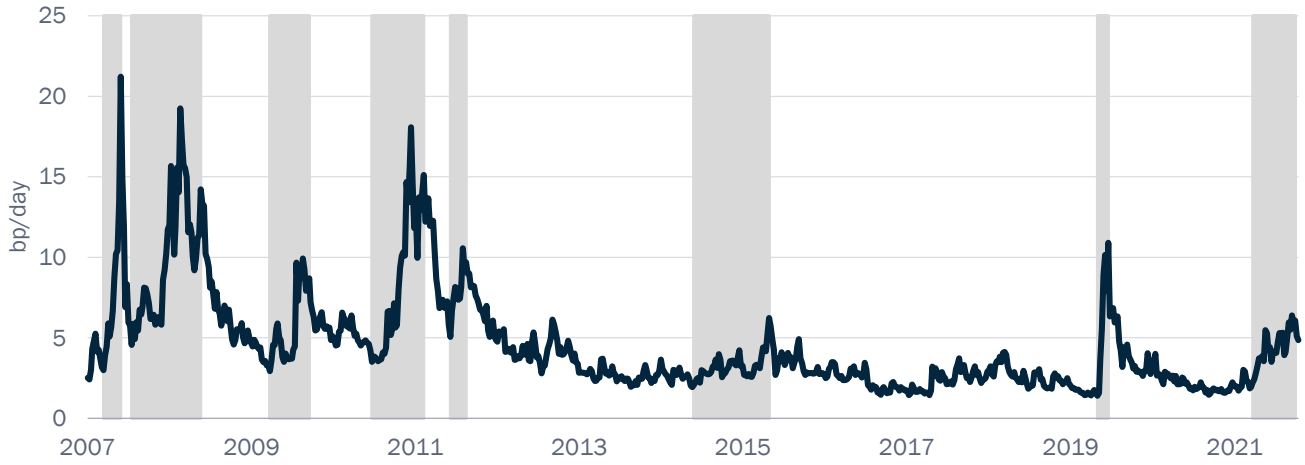
future, and losses considerably smaller during times of stress, then we might expect investors would pay less for downside protection in options markets.

Figure 9 below shows the implied spread widening (in basis points per day) from iTraxx Main 3m 25d Payer swaptions shown against periods where actual credit spreads on the iTraxx Main index widened by more than 50 basis points (shaded areas). When spreads widened, the cost of protection rose rapidly and did so commensurate with the severity and duration of the spread widening. In late 2015/early 2016 and again in 2020, while the cost of protection rose, it did seem to rise less than in past crises, as we observed with spread widening implied by the empirical models above. In the former case, spreads rose more gradually, there wasn't a sudden shock to markets, and the spike in volatility was more muted. In 2020, spreads widened more violently, began to recover soon after, and the cost of downside protection declined rapidly. Even the current downturn in markets was initially driven by interest rates, with spread widening more muted; and while recession fears have risen of late, and the Russia-Ukraine war certainly has the potential for surprises, thus far spread widening has been measured.

We have few observations of extreme market selloffs on which to fully test our hypothesis of a central bank put. However, the limited empirical evidence from Europe suggests the possibility, reinforced by the notion there are no legal or legislative hurdles to ECB intervention in asset markets, of giving investors more confidence in the notion. In the US, the purchase of corporate debt is new and not without barriers for repeated intervention, but since the Fed opened the door, we ask if there is any evidence the markets may behave differently in the future.

FIGURE 9: Rise in Cost of Insurance More Muted

IMPLIED SPREAD WIDENING FROM ITRAXX MAIN INDEX



As of July 29, 2022.
Shaded area represents widening of spreads.
SOURCE: Bloomberg, Goldman Sachs, and MacKay Shields.

The Fed Intervention's Ongoing Impact

"Market Response and Evidence of a Persistent Put"

As already displayed in Figure 1 (page 2), markets responded immediately to the announcement of Fed intervention in corporate credit markets. Swift central bank intervention and fiscal stimulus resulted in an unprecedented economic rebound and a massive rally in risk assets, allowing credit spreads to return to pre-COVID levels by the end of 2020.

Still, the low spread levels by the end of 2020 and through much of 2021 were not unprecedented. We achieved similar levels before the pandemic and before the GFC, and in neither instance with the same level of monetary and fiscal support as during the COVID period (Figure 10).

We can say the same thing about spread volatility. While Figure 11 (page 12) shows spread volatility in the US decreased significantly from the high achieved during the March 2020 selloff, when compared to historical volatility, we cannot call the low levels of

FIGURE 10: Post-Pandemic Credit Spreads not Unprecedented...

As of December 31, 2021.
SOURCE: ICE Data.

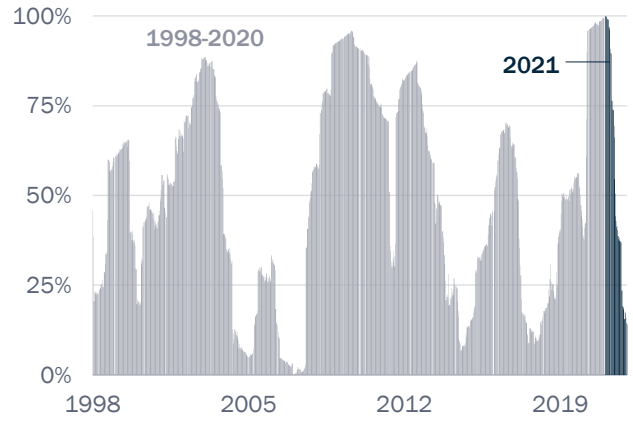
volatility achieved post-pandemic unprecedented, or conclude we have entered a new regime. Indeed, as the Federal Reserve is now tightening policy to combat inflation, and volatility has risen, it is premature to draw conclusions regarding the level of volatility with employment still robust and only some signs a recession is imminent.

In contrast to our findings in Europe, US investment grade spreads widened during March of 2020, to levels close to fair value estimated by the model (Figure 12 below). As with European spreads, the model estimates month-end spread levels, and March 2020 levels of model-estimated and realized spreads were within 20 bps of each other.

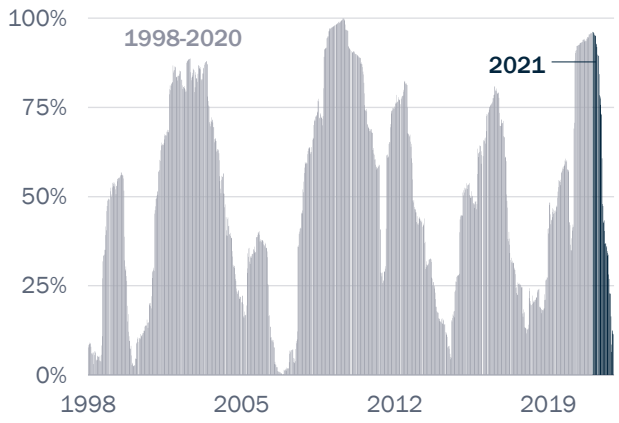
Recall that by the end of March 2020, the Federal Reserve had already announced the Fed would purchase corporate bonds and the market had already begun to recoup its losses by end of month. It is warranted to be skeptical of models of anything as complicated as compensation for credit risk, which at any moment could be governed by a number of factors. Still, we find it interesting that, with the CSPP program in place and with purchases reactivated a few months before the pandemic, credit spreads in

FIGURE 11: ...and Neither Is Post-Pandemic Volatility

US INVESTMENT GRADE ANNUALIZED SPREAD VOLATILITY: PERCENTILE RANK

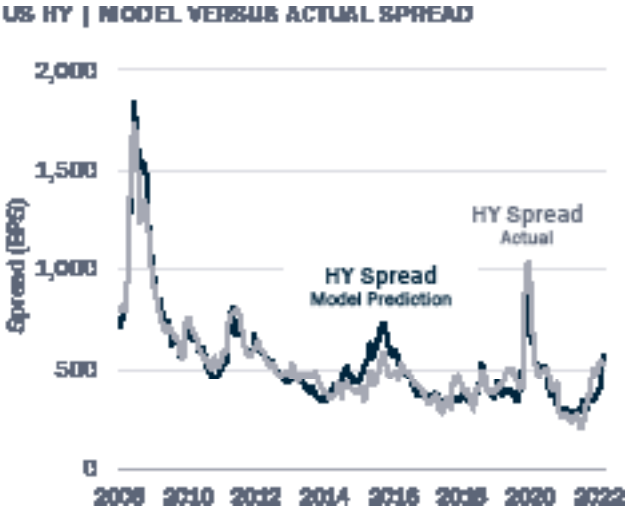


US HIGH YIELD ANNUALIZED SPREAD VOLATILITY: PERCENTILE RANK



As of December 31, 2021.
SOURCE: ICE Data and MacKay Shields.

FIGURE 12: A Model of Credit Spreads Suggests Credit Is Fairly Priced



As of June 30, 2022.
SOURCE: UBS.

Europe did not widen to levels the model estimated, whereas in the US they did.

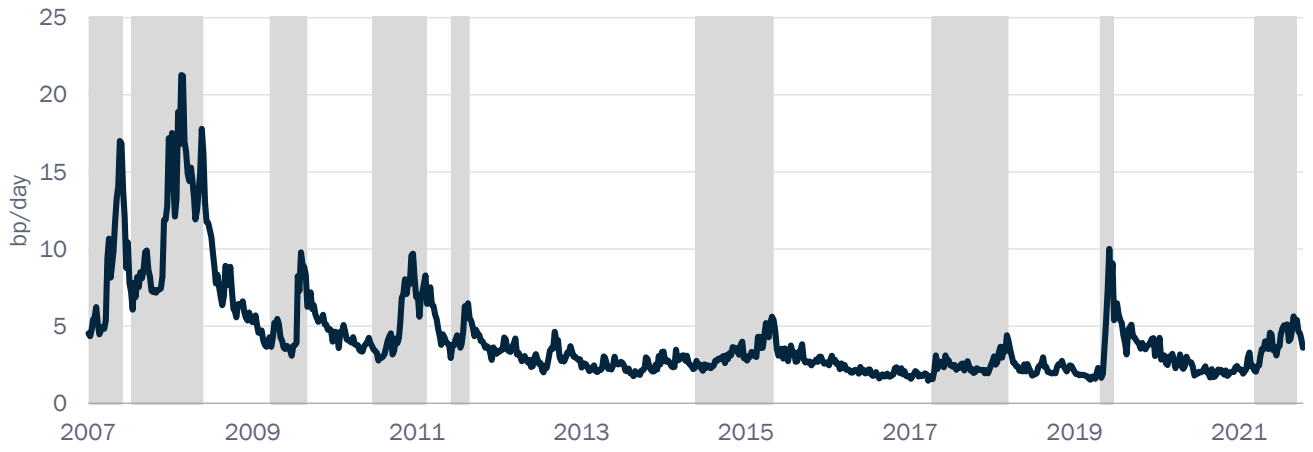
In the absence of new stress events to test the presence of a Fed put in credit markets, another place to look for prospective evidence would be options markets. If investors believe volatility would be more muted in the future, and losses considerably smaller during times of stress, then we might expect investors would pay less for downside protection in options markets.

In Figure 13 below, we show the implied spread widening from CDX IG 3m 25d Payer swaptions shown against periods where actual CDX spreads widened by more than 50 basis points. When credit spreads widened, the cost of protection rose as would be expected. Since the last major drawdown in credit markets in 2020, volatility had stabilized until recently, and so had the cost of protection.

As with other indicators we highlighted above, we would need more stress events in the US to test for the persistence of any Fed put in credit markets, and we may be on the cusp of one now. While we are certainly not rooting for another crisis, the cyclical nature of the economy makes future stress events inevitable. At present, the macro picture is evolving—inflation is a concern, and a number of indicators are now increasingly suggestive of an approaching recession. Credit spreads are widening, and we may learn much in the coming months about market expectations for central bank intervention.

FIGURE 13: Fed "Put" Not Yet Reflected in the Cost of Insurance

IMPLIED SPREAD WIDENING FROM CDX IG



As of July 29. 2022.
Shaded area represents widening of spreads.
SOURCE: Bloomberg, Goldman Sachs. and MacKay Shields.

Legal and Political Context

The Federal Reserve Act defines the types of lending activity the central bank can engage in, and also puts limits on its purchases of financial assets.

Section 14 of the Act delineates the types of financial assets Federal Reserve banks can buy in the secondary market. Corporate bonds are notably absent from this section of the Act. But the Federal Reserve has worked around this restriction by using its much broader lending powers. Specifically, the central bank can lend to a facility of its own creation, and the facility can in turn use the loaned funds to make asset purchases. The Federal Reserve used this technique for a number of facilities during the Global Financial Crisis, including the Commercial Paper Funding Facility (CPFF).

In all its lending activities, the central bank needs to be secured to its satisfaction, and the assets in the facility can in theory serve as collateral. But since the facility would only fail to return loaned funds to the Federal Reserve if these assets do not perform, they do not truly serve as adequate collateral. Thus, in each of the two pandemic response facilities—the Primary Market Corporate Credit Facility (PMCCF) and the Secondary Market Corporate Credit Facility (SMCCF)—funds provided by Congress under the Cares Act served as a first-loss equity investment. In protecting the Federal Reserve from losses, these investments ensured the central bank was secured to its satisfaction.[2]

Section 13, Paragraph 3 of the Federal Reserve Act, which addresses lending activities, imposes constraints on Federal Reserve lending under "unusual and exigent circumstances," i.e., during financial market crises or other periods of stress. These conditions applied to the PMCCF, which was intended as an alternative source of funds for corporations temporarily unable to borrow from banks or in credit markets. These conditions include:

- A prohibition on lending to a single entity (i.e., lending must be done through a program with broad-based eligibility)
- Participants in a program must demonstrate they are unable to secure adequate credit from other sources
- Participants may not be insolvent
- The program or facility may not be structured, "to remove assets from the balance sheet of a single and specific company, or…for the purpose of assisting a single and specific company avoid bankruptcy"
- A stronger oversight role for Congress via detailed and timely reporting requirements
- Prior approval of the Treasury Secretary for establishing an emergency lending facility

The Dodd-Frank Act of 2010 added these conditions to the Federal Reserve Act to reflect Congress's desire after the Global Financial Crisis to limit the Federal Reserve's ability to act unilaterally in future crises. For example, the conditions above would preclude an AIG-style bailout. In addition, the requirement of Treasury Secretary approval was intended to ensure that elected officials, working with a Congressionally confirmed cabinet member, would have input into the creation and design of any emergency lending facilities, as well as a clear oversight role.

Interestingly, the events of 2020 suggest the Dodd-Frank Act may ultimately have strengthened the Federal Reserve's policy response. Secretary Mnuchin's formal approval of Fed facilities, combined with Dodd-Frank's restrictions on the structure of facilities and strengthened reporting requirements, may have provided Congress with greater confidence

in allocating significant funds that could be used as first-loss investments in the facilities. And acting with the full backing of the Treasury and Congress, and with large equity investments from the CARES Act, the Federal Reserve could significantly expand the size and scope of its policy response. The result was a "bazooka" approach that could provide a potentially overwhelming amount of support to markets, promptly restoring investor confidence as eligible corporations would have virtually unlimited access to the central banks' balance sheet, if needed.

To summarize, the legal restrictions on purchases of corporate bonds compel the Federal Reserve to make such purchases through facilities that it lends to, with this lending occurring only under very specific criteria detailed in the Federal Reserve Act. While technically the Federal Reserve could initiate a corporate credit facility with just Treasury Secretary approval, there are good reasons to expect both the central bank and administration would prefer Congressional involvement via legislation that authorizes funds to backstop the facility. Congressional support provides political cover, and also unlocks facilities' larger potential through a more significant first-loss piece. The alternative approach, employed during the Global Financial Crisis, saw Treasury making token contributions to facilities using its Exchange Stabilization Fund (ESF). But since the ESF serves a broader purpose of supporting the exchange value of the dollar in a currency crisis, the Treasury was hesitant to make more than a de minimis token first-loss contribution to Federal Reserve facilities. The resulting facilities were adequate to the task during the 2008-2009 crisis, but would have been insufficient in the early going of the pandemic.

In contrast to the Federal Reserve, the European Central Bank has clear legal authority to directly purchase corporate bonds in the open market, and in fact began doing so well in advance of the pandemic as part of its effort to support a eurozone economy mired in anemic growth and facing deflationary headwinds. Interestingly, neither central bank faces legal restrictions on lending to high yield companies. Instead, both central banks set the criteria for eligible securities, and with the exception of the Federal Reserve's purchases of a subset of fallen angels and high yield ETFs, both central banks have limited their purchases to investment grade corporate credits.

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2. As the Federal Reserve established the two corporate credit facilities shortly before the CARES Act was signed into law, the March 23, 2020 announcement noted that Treasury would use funds from the Exchange Stabilization Fund (ESF) to provide equity for the facilities. Once the Cares Act was passed, Treasury used funds allocated in that legislation to make a much more sizeable equity contribution to the facilities, which allowed the Federal Reserve to greatly expand the size and scope of the PMCCF and SMCCF. This increased size and scope, along with the use of Cares Act funds, was noted in the Federal Reserve's April 9, 2000 press release.

In contrast to these explicit first-loss investments in Federal Reserve facilities, the Treasury backstop of the CPFF during the Global Financial Crisis was less formal. Under the time pressure of the Lehman default and subsequent run on money funds, and absent clear precedence, the Treasury simply announced a deposit at the Federal Reserve, using money from the Exchange Stabilization Fund, as an implicit first-loss contribution to the CPFF.

Conclusion

Our review of various market metrics provides no conclusive evidence of an enduring "Fed put" for US corporate bonds in the wake of the Fed's 2020 interventions in the market. While credit spreads and volatility remained low throughout 2021, they were within their historical range. In addition, spreads were close to levels suggested by fair value models and, if anything, were somewhat cheap relative to model valuations. Finally, option skew appears steep compared to what we would expect to observe if prior Fed interventions were having a persistent impact on credit markets. And the degree of recent spread widening is largely consistent with a slowing economy.

The lack of evidence of a "Fed put" in US corporate bond markets may suggest an understanding among market participants that recent credit market interventions occurred in the midst of an extreme health, economic, and market crisis, and are unlikely to be rolled out to address a more run-of-the-mill recession. It could also reflect a market belief that high inflation limits the FOMC's appetite for easing financial conditions in the next recession.

In addition, legal and political constraints on Fed interventions may influence market expectations for future credit interventions. Specifically, such interventions require the approval of the Treasury Secretary; the Federal Reserve would be highly unlikely to pursue corporate debt purchases in the future without an equity contribution from Treasury. Additionally, scaling up a program so that it could backstop the investment grade market would likely require a more sizeable first-loss contribution via legislation and the explicit allocation of taxpayer funds.

Finally, the Federal Reserve has traditionally had a strong aversion to interfering directly in the allocation of credit in the economy. As long as markets remain orderly and spread widening is viewed as consistent with changing expectations for the economy and default and recovery rates, we believe policy-makers would be unlikely to pursue future bond purchases. The Federal Reserve's decision to quickly unwind its corporate bond holdings in 2021 underscores their aversion to credit market interventions. In short, the market may perceive the hurdle to future interventions is quite high.

In contrast to the US, we find circumstantial though far from convincing evidence the ECB has left a more enduring impact on euro area credit markets. Since interventions began in 2016, the median spread for BBB-rated corporates has been lower compared to the pre-intervention period, and spread volatility has also been lower. In addition, at the height of the COVID market crisis in March of 2020, euro-area investment grade spreads remained rich relative to modeled spreads. While the ECB had already resumed

corporate debt purchases in the fourth quarter of the prior year, the presence of those purchases and the lack of legal or political barriers to ECB intervention may have created a perception that the European central bank was prepared to upsize its corporate bond purchases, if necessary, to ensure the flow of credit to businesses.

At the end of the day, however, we do not find clear-cut evidence to support the notion that expectations of future ECB interventions are currently influencing corporate credit valuations. Despite our finding that BBB spreads have generally been narrower, and spread volatility lower, since corporate market interventions began in 2016, we highlight a number of explanations for this. First, other than a pause for most of 2019, the ECB purchased corporate bonds on a continuous basis since 2016. In addition, prior to the pandemic, the post-2016 era of bond purchases saw no meaningful periods of risk aversion and volatility in European credit markets. In contrast, the prior decade witnessed two such periods—the GFC and the European sovereign debt crisis. Finally, the period of ECB credit interventions has been accompanied by other extraordinary monetary policy measures that have lowered interest rates and further catalyzed a search for yield. These included interest rate cuts that took the ECB's deposit rate even further into negative territory and the ECB's first foray into sovereign QE in 2015.[3]

Although we find very limited evidence that market participants expect direct Federal Reserve support for corporate bonds in a future recession, it is possible expectations would only become apparent as a recession or financial crisis approaches. In the meantime, it is worth monitoring how spreads, model valuations, and option prices evolve, particularly as investors increasingly focus on whether monetary tightening in the face of persistently high inflation will lead to a downturn. Actions of corporations and rating agencies also deserve attention. While we have not seen any indications of this yet, it is possible some firms could seek to improve their rating profiles ahead of a recession in order to be "in scope" for an anticipated Federal Reserve purchase program. Similarly, it is possible—though unlikely—that rating agencies might communicate how future central bank purchases of corporate bonds impact their current assessments of credit risk. And finally, central banks may communicate on the likelihood of crisis facilities being brought back, including the conditions for reactivation.

[3] From 2016–2019, the rate at the ECB's deposit facility averaged -40 basis points and the 10-year German bund yield averaged 0.19 percent. These compare to 86 basis points and 2.57 percent, respectively, over the prior decade. Source: MacKay Shields.

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