QUARTERLY OUTLOOK

APRIL 2020

A Letter from the Head of PGIM Fixed Income and our Chief Investment Officer

Take What You Thought and Think Again
Thoughts from our Chief Investment Strategist

Looking Into the Eye of the Storm
Thoughts from our Chief Economist

Fixed Income Overview

In the span of less than three months, the novel coronavirus has shuttered much of the global economy, bringing an 11-year economic expansion to an abrupt end. As our Chief Economist explains in the following pages, broad uncertainty remains regarding the extent of the economic damage and the vitality of an eventual recovery. Yet, this uncertainty has only strengthened our long-term commitment to our colleagues and clients.

Our employees in the United States, Europe, and Asia are safely working from home, at backup facilities, or from offices under social-distancing protocols. Wherever they are working, we continue to support our colleagues with the infrastructure needed to maintain focus on our clients' long-term investment objectives.

In the following section, our Chief Investment Strategist explores the historically attractive value that exists across the global credit markets. Selecting credits that are well positioned to weather the economic shutdown and that are poised to flourish during the recovery will be critical to generating strong risk-adjusted returns in the quarters and years ahead. I have complete confidence that our fundamental, value-based credit selection process will continue to serve us well in the current environment. Our Second-Quarter Outlook concludes with additional details from our respective desk heads on where they see opportunities across the global fixed income sectors going forward.

Although the current crisis is unlike any other in the post-war era, it will become one of many that we have managed through. Furthermore, I can assure you that we will maintain a long-term perspective on portfolio management. Indeed, when we look to the next few years, we have a much greater sense of clarity, even though the next few weeks will be full of extreme uncertainty.

This short-term uncertainty may bring additional anxiety and confusion regarding the path of the virus, global economy, and markets. We welcome clients, prospects, and consultants to bring any questions or concerns to their Client Advisory contacts or to visit PGIMFixedIncome.com for our latest perspectives.

We remain committed to earning your long-term trust and partnership and hope, in the not-too-distant future, to express that commitment in person.

Sincerely,

Mike Lillard

Head of PGIM Fixed Income and Chief Investment Officer

Recent Thought Leadership on PGIMFixedIncome.com:

- The Fed Quickly Surpasses Its Financial Crisis Efforts
- A Market Update from Our Chief Investment Officer
- Market Update: Opportunities in Securitized Credit
- Market Update: Investment Grade Corporate Bonds
- Market Update: Global High Yield

▶ SECTOR VIEWS ▶

Developed Market Rates | 9

Tactical. U.S. Treasury collateral may generally richen in early Q2 as the Fed continues to liquify the market, yet the 10-year yield may correct higher amid incoming fiscal stimulus and surging Treasury issuance. We favor short positioning in rich derivatives and long positioning in 5- and 10-year TIPS. Intermediate French OATS appear attractive as do real rates in Canada vs. the UK.

Agency MBS | 9

Underweight vs. other spread sectors. While MBS spreads may compress further on Fed purchases, they have already tightened significantly. We believe additional compression may be limited, therefore we favor other spread sectors over MBS.

Securitized Credit | 9

Remain highly positive on the top of the capital structure for liquidity and certainty of outcomes in the near term. Opportunities in off-the-run asset types and mezzanine investments are increasingly tempting, but we believe better entry points will emerge as trapped longs lighten up on risk and the extent of the economic damage becomes evident in Q2.

Investment Grade Corporate Bonds | 11

Very positive in the intermediate and longer term as a recovery surfaces and spreads likely tighten. Favor U.S. money center banks as well as select defensive sectors while searching for undervalued issues.

Global Leveraged Finance | 12

Bullish over the medium term. While the coronavirus has delivered a sharp economic blow, there are several mitigating factors throughout the sector. Meaningfully wider spreads present an attractive entry point over the medium to long term, especially in more defensive/isolated sectors. Actively managed credit selection will be a differentiating factor in performance going forward.

Emerging Market Debt | 13

Long-term constructive. With spreads and yields at significantly wider levels and expectations for developed market rates to remain low for an extended period, we expect EM assets to maintain their longer-term value. We prefer hard currency sovereigns and select corporates, followed by select local rates. EMFX may take longer to rebound, with more episodes of volatility, than prior crises. We'd expect any recovery to precede a bounce in economic data, with higher-quality issuers recovering first, followed by lower-rated issuers.

Municipal Bonds | 14

Near term cautious, longer term opportunistic. Our near-term caution is based on the uncertainty of the depth and duration of the crisis and the ultimate impact on municipal credits. We believe that the high-quality nature of municipal credit, federal assistance, and significant spread widening presents attractive opportunities for a wide range of investors. We continue to look for long-term opportunities amid the market volatility.

Take What You Thought and Think Again

This has been a year (and it feels like an entire year) where if you had any expectations whatsoever you have been saddled with a surprise of historic proportions. After all, the consensus for market moving events to start 2020 was: 1) a sluggish global expansion; 2) a thorny trade war; and then 3) the royal rumble that would become the U.S. presidential election. How about a recession? Not until much later. We had no reason to think otherwise.

Instead, we've been derailed by a monumental "pump-to-the-near-death" oil price war coupled with a whopper of a pandemic that's bringing on a global economic sudden stop for the record books—expectations for annualized double-digit GDP declines in Q1 and Q2 along with double digit surges in unemployment (see the following Macroeconomics section).

While the Q1 market plunges were nearly as unprecedented (Figure 1), fortunately policymakers have jumped in like never before, working all the angles in an effort to stem the pandemic and bridge society, the economy, and the markets to the other side. A spirit of "what's this going to take? Ok, let's do it" has become the hallmark of the crisis response thus far.

Figure 1: After Impressive Performances in Recent Years, Risk Product Takes a Colossal Nosedive …

Individual FI Sectors	Q1 2020	2019	2018	2017	2016
Long U.S. Treasuries	20.9	14.8	-1.84	8.53	1.3
U.S. Treasuries	8.20	6.86	0.86	2.31	1
Mortgage-Backed (Agency)	2.82	6.35	0.99	2.47	1.7
CMBS	1.19	8.29	0.78	3.35	3.3
Municipal Bonds	-0.63	7.54	1.28	5.45	0.3
EM Local (Hedged)	-1.43	9.14	0.75	3.68	4.7
U.S. IG Corporate Bonds	-3.63	14.5	-2.51	6.42	6.1
U.S. Long IG Corporates	-4.51	23.9	-7.24	12.09	11
European IG Corporate	-6.15	6.24	-1.25	2.41	4.7
EM Currencies	-8.48	5.2	-3.33	11.54	3.5
U.S. High Yield Bonds	-13.12	14.4	-2.26	7.48	17.5
U.S. Leveraged Loans	-13.19	8.17	1.14	4.09	9.9
EM Debt Hard Currency	-13.39	15.04	-4.26	10.26	10.2
European Leveraged Loans	-14.40	4.38	1.25	3.72	7
European High Yield Bonds	-14.50	11.4	-3.35	6.79	10.8
Multi-Sector	**Q1 2020**	**2019**	**2018**	**2017**	**2016**
U.S. Aggregate	3.15	8.72	0.01	3.54	2.7
Global Agg. Hedged	1.45	8.22	1.76	3.04	4
Global Agg. (Unhedged)	-0.33	6.84	-1.2	7.39	2.1
Yen Aggregate	-0.34	1.64	0.93	0.18	3
Euro Aggregate	-1.13	5.98	0.41	0.68	3.3
Other Sectors	**Q1 2020**	**2019**	**2018**	**2017**	**2016**
U.S. Dollar	2.76	1.35	4.9	-7.85	3.2
3-month LIBOR	0.43	2.4	2.23	1.22	0.7
S&P 500 Index	-20.00	32.6	-4.4	21.26	10.6

Past performance is not a guarantee or a reliable indicator of future results. See Notice for important disclosures and full index names. *All investments involve risk, including possible loss of capital. Sources: Bloomberg Barclays except EMD (J.P. Morgan), HY (ICE BofAML), Bank Loans (Credit Suisse). Performance is for representative indices as of March 31, 2020. An investment cannot be made directly in an index.*

The response function has been a big differentiator from the 2008 Global Financial Crisis when policymakers were reluctant to immediately and unreservedly jump in and attack the crisis, which would have meant effectively aiding the culprits (recklessly levered investors and borrowers as well as their financial sector enablers) in order to save the economy and the markets. The good news this time—granted there is scant little—is that policymakers have no such conflict. Helping is just helping and moral hazard is less of a concern. *That's a big plus because the sooner more policy measures are applied, the quicker the economy and the markets can reach the other side of the crisis. From an investment perspective, the speed to recovery is important because the credit sector returns out of crisis periods are historically very strong.*

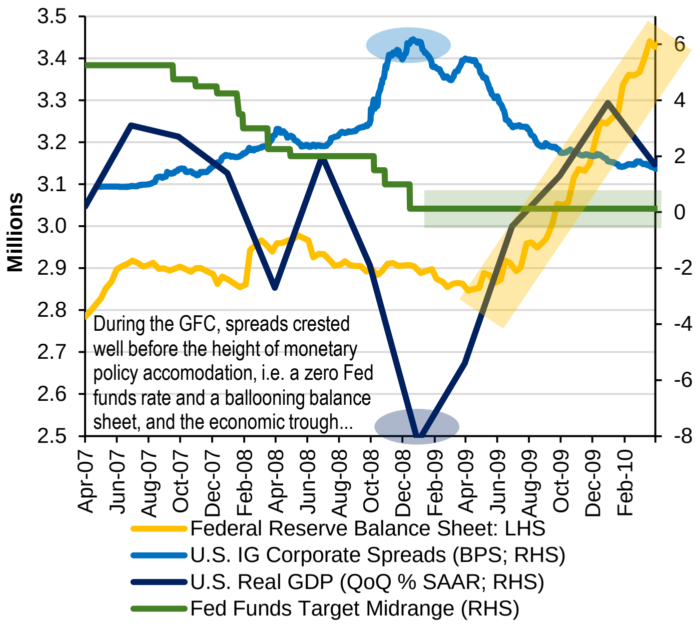
Where to From Here?

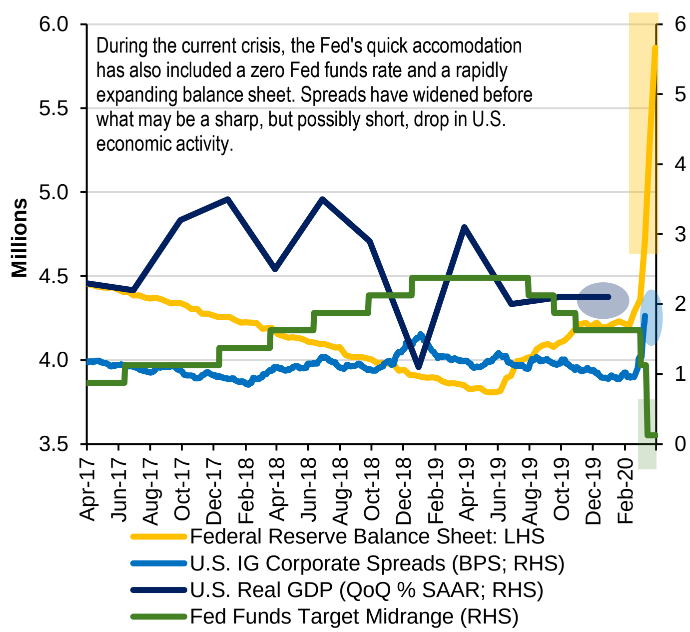
Even with all of the policy palliatives on tap, the course from here remains highly uncertain. While we don't have an exact road map for our market outlook, when looking further afield, the crisis may become a seminal point for interest rates and credit spreads. For example, after falling for years, U.S. rates have entered the low realm of their DM counterparts and may be poised to drift only slightly higher going forward. *However, credit spreads across securitized credit, investment grade, high yield, and emerging markets offer historically compelling value. Yet, there is a significant distinction this time: given the unprecedented circumstances—hence strains on certain industries and issuers—active management will be more critical than ever in both generating alpha and avoiding losses (see a summary of our thoughts in the following table and more detailed information in the Sector Outlooks).*

When Does a Crisis Crest?

When reviewing the debris-strewn paths of past crises, we'd note that the markets are generally forward looking. Therefore, they tend to bottom out well before economic activity, especially when policy stimulus is coming fast and furious. For example, during the GFC, credit spreads crested at the end of Q4 2008 as monetary policies—central banks instituted massive rate cuts, and the Fed began broad non-traditional easing measures, such as QE, like never before—as well as fiscal policies hit their full stride. *The peak in spreads (December 2008) was about three- to six-months ahead of the bottom in economic activity (see Figure 2).*

Figure 2: Does the 2008 Crisis/Recession/Market Recovery Provide a Loose Roadmap for the Current Crisis? Once the Fed Dropped the Funds Rate to Zero (Dec. '08) and Launched into its Non-traditional Measures (Announced in Dec. '08 and Started in Earnest in '09), Credit Spreads Crested, Even Though Economic Growth Didn't Resume Until Mid-2009.



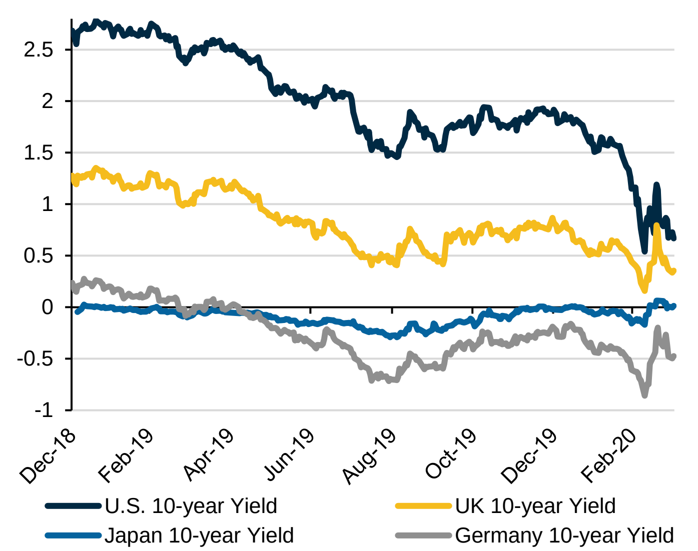


Source: Bloomberg and PGIM Fixed Income as of March 31, 2020. Corporate spreads are based on the Bloomberg Barclays U.S. Aggregate Corporate Index.

To the extent that a similar pattern holds in the current crisis—based on our current assumption that growth will turn positive over some part of the second half of the year—it seems quite reasonable to expect market anxiety to crest during the second quarter. Depending on the ultimate depth of economic activity as well as the timing and extent of policymakers' countermeasures, for all we know we may have seen the worst of the market volatility in the final weeks of the first quarter, although it is still too soon to be sure. *If the markets are already in the ballpark of pricing in the bad news of the crisis, where might the markets land over the next 12 to 24 months? More specifically, how much will the spread markets recover, and, when the flight-to-quality and recession recedes, how high will long-term government yields rise?*

On the interest-rate front, our view coming into the year was that secular factors, such as the global advent of shrinking workforces and high debt burdens (to name a couple), would keep developed market government rates low for the foreseeable future, e.g., around 0% for the 10-year JGB, well below 0% for the 10-year German Bund, around 1% for Australian 10-year rates, and so on. With rates in those markets already near their lower limits, they've rallied only moderately, or not at all, during the latest volatility (see Figure 3). Correspondingly, looking ahead to when things revert back to normal, we would expect comparatively limited yield corrections in those markets as well. However, the U.S. was an outlier prior to the crisis as the Fed was suspending the funds rate—and thereby the rest of the U.S. yield curve—at what we believed were unsustainably high levels relative to virtually all other DM yield curves. This left room for U.S. rates to uniquely crash lower when the Fed cut rates to zero in its initial efforts to stem the crisis (see the Box on the Fed funds rate and the dollar).

Figure 3: The World of Non-U.S. DM Rates Prior to the 2020 Crisis May Give Clues to Conditions in the Post-Bond-Bull-Market Era. Given that Other G4 Rates Already Dropped Close to Their Ultimate Floors, There Was Not Much Scope to Rally Further, Even in the Recent Flight-to-Quality Panic—e.g., German Rates Rallied 25 bps, UK 45 bps, and Japan's? Nothing At All. So, In General, There Was Some Diversification Benefit to Holding High-quality Government Bonds During the Recent Market Volatility, But Not Much. One Lesson from the Crisis May Be That Once Rates Reach a Certain Level, the Insurance Value of Long-term Government Bonds can be Quite Limited.



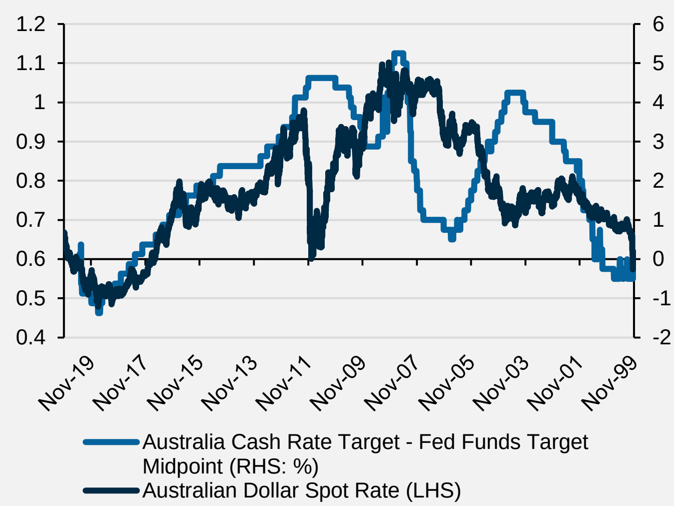
Source: Bloomberg and PGIM Fixed Income as of March 31, 2020.

In the weeks and months ahead, it seems likely that the 10-year Treasury yield will remain in the lower half of its recent 0.3-1.3% range as the economy passes through its sudden stop. Once a recovery takes hold—likely several weeks if not months down the road—a full reversion to our previous forecast for a long-term central tendency of 1.5–2.0% appears unlikely. Rather, a more moderate central tendency along the lines of 1.25-1.50% seems in order given the additional headwinds facing the global economy and the probable lower realm for the Fed funds rate.

Will the Splash Down in the Fed Funds Rate Finally Tame the Runaway U.S. Dollar?

After running strong for most of the last decade, maybe the U.S. dollar's momentum is about to fade, thanks to the Fed's recent interest-rate splash down. Taking the Australian dollar's performance this century as an example, its value has essentially corresponded to its interest-rate differential relative to the U.S.—i.e., when Australian rates were high and/or rising, the currency went up and vice versa. The last 10 years have epitomized the "vice versa" as Australian rates have dropped 4 percentage points versus U.S. rates, and the Australian dollar lost half of its value (see Figure 4).

Figure 4: Does the Decline in the Australian Dollar Serve as a Precedent for the U.S. Dollar With the Fed Funds Rate at Zero?



Source: Bloomberg and PGIM Fixed Income

With the Fed taking the funds rate to zero and the U.S. correspondingly losing the last of its carry advantage relative to Australia and the rest of the DM currency landscape, the carry-driven rally in the U.S. dollar may finally be over. And beyond carry, the strong rally may have stretched the dollar's valuation as well, leaving the outlook for DM currencies more favorable than it has been for some time. While the drop in U.S. rates is also a plus for EM currencies—which have also depreciated over the last several years—their currency performance may suffer relative to their DM counterparts amid the greater fundamental headwinds created by the virus and oil price shocks.

In terms of the longer-run prognosis for the spread markets, two things seem clear: on one hand, credit selection will be paramount, which is to say that regardless of the price or spread, if a credit is going to default, it may not be cheap enough. The sudden stoppage of activity will result in plenty of credit problems in the months ahead. The analysis should not only identify the potential survivors during the crisis, but it should also spot those issuers who will thrive during the recovery.

On the other hand, most credits will likely pull through this crisis without defaulting, and their spreads are likely to end up tighter, if not substantially so, over the coming 12 to 24 months. The likelihood of tighter credit spreads in aggregate should power strong returns for the non-government credit sectors, even in the event that interest rates on government bonds retrace some of their latest declines.

Spread Sector	Summary View
Agency MBS	Underweight vs. other spread sectors—MBS spreads have limited further potential relative to other spread sectors.
Securitized Credit	Favor top of the capital structure near term. Opportunities may emerge later in in off-the-run asset types and mezzanine investments.
Investment Grade Corporates	Positive intermediate and longer term as a recovery surfaces. Favor U.S. money center banks as well as select defensive sectors.
Leveraged Finance	Bullish over the medium term, especially in more defensive/isolated sectors. Actively managed credit selection critical.
Emerging Markets	Long-term constructive; prefer hard currency sovereigns, select corporates & local rates; EMFX later.
Municipals	Near term cautious, longer term opportunistic.

The Bottom Line: For now, rates are likely to remain very low and range bound, possibly even more so than previously expected (e.g., a 0.3-1.3% 10-year Treasury yield for now and a 1.25-1.50% central tendency later; a 0% 10-year JGB, and sub-zero 10-year Bund). A potential economic recovery in the second half of 2020 is likely to fuel a reversion to an aggressive search for yield and return, driving strong, but possibly volatile, spread product outperformance over the balance of 2020.

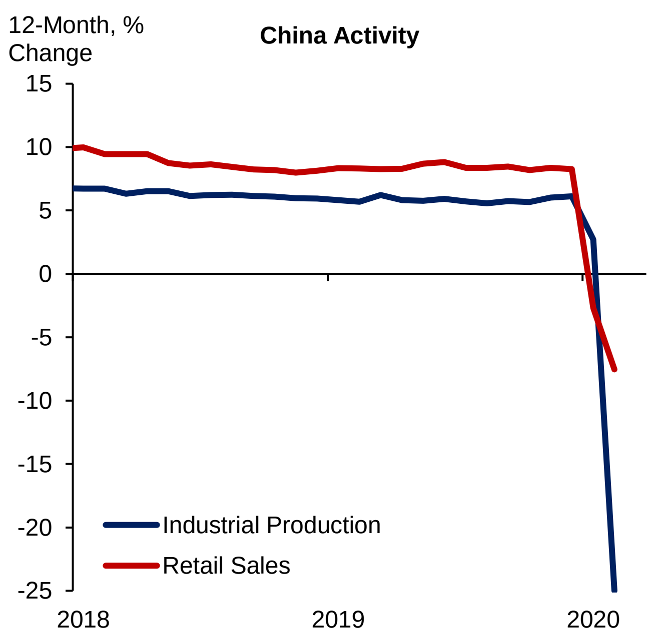
Looking into the Eye of the Storm

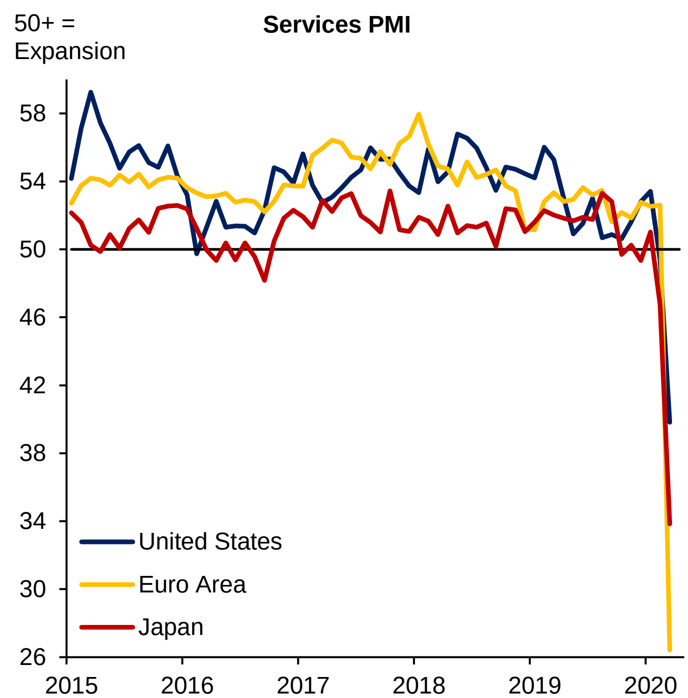
The coronavirus is hitting the global economy like a bolt of lightning. The quarantines and "social distancing" necessary to protect public health have triggered widespread shutdowns on the production-side of the economy and a collapse of spending on the demand side. To make matters worse, economic uncertainty has spiked. At this point, it's difficult to project with any confidence how long these disruptions will persist.

In response, central banks around the world have taken aggressive actions to provide liquidity to markets and support their economies. Sizable fiscal stimulus is also being implemented in many countries. While these efforts will help blunt the virus' blow, *the outlook for growth ultimately depends on how quickly the virus can be contained—the longer the contagion persists, the more severe the economic downturn.* A longer-lived pandemic will also translate into more sustained damage to the economy's underlying structure, likely meaning a more muted recovery once the virus abates.

China's experience during the first quarter offers some ideas regarding the forthcoming hit to economic activity in the rest of the world. As shown in Figure 1, Chinese industrial production and retail sales plunged as quarantines took hold and, taken together, point to a sharp contraction in economic activity during the quarter. Similar to other gauges, flash services PMIs in the United States, euro area, and Japan collapsed in March, and consumer confidence has moved down. Another warning of severe storms ahead is the 10 million cumulative surge in U.S. initial unemployment claims during the last two weeks of March, an order of magnitude larger than anything seen during the global financial crisis. Accordingly, we see the U.S. unemployment rate rising to 10%, and likely much higher, during the months ahead.

Figure 1: Economic Indicators





Source: CNBS, IHS Markit, Haver Analytics. Data are as of February and March 2020, respectively. Note: Series are normalized using data from 1985-Present.

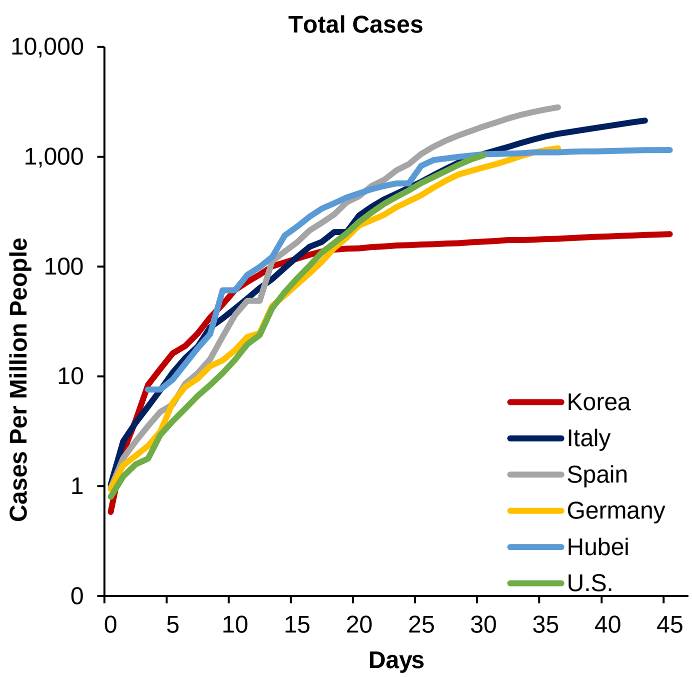
In parallel with the coronavirus, the global economy has sustained a first-order oil shock, which has sent prices tumbling. Our sense is that the major oil-exporting countries, including Saudi Arabia and Russia, have sufficient resources to weather the downtown. But we are closely monitoring several other oil producers, particularly Colombia and Ecuador (which now seems headed toward debt restructuring). In addition, a swath of global corporate issuers, including the U.S. shale producers, are highly exposed to the fall in oil prices. President Trump is seeking to engineer a 10+ million barrels/day supply cut with Russia and Saudi Arabia, but the prospects for success are uncertain.

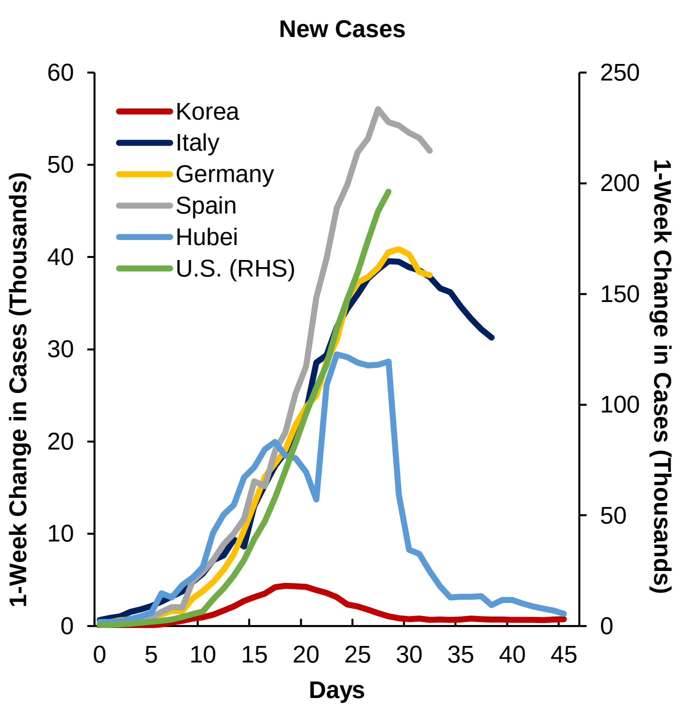
Mapping the Virus' Spread

The coronavirus is spreading rapidly around the globe, with more than 1.3 million recorded cases, and deaths now exceeding 70,000. In discussing these data, we recognize concerns about their quality and comparability across countries, particularly for China. Nevertheless, given the virus' central role in shaping the outlook, we see value in teasing out a few high-level observations.

Most worrisome, of countries that have wrestled with intense outbreaks, only China and South Korea appear to have achieved meaningful containment (Figure 2). Italy, Spain, Germany, France, and Iran—despite quarantines and other actions—have continued to see the virus spread. That said, the number of new cases in several of these countries seems to be heading down. More recently, the coronavirus has spiked in the United States, which now has 350,000 cases, led by an outbreak in New York and New Jersey. The United States, Germany, and China's Hubei province and have sustained more than 1,000 confirmed cases per million population, with Italy and Spain exceeding 2,000. Notably, Japan, which also has a large elderly population, has successfully kept the virus at bay to this point. Intensifying this fight, Prime Minister Abe recently declared a state of emergency and announced a large fiscal package.

Figure 2: The Evolution of the Coronavirus Outbreak





Source: Johns Hopkins Coronavirus Resource Center, Worldometers, and PGIM Fixed Income, Data as of March 29, 2020.

Going forward, the trajectory of the virus' spread will be the key factor determining the performance of the global economy. *In this regard, the following questions will be front and center. First, how long does it take for the number of new cases to peak—in the United States and in the rest of the world? Second, from the date of peak new cases, how long to achieve significant containment, as indicated by stability in the number of total cases? Third, once containment has been achieved, how long to get the economy back operating near its pre-crisis level?*

Global Policy Response

In response to the stresses, global policymakers have been swinging into action. The Federal Reserve has moved with historically unparalleled vigor. It has quickly deployed—and then moved beyond—its playbook from the global financial crisis. The Fed has cut its policy rate to zero, re-opened its swap lines, unleashed unlimited QE purchases, and injected huge quantities of liquidity into the markets. Further, in conjunction with Treasury, the Fed has taken steps to support a range of risky assets—including commercial paper, securitized products, and investment grade corporate bonds. For its part, Congress has approved a $2 trillion stimulus package (nearly 10% of GDP) to provide help for the unemployed, cash to many households, resources for small businesses, and a bailout for the airlines. Congress also gave Treasury a $450 billion war chest to support a further expansion of Fed facilities. Depending on specific circumstances, the Fed may be able to lever these funds by five to ten times.

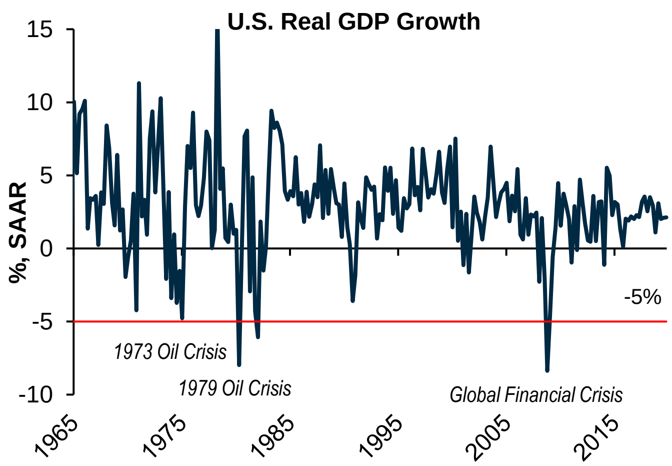
As a broad statement, we see these efforts by U.S. policymakers as providing meaningful support to workers, small businesses, and investment grade corporates (through Fed facilities). So far, however, there seems to be less of a safety net for high-yield issuers, although the Fed and the Treasury may yet engineer support for this segment of the market as well.

Like the Federal Reserve, the ECB has also moved aggressively. After a verbal fumble during her press conference, Madam Lagarde put forward the Pandemic Emergency Purchase Program (PEPP), a massive €750 billion QE effort. Notably, Greek debt will be purchased as part of the program, and the ECB has indicated that it will not enforce its 33% issue/issuer limits. Along with existing programs, ECB purchases are slated to exceed €1 trillion by the end of the year. This campaign has been well received by markets and has allowed peripheral spreads to tighten considerably. As for fiscal policy, EU governments have not yet agreed on meaningful new area-wide measures. Germany and the Netherlands vetoed an initiative spearheaded by France, Italy, and Spain to issue collective "corona bonds," but other possibilities remain on the table. For example, the European Stability Mechanism (ESM) could roll out conditionality-light programs, which could unlock access to the ECB's Outright Monetary Transactions. At the national level many countries—including Germany, France, Spain, and Italy—have approved significant fiscal packages. Many of the emerging markets are also taking monetary and fiscal actions. For example, India, Chile, and Peru have significantly cut rates, and South Africa has kicked off a QE program with Brazil considering such action. *Notably, the Chinese authorities have been relatively measured in their policy responses*, notwithstanding a recent 20 bp cut in one of their policy rates and targeted lowering of reserve requirements. Concerns about financial leverage and other excesses appear to be increasingly constraining their flexibility on macroeconomic policies.

Global Growth—Absorbing the Scourge

In line with this extraordinary shock, we see the global economy as contracting sharply during both the first and second quarters. The first-quarter contraction was driven by a massive drop in Chinese activity, as the effects of the virus and the resulting lockdown weighed on performance. In tandem, growth elsewhere in the world also slowed sharply during the first quarter due to drag from China as well as the virus' mounting effects. In the second quarter, China is likely to see some recovery as workers get back to their posts. But growth elsewhere in the world will feel the virus' heaviest blows. No corner of the globe is likely to be immune. *For the United States, second-quarter GDP growth is shaping up to be a bloodbath.* Various analysts are calling for a drop in the range of -10% to -40% (saar), which—as highlighted in the accompanying chart—would be the sharpest of the post-war period. The story for Europe is broadly similar. With many of the continent's major economies being battered by the virus, *euro-area growth numbers for the second quarter may be even worse than those for the United States.*

Figure 3: History of Large Declines in GDP



Source: Bureau of Economic Analysis, PGIM Fixed Income, and Haver Analytics as of March 31, 2020.

Growth in the emerging markets is also getting slammed. These countries are feeling disruptions from social distancing and other efforts to contain the virus, coupled with drag from falling global demand and a collapse in investor risk appetite. Furthermore, as noted above, many have been hit by the sharp fall in oil prices. In this environment, a wave of credit downgrades has started to materialize.

Taken together, we see global growth during the first half as likely to contract more sharply than during the global financial crisis, with numbers in the range of -5% to -10% (saar) quite plausible. Our forecast pencils in a recovery at some point in the second half of the year, as pent-up demand and monetary and fiscal stimulus fuel a rebound. But the key question framing the outlook is how quickly and how strongly that recovery takes hold. If it comes relatively quickly and the drop during the first half of the year is closer to -5%, the global economy has a chance to finish flat for the year as whole. However, more likely, if the first half decline is near -10% and the recovery is correspondingly delayed, outcomes around -3% seem reasonable.

At this stage, we view all economic forecasts only as possible scenarios. Given the enormous uncertainties regarding the trajectory of the virus, the confidence bands around such projections are very wide—with the biggest risks skewed toward the downside.

Developed Market Rates

When looking at the developed market rates complex, we've observed some tangible improvement after the numerous steps by major central banks to improve conditions across the most liquid rate markets. In particular, the Federal Reserve's open-ended Treasury and MBS purchases as well as its larger repurchase operations narrowed the severe dislocation between off-the-run and on-the-run Treasuries by about 60% from the most distressed levels and normalized the basis between the cash Treasury bond and the long futures contract by about 80% from the most distressed levels.

Staying within the U.S., we believe the Fed will keep the Fed funds rate at zero for the foreseeable future, potentially giving the 10-year yield some scope to rally into the 50 bps area after Q1's staggering drop of 124 bps to 68 bps. However, some positive news about the effects of the fiscal stimulus and restored economic activity could lift the 10-year yield higher as the quarter concludes. Furthermore, issuance from the Treasury is set to balloon—initially in T-bills and then likely further out the curve—as it seeks to finance fiscal stimulus.

In addition, as conditions continue stabilizing across the rates markets, we're maintaining long positioning in five- and 10-year TIPS, with the five-year TIPS yield potentially trading into -1.0% to -1.5%, which should also lead to a bounce in inflation breakevens. If the Treasury proceeds with its 20-year bond auction in May, we believe that may provide an attractive opportunity as the initial re-opening auction may clear at a relatively attractive yield.

We believe some of the rich interest-rate derivative contracts in the U.S. could significantly underperform during the quarter amid the Fed's efforts to improve trading in cash Treasuries. The LIBOR/OIS spread should also tighten from a relatively dislocated level as the Fed's commercial paper backstop goes online in early Q2.

Outside of the U.S., we're long five-year and 10-year French OATs amid the ECB's ongoing asset purchases, and we're long real rates in Canada, which are marginally positive, relative to short real rates in the UK, which trade in solidly negative territory.

Outlook: Tactical. U.S. Treasury collateral may generally richen in early Q2 as the Fed continues to liquify the market, yet the 10-year yield may correct higher amid incoming fiscal stimulus and surging Treasury issuance. We favor short positioning in rich derivatives and long positioning in 5- and 10-year TIPS. Intermediate French OATs appear attractive as do real rates in Canada vs. the UK.

Agency MBS

The U.S. mortgage-backed securities market ended the first quarter with the momentum of the Fed's open-ended purchase program, which pulled spreads significantly tighter as the second quarter began. The influence of the Fed's purchases could contribute to further spread tightening—similar to the pattern seen in prior quantitative easing cycles—as it siphons a significant amount of bonds out of the sector.

However, the rapid spread tightening emerged as origination levels tumbled to roughly a third of their levels only a few weeks earlier, and origination may not return to historically seasonal levels until the virus-related lockdown concludes. The supply situation has been exacerbated by originators who needed to repurchase previously sold bonds.

With that backdrop, we expect the Fed will absorb all of the projected net supply in 2020 and remove a portion of 2019 production as well. When origination potentially increases towards the end of Q2—or when profit takers emerge—spreads could meet some resistance to further tightening into the third quarter of the year.

In terms of positioning, the Fed's demand relative to origination will dictate performance, and we're maintaining neutral positioning with a preference to lower coupons as Q2 commences. Even if MBS prepayments accelerate, we expect the Fed will reinvest into MBS until a decision is made on reintroducing the reinvestment cap. We expect dollar rolls to trade special, and we favor maintaining TBA positions relative to specified pools for liquidity. Although specified pools may remain relatively cheap, they may only see improved performance once Fed demand eventually wanes and accounts seek better value than generics. We also prefer 30-year bonds over 15-year issues given the Fed's focus on longer maturities.

Outlook: Underweight vs. other spread sectors. While MBS spreads may compress further on Fed purchases, they have already tightened significantly. We believe additional compression may be limited, therefore we favor other spread sectors over MBS.

Securitized Credit

Sector	Subsector	LIBOR OAS	Spread Change (bps)
		3/31/2020	Q1
CMBS			
CMBS: Conduit 2.0	First-pay 10-year	180	98
CMBS 3.0 Conduit BBB-	BBB-	900	625
CMBS: CMBX (OTR)	AAA	93	46
CMBS: CMBX (2012)	AA	293	228
CMBS: Agency Multifamily	Senior	75	20
Non-Agency RMBS			
Legacy	RPL Senior	300	214
Legacy	'06/'07 Alt-A	600	460
GSE Risk-Sharing	M2	925	732
CLOs			
CLO 2.0	AAA	250	117
CLO 2.0	AA	375	195
CLO 2.0	BBB	800	440

ABS			
Consumer ABS	Seniors (One Main)	500	420
Consumer ABS	B (One Main)	900	775
Refi Private Student Loan	Seniors	325	230
Generic	AAA Credit Card	100	72

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Non-Agency RMBS: In response to coronavirus-induced hardships, the GSEs are rolling out massive relief programs to stave off a second foreclosure crisis. For example, foreclosures and evictions will be suspended for 60 days and forbearance programs will allow up to 12 months payment forbearance. The programs do not extend to the private market, but we expect servicers will do so if they can extract a safe harbor from litigation as they did in 2009. The spike in unemployment and contraction in economic activity is massively negative for housing and construction. Mitigants to these risks are high post-crisis underwriting standards, including conservative documentation and LTVs. A meaningful increase in affordability due to declining mortgage rates could cushion the blow in the intermediate term, but the transition mechanism between the capital markets and the primary mortgage rates remains dislocated with the spread between these markets near historical wides. The massive repricing in the credit risk transfer market in late Q1 created a tempting entry point, but we believe monthly remittance reports, and the concomitant delinquencies, will be eye-watering for some time, and the full scope of the damage warrants some patience. We think senior reperforming loan tranches appear attractive after repricing during the volatility, but we anticipate legging into the trade as remittances will be optically challenging for some time.

CMBS: Coronavirus obviously has significant implications for the commercial real estate industry. The effect on business and leisure travel is devastating for hospitality/lodging with revenue per available room (RevPAR) dropping about 70% year-over-year. This may be the last straw for the troubled retail sector. Longer-term, we view the crisis as negative for office properties as working-from-home increasingly looks like a viable long-term option for parts of the workforce. Price action in CMBS has been a fascinating interplay between liquidity premia and fundamental credit concerns. For example, AAA-rated CMBS spreads widened to around 400 bps, but the Fed's strong intervention prompted spreads to snap back inside of 200 bps. Conversely, subordinate bonds continued to decline as their fundamental picture looks horrific (e.g., BBB-rated CMBS could have 100% principal loss if mortgage losses exceed about 10%). Despite the recovery in AAA spreads, CMBS issuance is likely to remain on hold in the near term amid the stress further down in the capital structure. We suspect issuers would prefer to wait and lean on the Fed to extend TALF to AAA-rated CMBS to help spreads further. In terms of single asset single borrower (SASB), subordinate bonds have widened more than AAAs, and they have performed better than we would have expected given the embedded structural leverage. We suspect market segmentation is a factor in this price action as mezzanine SASB tend to have a meaningful CRE-centric buyer base who are less relative-value oriented.

ABS: The outlook for ABS is particularly mixed. We expect mainstream ABS, such as autos/cards, to perform well; we expect marketplace lender deals to perform abysmally; and we expect mixed performance from esoteric asset-backed securities. We continue to like the refinanced student loan sector, but it may struggle in the near term as borrowers try to understand how the recently passed student loan relief legislation may affect them. The bill won't help the private student loan space, but public policy risk has never been higher. Notable sectors eligible for the recently announced TALF include autos, student loans, credit cards, equipment finance, and servicing advance receivables. The market was somewhat disappointed by new TALF as it only applies to newly issued deals, whereas the previous TALF was extended to secondary issues.

CLOs: Prices on AAA-rated CLO tranches recovered about 10 points during the last week of Q1, but still entered Q2 around LIBOR +250 bps on AAAs. From a fundamental perspective, while there are few concerns about the integrity of AAA tranches, there is tangible market concern surrounding both mezzanine tranches and underlying loans. As the global slowdown occurs, we expect rating agencies to continue taking negative action on the underlying loans in portfolios. We expect an acceleration of companies to either migrate to CCC or to default, which will begin to stress CLOs' overcollateralization tests (a positive for AAAs as they will delever). While we had recently downgraded our internal assessment of bank loans on the expectation for higher loss severities, we now believe default frequency is likely to be much higher as well. We expect the senior CLO tranches to remain protected from credit losses, but the lower mezzanine tranches may be impaired or written off entirely. From a CLO tranche downgrade perspective, rating agencies have started to take action on mezzanine tranches, and we expect more to come. CLOs were excluded from the first TALF iteration, but the New York Fed might be open to including CLOs on a limited basis with "static deals" being the most likely option. We are keeping a close watch on CLO managers as some business models may come under stress from either underwater warehouses or from reduced subordinate asset management fees if cash flows are diverted.

Outlook: Remain highly positive on the top of the capital structure for liquidity and certainty of outcomes in the near term. Opportunities in off-the-run asset types and mezzanine investments are increasingly tempting, but we believe better entry points will emerge as trapped longs lighten up on risk and the extent of the economic damage becomes evident in Q2.

Investment Grade Corporate Bonds

	Total Return (%)	Spread Change (bps)	OAS (bps)
	Q1	Q1	3/31/2020
U.S. Corps.	-3.63	+179	272
European Corps	-6.15	+146	239

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Investment grade corporate bonds succumbed to the unprecedented economic and business pressures resulting from the COVID-19 virus and the dramatic slide in oil prices. U.S. corporate spreads over similar-maturity Treasuries rose to a high of ~375 bps in mid-March before narrowing into quarter end following aggressive actions from the Fed. Higher-quality and short-to-intermediate term issues held up best.

European corporate spreads also rose sharply, but were initially backstopped by the ECB's existing corporate bond buying program and then further supported by the bank's mid-March announcement that it would dramatically increase bond purchases, among other stimulus programs.

U.S. Corporate Bonds: Key factors supporting the market in the near term include the U.S. government's $2 trillion stimulus package and the potential benefits of the Fed's new credit facilities to support both the primary and secondary investment grade corporate bond markets. We believe the Fed's new programs may help open the corporate markets, including access for lower-quality investment grade issuers, although the Fed's buying will not begin until early Q2.

Liquidity, which was at a near standstill, improved following the Fed's actions with new issuance and investor demand rising dramatically. Supply hit about $100 billion the week of March 23 with order books oversubscribed at about ~5.5 times. New issues performed well, closing that week about 40 bps tighter, on average.

Not unexpectedly, credit fundamentals have taken the spotlight. Corporate management teams across industries are scrambling to deleverage, shore up their balance sheets, and increase free cash flow. Meanwhile, the rating agencies have become more active with negative outlooks and rating downgrades. Notable fallen angels to the high yield sector include Kraft Heinz, Occidental Petroleum, and Ford Motor Company, along with several other energy companies. The extent of downgrades depends on the duration of the virus-related impact—estimates range from $200 million to $600 million or more in the next six months. Currently, the energy, auto, travel, leisure-related, gaming, and retail sectors (albeit bifurcated) are the most impacted.

At this juncture, we see opportunities in many higher-quality names with good liquidity, including longer-duration issues, and in certain BBB-rated issuers that have the ability to maintain investment grade ratings if they cut leverage, dividends, and/or share buybacks. At present, a number of BBB-rated issuers are trading at prices lower than BB-rated credits, which may spell long-run opportunities in certain companies. We are also analyzing fallen angels for their rating upgrade potential once the virus-impact fades.

We remain overweight U.S. money center banks, electric utilities, and taxable municipals (many of which are backed by hospitals and universities). We are underweight industrials, but still hold core positions in BBB-rated credits, including shorter maturities that may benefit from the Fed's corporate buying program. Select exposure to energy issues that were deleveraging fared poorly, but we believe many have sufficient near-term liquidity and the necessary levers to pull in order to stabilize their credit metrics until oil prices rise.

European Corporate Bonds: European investment grade spreads experienced volatile repercussions from the virus-shutdown, but slightly less so than their U.S. counterparts. Similar industries were negatively impacted, but the key differentiator was the ECB's existing bond buying program and its mid-March announcement that it would buy up to €750 billion more bonds, both sovereigns and corporates, by year end. The Bank of England and other European governments are providing additional support.

Some additional reasons for the backstop in European spreads include the smaller size and scale of the energy and oil industries—i.e., most European issuers in the sector are more defensive than U.S companies and have little exposure to the pipeline and drilling industries. The European corporate indices also tend to be shorter duration than U.S. indices (~ 5 years vs. 6.5-7 years.)

As in the U.S, the European new issue market came to life toward the end of Q1 with many credits offering large discounts, albeit sometimes at the expense of secondary market issues. Multi-tranche European issues typically offered steep spreads that presented opportunities for active management. Although spreads widened across the curve, financial issues, along with sectors that are most aligned with an economic shutdown, underperformed. Spreads in non-cyclical industries, such as utilities, widened but weathered the storm better.

In European corporate portfolios, we slightly increased spread duration after being flat vs. the index. We prefer Euro spreads to USD spreads due to the technical tailwind from the ECB. We remain overweight banks that we believe will benefit from full government support. We are also overweight "reverse-yankee" Euro-denominated U.S. corporates. Many of these issues came to market with large concessions to USD holdings and EUR issuers of similar quality.

Global Corporate Bonds: We also hold a modest preference for Euro vs. USD spreads in global portfolios and are slightly overweight spread duration risk (long exposure to the Euro and USD and short exposure to the yen, Swiss franc, etc.). We remain flat to underweight sterling denominated credit spreads. We still prefer U.S. money center banks and utilities denominated in dollars, as well as banks and select corporates denominated in Euros (but not necessarily European companies). We continue to take advantage of price and yield dislocations between EUR and USD bonds of the same and/or similar issuers.

In sum, we believe that current IG corporate spreads represent recessionary levels, but that most of the bad news is already priced into the market, and we are actively searching for opportunities to add value over the intermediate and long term. Despite a looming global recession, we believe the extraordinary measures of nearly all global central banks and governments will help economies reopen once the virus recedes. If not, central banks and governments worldwide may indeed increase their stimulus measures going forward.

Outlook: Very positive in the intermediate and longer term as a recovery surfaces and spreads likely tighten. Favor U.S. money center banks as well as select defensive sectors while searching for undervalued issues.

Global Leveraged Finance

	Total Return (%)	Spread Change (bps)	OAS/DM (bps)
	Q1	Q1	3/31/2020
U.S. High Yield	-13.12	+517	911
Euro High Yield	-14.50	+455	779
U.S. Leveraged Loans	-13.19	+513	974
Euro Leveraged Loans	-14.40	+576	998

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U.S. Leveraged Finance: Following the dislocation and dysfunction across the high yield market in Q1, we expect continued volatility going in Q2 as well. The market's view on the length of the COVID-19 shutdown, the extent of its economic impact, and effectiveness of policy response will drive returns in the high yield market over the short term. Additional uncertainty is fueled by the potential influx of paper from issuers downgraded to high yield. Our fallen angel estimate for this cycle is between $300 billion and $600 billion, or 25% to 50% of the total size of the high yield market. However, there are mitigating factors to the effects of the incoming supply. These issuers will not all enter the market at once, and we expect a large proportion of investment grade managers to continue holding these names. There is also relatively strong demand for the BB-rated segment of the high yield market.

There are factors mitigating the economic fallout as well. For example, high yield issuers have been more defensively positioned than in prior downturns. The BB share of the market has been much higher than in previous cycles, and there have been very few aggressively financed LBOs recently. In addition, given the low-rate environment of the past several years, companies had largely refinanced near-term debt at low interest rates and termed out maturities. We also believe most asset allocators were underweight high yield prior to Q2. We recently observed cash from the sidelines re-allocating to high yield, which has supported prices and provided high yield issuers with a source of capital.

As our base case, we are assuming a four-month shutdown at most as well as additional fiscal and monetary stimulus as needed. Under this scenario, we are estimating a 15-20% default rate this year, a 5-10% default rate in 2021, and a 1% default rate for 2023. This cumulative default rate of 24% (or 8% annualized over three years) compares to a three-year implied default rate of 9%-10% based on current spread levels. Thus, the market is providing a reasonable amount of spread compensation for our default scenario.

As a result, we are cautiously bullish over the medium term and believe the market will snap back if virus cases plateau at manageable levels. Furthermore, high yield spreads have reached a level that has historically been an attractive entry point. Over the last 25 years, there have been seven periods when high yield spreads traded above 800 bps. In all cases, the high yield index generated above-average returns in the subsequent 15-month period. Therefore, our two-year outlook is highly constructive.

In terms of positioning, we are adding to credits we view as clear survivors through the shutdown and selectively to those with some default risk that are trading at prices well below our expected recovery values. We are cutting exposure to more levered credits that have not appropriately repriced due, in our view, to market perception that they are in industries that may be more insulated from the virus shutdown than we believe. We are also purging default candidates that we expect to have low recovery values.

Within the leveraged loan market, we favor the BB-rated segment of the market, particularly companies with durable business models that will not be materially affected by COVID-19. Industries, such as cable, healthcare, food and supermarkets, should fare well given current market dynamics.

Overall, however, we expect to see an uptick in loan default rates, especially for B2-rated and B3-rated issuers with direct or early secondary exposure to COVID-19. The coronavirus crisis can be expected to take a significant toll on many issuers, especially if normal economic activities are not resumed within the next 30-60 days. Most leveraged loan issuers are not structured to withstand three or more quarters of 30% declines in revenue. We believe risks prevail in the retail, energy, gaming & lodging, airline, auto supplier, and leisure industries.

European Leveraged Finance: We remain cautious on credit spreads in the near term given current high volatility and potential outflows, but believe current valuations offer an attractive entry point in the medium to long-term. While our base case is for a further widening of spreads as economic news, downgrades, and defaults develop over the coming quarters, we are finding value in defensive sectors, such as telecom, technology, and healthcare, as well as in some idiosyncratic situations where we think recent price reactions have overshot fair value.

We have seen several bond issuers in the most immediately impacted sectors (e.g. leisure, travel, gaming, etc.) quickly trade to distressed levels. We are also beginning to see many credits downgraded by the rating agencies, which we expect to continue in Q2. In addition, we expect defaults to meaningfully rise in the coming quarters, with the ultimate severity of the default cycle driven by the duration of the shutdown.

We have seen extraordinary stimulus measures outlined by many major European governments, though questions remain with respect to whether that funding will be accessible for highly leveraged companies. Loans to bridge short-term liquidity strains are undoubtedly helpful, but will also lead to an increase in leverage for companies over the longer term and create second-order impacts in the future.

In terms of portfolio positioning, we are broadly running market level risk with investments weighted towards the most attractive relative-value opportunities given the evolving backdrop. Ultimately, we think actively managed credit selection will be a differentiating factor between managers in volatile markets.

Outlook: Bullish over the medium term. While the coronavirus has delivered a sharp economic blow, there are several mitigating factors throughout the sector. Meaningfully wider spreads present an attractive entry point over the medium to long term, especially in more defensive/isolated sectors. Actively managed credit selection will be a differentiating factor in performance going forward.

Emerging Markets Debt

	Total Return (%)	Spread / Yield Change (bps)	OAS (bps)/ Yield %
	Q1	Q1	3/31/20
EM Hard Currency	-13.39	335	626
EM Local (hedged)	-1.43	0.14	5.36
EMFX	-8.48	0.10	3.46
EM Corps.	-10.17	288	599

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While the Q1 performance of emerging market debt reflected the dramatic global liquidity and confidence shocks related to the spread of COVID-19 and the decline in oil prices, the speed and intensity of selloff exacerbated the underperformance. Although the policy measures implemented by fiscal authorities, the Fed, and other developed market central banks in late Q1 provided necessary liquidity and support to EM, we believe more meaningful measures from the IMF and G-20 are needed to ensure that the liquidity shortfalls impacting EM do not cascade to broader solvency issues (see the box at the conclusion of this section). Additionally, access to additional direct Fed swap lines to markets, such as China, Indonesia, India, and South Africa, could also lead to additional stabilization within EM and should help address the severe dislocations and growth shocks within EM countries.

The intensity of the EM selloff was characterized by the severe dislocations from retail outflows, particularly out of passive EM ETFs. Quoted bid/offer spreads widened to 4 times normal levels in the hard currency and local bond markets. In reality, actual executed trades were occurring outside of these uncharacteristically wide spreads. Many B-rated issuers dropped to prices in the $40-$50 range, well below fundamental value, notwithstanding the more challenging macroeconomic scenario. Some of this reflected crowded overweight positioning or oil-sensitivity. Liquidity in EM has been worse than in 2008, not only due to AUM and issuance growth, but also because there is an imbalance between the “buy-side” and “sell-side.” To date, capital outflows from non-resident portfolios have been large, which has increased the need for support measures from the multilaterals and G-20 to limit the negative impact to EM moving forward.

The growth shock to EM is likely to be significant. Our 2020 EM growth forecast began the year at 4.6%, but it’s now possible that EM could be in a recession all year. EM growth forecasts are highly susceptible to downside revisions as many countries, such as Turkey, South Africa, Brazil, and India to name a few, are just beginning economic shutdowns. The approaches and willingness by EM countries to shut down their economies will differ, and those that react quickly, such as South Korea, Singapore, and other Asian economies, will likely bounce back quicker. The growth shock to Latin America and to commodity sensitive countries in Sub-Saharan Africa is likely to be larger. While a significant rise in defaults/restructurings is not our base case, we acknowledge that comprehensive support measures need to be considered.

EM Hard Currency Sovereigns and Corporates: We believe that distinguishing between technical dislocations and medium-term fundamental changes, along with careful security selection, is the best way to uncover value within hard currency sovereigns. In our view, select BBB- and BB-rated sovereigns, specifically those that have seen their spreads more than double, are attractive. Longer-dated bonds within the same ratings buckets also offer value. While we’re maintaining a focus on the higher-rated segments of the hard currency market, we will likely look to the new issue market to gain exposure to these issuers given the challenges of trading in the current market context. We expect relatively insulated sovereigns to remain active in the primary market in the near term.

The combination of global recession, depressed commodity prices, and the selloff within EMFX has created significant headwinds for EM corporates fundamentals. We expect the high yield corporate default rate to increase to 6-8% for 2020 vs. our forecast of 2% at the start of the year (for context, the default rate in 2009 was 9.6%). However, we believe valuations are attractive and spreads of around 600 bps adequately compensate investors for the risks. In terms of positioning, we prefer higher-quality high yield names and are underweight sub-scale oil & gas and commodity producers.

Local Rates: Within hedged local rates, overall EM duration offers value amid DM central banks' unconventional policies and the historically high interest rate differential between EM and DM. We see attractive opportunities in the five- to 10-year part of local curves. The short end of local EM curves rallied in response to emergency cuts by central banks, while the long end has suffered amid widening fiscal deficits and portfolio outflows. We are constructive on local bonds, particularly countries with high real yields, such as Mexico and Russia. We also like the three- to five-year part of the swap curve in South Africa, Brazil, Israel, and China where the differences between the policy rate and the belly of the swap curve is extreme and offers attractive carry and rolldown opportunities.

However, as the capital outflows in EM accelerate and currencies depreciate further, we could see countries replicate Hungary's recent de-facto rate hike. Turkey is a potential candidate that might implement capital controls as the market has started questioning its net reserves position. These countries were the biggest beneficiaries of global liquidity for past two years and ran policies inconsistent with their macro fundamentals. We are looking to underweight both Turkey and Hungary in the three- to five-year segment of the curve.

Given current rate levels, we're biased to reduce local exposure on further tightening. We are also at the end of an emergency rate cutting cycle in EM and may be entering an unpredictable phase of "quantitative easing" and potential capital controls by EM central banks.

FX: Despite the pronounced weakness in currencies, we do not see the necessary conditions for a sustained turnaround within EMFX, and we're maintaining a long USD bias. In our view, the Fed has substantially reduced the risk of a destructive, disorderly, and swift USD appreciation with the re-introduction of unlimited swap lines to major central banks and the quick expansion of limited swap lines to additional DM and select EM central banks. We'd note that these stabilizing measures are not likely to prompt a trend change. The worst of the selloff within EMFX is likely over, but we wouldn't expect EMFX to bounce back before late Q2 amid some signs of growth stabilization.

COORDINATED INTERNATIONAL SUPPORT FOR EM NEEDS TO HAPPEN—THIS IS HOW

During past global and systemic crises, emerging markets have benefitted from internationally coordinated support. The global scope of the current shock is also beyond what EM can insure against or offset by pro-active policy. While many countries have increased their foreign currency reserves, the uncertain length and severity of the forthcoming growth shock limits their immediate use, lest they be exhausted at a time of even greater need. Moreover, the traditional first line of defense—flexible exchange rates—also has limits.

Clearly the first order of business must be preventing liquidity stress from morphing into solvency problems, which would be more likely the longer liquidity stress drags on and global growth weakens. In line with the 2008 playbook, advanced-country central banks have begun to roll out swap lines with EM, though with limited counterparties and size. On the other hand, the IMF has been slow to act thus far, relying mostly on mobilization of its so-called "rapid lending instruments," which disburse limited funds without lengthy conditionality negotiations. Moreover, its lending capacity has not yet been scaled up, and relying on its existing "Arrangements to Borrow" from members would be a lengthy process with uncertain success and requires the use of traditional conditionality programs for disbursement.

A better approach would be to introduce another special SDR allocation—some $1 trillion, which would channel $500 billion to EMs for quick liquidity. A complement or substitute measure could be the extension of advanced-country swap lines with more EM central banks, especially in the fast growing and large Asian economies, which are essential for supporting global demand and growth. The ECB already has experience with swaps with the People's Bank of China, and if other countries were to follow this lead with larger lines, it could significantly boost the confidence in EM. In contrast, approaches that seek to apply instruments from low-income debt restructuring would appear less promising and insufficient.

Outlook: Long-term constructive. With spreads and yields at significantly wider levels and expectations for developed market rates to remain low for an extended period, we expect EM assets to maintain their longer-term value. We prefer hard currency sovereigns and select corporates, followed by select local rates. EMFX may take longer to rebound, with more episodes of volatility, than prior crises. We'd expect any recovery to precede a bounce in economic data, with higher-quality issuers recovering first, followed by lower-rated issuers.

Municipal Bonds

Municipal bonds underperformed U.S. Treasuries significantly across the curve in Q1 as mutual fund outflows and broad-based credit spread widening overwhelmed the market. Cross over buyers quickly took advantage of the market dislocation and drove a tax-exempt rally into quarter end; however, the 10-year and 30-year Muni/Treasury yield ratios still finished Q1 at dislocated levels of 191% and 147%, respectively. The mutual fund inflow cycle (61 consecutive weeks) came to an end in early March and was followed up by record outflows for two consecutive weeks; leaving YTD net inflows slightly positive.

From a credit perspective, a broad group of sectors, including airports, toll roads, dedicated tax bonds, healthcare, and State

GOs, have been negatively impacted by the crisis. While rating agencies have revised certain sector outlooks to negative and downgraded a variety of credits, the depth and duration of the crisis will determine the full credit impact. On a positive note, most high-grade revenue credits have strong liquidity provisions following years of economic strength and many have debt service reserve funds. For state GO credits, the delayed tax filing deadline will negatively impact state liquidity; however, states generally have access to internal borrowable cash, ability to reduce spending, and potential to borrow short term for liquidity purposes.

In addition, the recently passed Coronavirus Aid, Relief, and Economic Security (CARES) Act, provides funding to state and local governments, airports, transit systems, healthcare, and education. And while many Governors state that federal aid enacted so far falls short of states' needs, the bipartisan Congressional support for the emergency funding is a positive signal that more would be made available in the future. Discussions regarding a phase four stimulus plan highlights the need for additional funding for states and other municipal entities. In addition, several recently implemented Fed facilities with muni specific inclusions have helped stabilize the short-term tax-exempt market. The CARES Act also provides for the creation of a Federal Reserve facility to make open market purchases of state and municipal debt (as well as direct loans to those entities); while details remain unknown at this point, it's a positive sign that municipal market dislocation is a consideration.

While mutual fund outflows will likely continue near term, adjusted spreads provide an attractive entry point for retail investors. The depth of the recent cross-over buying indicates solid support for high-grade tax-exempts during market dislocations. Significant federal assistance is a positive for states and other hard-hit high-grade sectors. However, uncertainty regarding the depth and duration of the economic downturn will weigh on muni credits. In addition, certain high yield credits dependent on narrow revenue streams will likely experience a pickup in defaults. High grade taxable municipals should perform in line with comparably rated corporate bonds, although may be subject to more constrained liquidity. We believe that essential service revenue bond credits provide better insulation from multi-notch downgrade risk than corporate bonds.

Outlook: Near term cautious, longer term opportunistic. Our near-term caution is based on the uncertainty of the depth and duration of the crisis and the ultimate impact on municipal credits. We believe that the high-quality nature of municipal credit, federal assistance, and significant spread widening presents attractive opportunities for a wide range of investors. We continue to look for long-term opportunities amid the market volatility.

Important Information

Source of data (unless otherwise noted): PGIM Fixed Income and Bloomberg as of April 2020

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U.S. Investment Grade Corporate Bonds: Bloomberg Barclays U.S. Corporate Bond Index: The Bloomberg Barclays U.S. Investment Grade Corporate Bond Index covers U.S.D-denominated, investment-grade, fixed-rate or step up, taxable securities sold by industrial, utility and financial issuers. It includes publicly issued U.S. corporate and foreign debentures and secured notes that meet specified maturity, liquidity, and quality requirements. Securities included in the index must have at least 1 year until final maturity and be rated investment-grade (Baa3/ BBB-/BBB-) or better using the middle rating of Moody's, S&P, and Fitch.

European Investment Grade Corporate Bonds: Bloomberg Barclays European Corporate Bond Index (unhedged): The Bloomberg Barclays Euro-Aggregate: Corporates bond Index is a rules-based benchmark measuring investment grade, EUR denominated, fixed rate, and corporate only. Only bonds with a maturity of 1 year and above are eligible.

U.S. High Yield Bonds: ICE BofAML U.S. High Yield Index: The ICE BofAML U.S. High Yield Index covers US dollar denominated below investment grade corporate debt publicly issued in the US domestic market. Qualifying securities must have a below investment grade rating (based on an average of Moody's, S&P and Fitch), at least 18 months to final maturity at the time of issuance, and at least one year remaining term to final maturity as of the rebalancing date.

European High Yield Bonds: ICE BofAML European Currency High Yield Index: This data represents the ICE BofAML Euro High Yield Index value, which tracks the performance of Euro denominated below investment grade corporate debt publicly issued in the euro domestic or eurobond markets. Qualifying securities must have a below investment grade rating (based on an average of Moody's, S&P, and Fitch). Qualifying securities must have at least one year remaining term to maturity, a fixed coupon schedule, and a minimum amount outstanding of €100 M. ICE Data Indices, LLC, used with permission. ICE DATA INDICES, LLC IS LICENSING THE ICE DATA INDICES AND RELATED DATA "AS IS," MAKES NO WARRANTIES REGARDING SAME, DOES NOT GUARANTEE THE SUITABILITY, QUALITY, ACCURACY, TIMELINESS, AND/OR COMPLETENESS OF THE ICE DATA INDICES OR ANY DATA INCLUDED IN, RELATED TO, OR DERIVED THEREFROM, ASSUMES NO LIABILITY IN CONNECTION WITH THEIR USE, AND DOES NOT SPONSOR, ENDORSE, OR RECOMMEND PGIM FIXED INCOME OR ANY OF ITS PRODUCTS OR SERVICES.

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European Senior Secured Loans: Credit Suisse Western European Leveraged Loan Index: All Denominations EUR hedged. The Index is a representative, unmanaged index of tradable, floating rate senior secured loans designed to mirror the investable universe of the European leveraged loan market. The Index return does not reflect the impact of principal repayments in the current month.

Emerging Markets U.S.D Sovereign Debt: JP Morgan Emerging Markets Bond Index Global Diversified: The Emerging Markets Bond Index Global Diversified (EMBI Global) tracks total returns for U.S.D-denominated debt instruments issued by emerging market sovereign and quasi-sovereign entities: Brady bonds, loans, and Eurobonds. It limits the weights of those index countries with larger debt stocks by only including specified portions of these countries' eligible current face amounts of debt outstanding. To be deemed an emerging market by the EMBI Global Diversified Index, a country must be rated Baa1/BBB+ or below by Moody's/S&P rating agencies. Information has been obtained from sources believed to be reliable, but J.P. Morgan does not warrant its completeness or accuracy. The Index is used with permission. The Index may not be copied, used, or distributed without J.P. Morgan's prior written approval.

Emerging Markets Local Debt (unhedged): JPMorgan Government Bond Index-Emerging Markets Global Diversified Index: The Government Bond Index-Emerging Markets Global Diversified Index (GBI-EM Global) tracks total returns for local currency bonds issued by emerging market governments.

Emerging Markets Corporate Bonds: JP Morgan Corporate Emerging Markets Bond Index Broad Diversified: The CEMBI tracks total returns of U.S. dollar-denominated debt instruments issued by corporate entities in Emerging Markets countries.

Emerging Markets Currencies: JP Morgan Emerging Local Markets Index Plus: The JP Morgan Emerging Local Markets Index Plus (JPM ELMI+) tracks total returns for local currency–denominated money market instruments.

Municipal Bonds: Bloomberg Barclays Municipal Bond Indices: The index covers the U.S.D-denominated long-term tax-exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds. The bonds must be fixed-rate or step ups, have a dated date after Dec. 13, 1990, and must be at least 1 year from their maturity date. Non-credit enhanced bonds (municipal debt without a guarantee) must be rated investment grade (Baa3/BBB-/BBB- or better) by the middle rating of Moody's, S&P, and Fitch.

U.S. Treasury Bonds: Bloomberg Barclays U.S. Treasury Bond Index: The Bloomberg Barclays U.S. Treasury Index measures U.S. dollar-denominated, fixed-rate, nominal debt issued by the U.S. Treasury. Treasury bills are excluded by the maturity constraint but are part of a separate Short Treasury Index.

Mortgage Backed Securities: Bloomberg Barclays U.S. MBS - Agency Fixed Rate Index: The Bloomberg Barclays U.S. Mortgage Backed Securities (MBS) Index tracks agency mortgage backed pass-through securities (both fixed-rate and hybrid ARM) guaranteed by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC). The index is constructed by grouping individual TBA-deliverable MBS pools into aggregates or generics based on program, coupon and vintage.

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