

# QUARTERLY OUTLOOK

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APRIL 2021

**Next Phase for the Bond Bull Market: The Great Rotation**  
*Thoughts from our Chief Investment Strategist*

**Global Recovery Now a Foregone Conclusion—But Will It Be Too Strong?**  
*Thoughts from our Chief Economist*

# Fixed Income Overview

Our Second Quarter Outlook for 2021 serves as a reminder of how quickly events unfolded in slightly more than a year.

[In our Q2 2020 Outlook](#), our Chief Investment Strategist flagged the following: “*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?*”

And that is seemingly where we stand: credit spreads have generally compressed to or through their long-term averages and developed market rates have risen along with the economic reflation scenario.

- Therefore, in “[Next Phase for the Bond Bull Market: The Great Rotation](#),” Robert Tipp, CFA, Chief Investment Strategist and Head of Global Bonds, explains the potential switch in the drivers of bond market performance, one of the more critical variables in determining long-term rates, and two keys on which our outlook depends.

The confidence bands around economic forecasts in Q2 2020 were at historic wides given the uncertain trajectory of the pandemic and the global recovery. At the time, our Chief Economist noted that “*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.*” And that is seemingly where we stand as global growth contracted by less than 1% in 2020.

- Thus, in “[Global Recovery Now a Foregone Conclusion—But Will It Be Too Strong?](#),” Nathan Sheets, PhD, Chief Economist and Head of Global Macroeconomic Research, examines how divergences in global inflation and central bank policies may evolve, particularly as it pertains to 2022.

## Recent Thought Leadership on [PGIMFixedIncome.com](#):

- [All the Credit Episode 14: Exploring Alternatives](#)
- [Three Focal Points for the U.S.–China Relationship](#)
- [Dodging the Industry Potholes Across EM Corporates](#)
- [When Will the Jobs Come Back?](#)
- [All the Credit Episode 13: Investing Through the Recovery](#)

## [The Bond Blog @ PGIM Fixed Income:](#)

- [Powell Riding Herd Calms \(At Least Some of\) the Markets](#)
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- [Wealth Inequality – Seeking Ways to Lift More Boats](#)
- [China Helps Germany and the EU Through the Second Wave](#)
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## [Developed Market Rates](#) | 9

Constructive as developed market curves generally appear poised to bull flatten amid potentially overly optimistic inflation expectations.

## [Agency MBS](#) | 9

Neutral versus U.S. rates during Q2. We prefer other high-quality spread sectors over Agency MBS.

## [Securitized Credit](#) | 10

Positive on high quality securitized products, although we anticipate further spread softness in early Q2. We are cautious of mezzanine risk in CLOs and conduit CMBS, but see value in subordinates of select Single Asset Single Borrower CMBS, ABS, and non-agency Credit Risk Transfer RMBS.

## [Investment Grade Corporate Bonds](#) | 11

Modestly positive in light of central bank support and the prospects for an economic recovery. Favor U.S. money center banks as well as select BBB-rated issues, cyclical credits, and fallen angels.

## [Global Leveraged Finance](#) | 12

Constructive over the medium and long term. Spreads are at attractive levels and will drive strong returns for investors with longer-term time horizons. Over the near term, the market will likely remain volatile and difficult to predict. We believe actively managed credit selection will be a differentiating factor between managers.

## [Emerging Market Debt](#) | 12

Focused on bottom-up relative value across EM assets. Barbell positioning of EM sovereign and corporate risks should still offer value if financial conditions remain accommodative. EM local rates have repriced considerably, and, in a scenario of mild USD weakness, there is value in EMFX.

## [Municipal Bonds](#) | 14

Constructive based on expectations for supportive technicals through Q2.

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## Next Phase for the Bond Bull Market: The Great Rotation

Recent years have seen a trend towards roller coaster markets with jarring volatility. Clearly, the past year has exemplified this trend. But as trying, and at times harrowing, as it's been, the major markets have still posted solid returns on average.

Figure 1: Total Returns Through the Arc of the Recovery

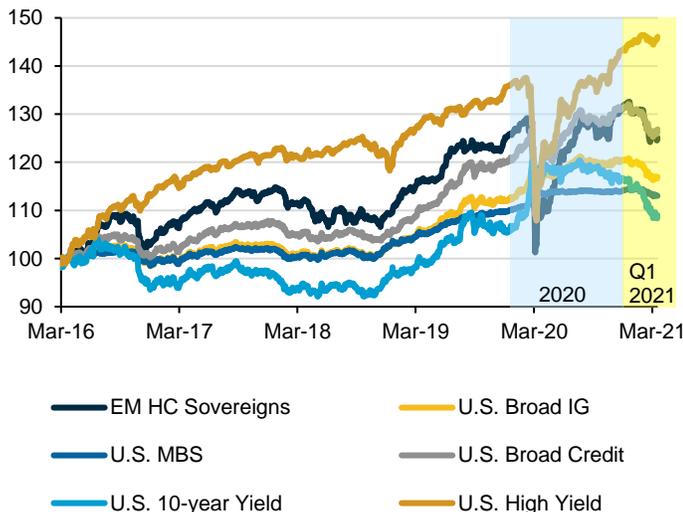


Source: PGIM Fixed Income and Bloomberg as of April 2021

In that regard, [Investing Through the Arc of the COVID Recovery](#) isn't something new. Yes, the most recent rise in rates has taken a bite out of bond market returns, but has it turned the long-term trend from Bull to Bear? In our view—and according to the returns—the answer is a resounding “no.”

Overall, the fixed-income damage has been limited. Major indices—including the laggard U.S. Treasury sector—are ahead of their pre-COVID levels and by some margin (Figure 2). **At some point in the quarters ahead, however, we expect the driving force of performance to shift from credit to duration.**

Figure 2: Damage to Fixed Income: Contained So Far



Source: PGIM Fixed Income and Bloomberg. Normalized to 100 as of March 2016.

In what is still a low-yielding world, how could bond returns be presentable, let alone solidly above those on cash? With the global economy sure to roar back from the COVID crisis, wasn't Q1's bath of red ink (Figure 3) the first of many losing quarters to come?

Figure 3: Q1's Red Ink—Setting Up for Better Things Ahead?

Individual FI Sectors	Q1 2021	2020	2019	2018	2017
European Leveraged Loans	2.08	2.40	4.38	1.25	3.72
U.S. Leveraged Loans	2.01	2.80	8.17	1.14	4.09
European High Yield Bonds	1.54	2.90	11.40	-3.35	6.79
U.S. High Yield Bonds	0.90	6.20	14.40	-2.26	7.48
Municipal Bonds	-0.35	5.21	7.54	1.28	5.45
European IG Corporate	-0.68	2.77	6.24	-1.25	2.41
Mortgage-Backed (Agency)	-1.10	3.87	6.35	0.99	2.47
CMBS	-2.32	8.11	8.29	0.78	3.35
EM Currencies	-2.57	1.73	5.2	-3.33	11.54
EM Local (Hedged)	-3.65	6.07	9.14	0.75	3.68
U.S. Treasuries	-4.25	8.00	6.86	0.86	2.31
EM Debt Hard Currency	-4.54	5.26	15.04	-4.26	10.26
U.S. IG Corporate Bonds	-4.65	9.89	14.50	-2.51	6.42
U.S. Long IG Corporates	-8.51	13.94	23.90	-7.24	12.09
Long U.S. Treasuries	-13.51	17.70	14.80	-1.84	8.53
Multi-Sector	Q4 2021	2020	2019	2018	2017
Yen Aggregate	-0.39	-0.8	1.64	0.93	0.18
Euro Aggregate (Unhedged)	-1.90	4.05	5.98	0.41	0.68
Global Agg. Hedged	-2.47	5.58	8.22	1.76	3.04
U.S. Aggregate	-3.37	7.51	8.72	0.01	3.54
Global Agg. (Unhedged)	-4.46	9.20	6.84	-1.20	7.39
Other Sectors	Q4 2021	2020	2019	2018	2017
S&P 500 Index	6.17	18.40	32.6	-4.4	21.26
3-month LIBOR	0.06	0.74	2.40	2.23	1.22
U.S. Dollar	3.66	-6.69	1.35	4.90	-7.85

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). European returns are unhedged in euros unless otherwise indicated. Performance is for representative indices as of March 31, 2021. An investment cannot be made directly in an index.

Before we answer, first a caveat: as the recovery powers ahead and stimulus brings inflation fears to a boil, the bond market may get jostled for another quarter or maybe even through the balance of the year.

But once we are beyond the peak momentum of the COVID recovery, it should become clear that the current rise in yields was a harbinger for a rotation of return drivers in the bond market. Returns from credit risk, the primary driver of bond returns over the last year, are likely to continue, but at a dramatically diminished pace. **Meanwhile, duration, which has been an overall headwind for the bond market over the last year, should**

# Bond Market Outlook

become a positive contributor once yields crest. At that point, newly steepened yield curves will likely support carry and roll down as return drivers with the potential for price appreciation as well if yields retrace some of their recent increase.

Despite searing growth fanning fears of inflation and pushing yields higher as we write, the basis for our long-term bullish hypothesis depends on two premises:

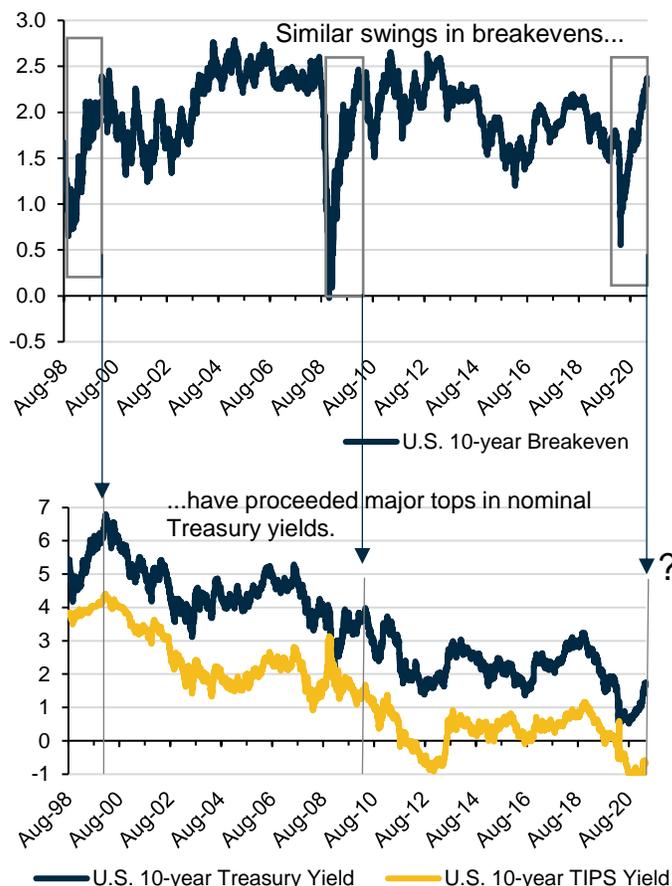
1. Beyond the next few quarters, inflation will remain contained, similar to the pre-COVID period;
2. Developed market central banks will keep money market rates low and conduct QE as needed in an effort to achieve their inflation targets

These assumptions tip our hand regarding the [longer-term economic outlook](#). Namely, once the current rounds of stimulus pass their peak impact, we expect the secular forces of high debt burdens and aging demographics to reassert themselves, consequently moderating growth—and even more important—leaving inflation below central bank targets.

## Key #1 to the Low-Rate Hypothesis: Contained Inflation

Inflation and inflation expectations are key to the bond market outlook for two reasons. First, looking at the inflation linked bond market, we can see that investors' inflation expectations directly impact nominal bond yields. In fact, the rise in market inflation expectations (or breakevens), which are roughly 40 bps higher than the average level of inflation of the past two decades, more than account for the rise in nominal Treasury yields over the past year. The observable shift in Figure 4 demonstrates how rising inflation expectations have historically affected bond performance (**spoiler alert**: they have tended to coincide with *peaks* in nominal rates and have frequently *signaled the start of bullish periods for bonds*).

Figure 4: Rather than the Onset of Bear Markets, Rising Breakevens Have Historically Signaled Oversold Rates and Overblown Inflation Concerns



Source: PGIM Fixed Income and Bloomberg as of April 2021

**Second, inflation is inexorably linked to central bank policy: if inflation remains below target, then the central bank is likely to keep the policy rate at the effective lower bound.**

## Key #2 to the Low-Rate Hypothesis: DM Central Bank Policy

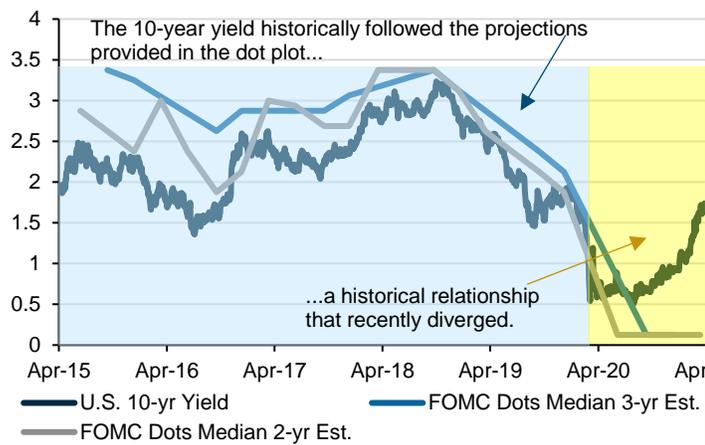
Central bank policy is critical because it anchors the front of the yield curve and increasingly guides expectations for the future path of the central bank's administered rate. If investors have any doubt about the influence of central bank forward guidance on long-term rates, Figure 5 shows the correspondence of the Fed's dot plot (which provides forward guidance in the form of FOMC participants' expected path for the funds rate) and the yield on the 10-year Treasury. **Never mind fiscal stimulus, inflation, or growth—the 10-year yield can be found right in line with the Fed's forward guidance.**

In the present heat of the COVID recovery, however, markets have diverged from the Fed's indicated path. Market-determined rates, such as the 10-year Treasury yield, have risen substantially, even though the Fed funds rate and most dots indicate expectations that

# Bond Market Outlook

the Fed Funds rate will remain at zero into 2023. In our view, this tug of war—the Fed’s dots at zero against the increase in market rates amid expectations that the Fed may pull up the front-end anchor—may continue for a few quarters. **But ultimately, as any above-inflation pressures likely diminish, rather than mushroom, and the pace of economic growth levels off, the Fed—and most DM central banks for that matter—will likely continue guiding policy rates on a very low track.**

**Figure 5: The Dot Plot Sets a Low Track for Long-Term Rates Going Forward**



Source: PGIM Fixed Income and Bloomberg as of April 2021.

**Bottom line, we expect the U.S. 10-year Treasury yield to remain below 2% as the expansion progresses this year before dropping back towards 1.25% or even 1% after economic momentum crests.** Furthermore, variations of this pattern seem likely to repeat across most DM markets, where long-term yields crest by mid-year, and then work their way back down to their starting levels of this year, which are substantially below current levels in some cases.

## Credit: The “Easy” Money is Behind Us, But Spread Product Will Likely Continue Contributing to Returns on the Margin as the Economy Expands

Although the increase in rates has been a drag on the bond market’s performance over the past year, the recovery in credit has provided a substantial boost to returns. At this point, spreads across many fixed income sectors have not only largely recovered, but have also tightened through their historical averages. While we generally expect spread product to continue outperforming—as outlined in the sector coverage that follows—the outlook is not without caveats. First, the relatively narrow level of spreads will likely diminish the pace and magnitude of further outperformance. **Additionally, narrower spreads leave little room for error and the uncertain course of the long-term economic recovery warrants a discerning approach to credit selection in order to avoid blow ups and hot spots.** Furthermore, as highlighted by the

recent collapse of an equity hedge fund, market fragility lurks near the surface, suggesting intermittent bouts of volatility even in periods of perceived calm.

## Currencies: Q1’s Strong Dollar to Give way as U.S. Rates Crest and Vaccine Rollouts Accelerate Globally

Currency moves have continued to follow the sub-plots of the COVID recovery. After Fed rate cuts spurred a risk-on, dollar-declining environment through the latter three quarters of 2020, [we previously highlighted](#) that most of the dollar’s decline was likely behind us and that the potential existed for the dollar to strengthen if and as the U.S. recovery gains momentum. **Here too, though, markets may be ready for a rotation: in Q2 the dollar could take a breather as the pace of vaccinations and growth outside of the U.S. accelerates.**

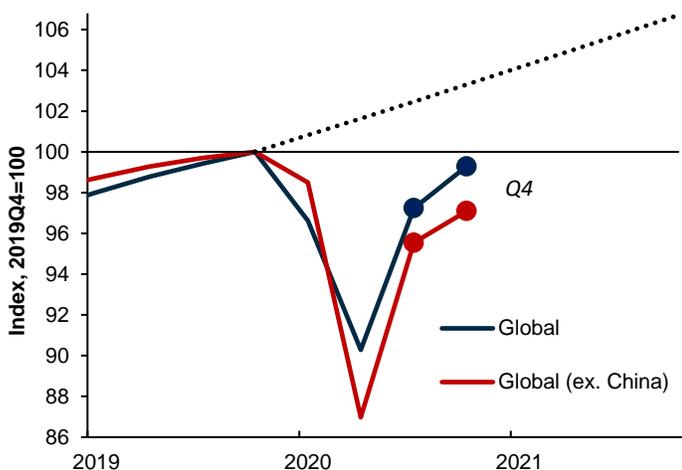
**Outlook:** In our view, the current bond market correction has taken rates above fair value. While this eventually should fuel “The Great Rotation” of return drivers from credit to duration, this may have to wait until growth and inflation fears crest. Meanwhile, the performance of credit—which has contributed mightily to returns over the past year—should continue, but at a more moderate pace. The dollar may be biased to rollover as U.S. rates peak. While uncomfortable at the time, intermittent bouts of volatility and high uncertainty should continue to create opportunities for adding value through active management.

## Global Recovery Now a Foregone Conclusion—But Will It Be Too Strong?

The pandemic and the associated lockdowns have brought unprecedented stresses on the global economy. Over the past year, we have endured a simultaneous collapse in aggregate supply and aggregate demand, significant labor market stresses, disruptions in financial markets, and qualitatively new types of macro risks and uncertainties.

**Notwithstanding the severity of these shocks, global GDP ended the year down by less than 1% (Figure 1).** If China's strong performance is excluded, the decline is closer to 3%, a sizable drop, but much smaller than seemed likely last spring and summer.

**Figure 1: Global Real GDP**



Source: PGIM Fixed Income and Haver Analytics

Bottom line, the global economy has proved itself remarkably resilient. Firms have successfully shifted operational aspects to the virtual world. Many workers have found ways to do their jobs remotely, while others—for whom remote work was not possible—have braved the pandemic and remained at their posts. The structure of consumption has also shifted.

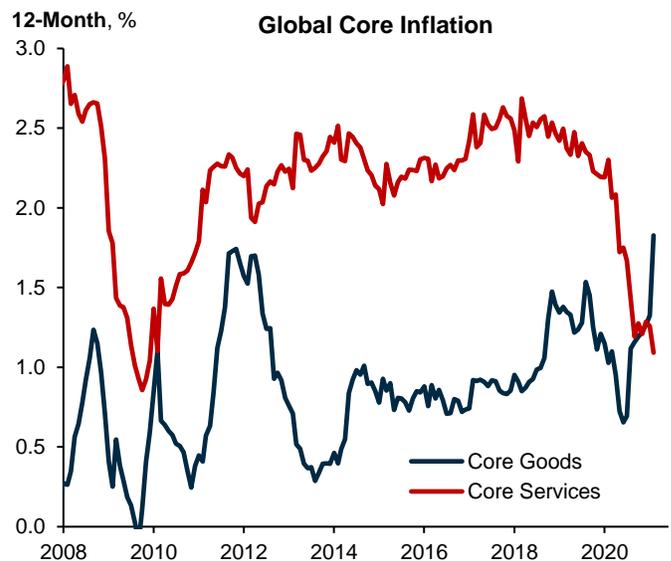
**Firms, workers, and consumers have been forced to act differently, and they have responded with resourcefulness and flexibility.** Some of the resulting shifts, such as the more effective deployment of virtual tools, are likely to be long lived. And it can be argued that the economy will be more productive as a result.

One critical shift in the economy has been a rebalancing toward the production and consumption of goods and away from services, especially services requiring sustained face-to-face contact. An implication of this is highlighted in Figure 2. **During the pandemic, global core goods inflation has surged to decade highs, while services inflation has moved to the lowest level since the**

**global financial crisis. How this divergence unwinds will be a key determinant of inflation over the next year or two.**

Even so, the performance of the services sector has varied somewhat across countries. Services PMIs, for example, point to a stronger rebound in the second half of last year in the United States than in the euro area and Japan. In these latter two economies, the PMIs remain just below 50, which point to slight, ongoing contractions. We interpret this divergence as reflecting the relatively mild public health restrictions in many parts of the United States. This easier approach no doubt has had public health consequences, but it has allowed services more scope to climb back from last spring's shock.

**Figure 2: Global Core Inflation and Services PMIs**



Source: PGIM Fixed Income and Haver Analytics

**Going forward, we see an exceptionally strong recovery set for the global economy. Propelled by vaccines, continuing macro stimulus, and a resurgent consumer, global GDP is poised to jump by more than 6% this year.** The United States, China, and India will lead this rebound, but growth in the euro area and the United Kingdom should gradually pick up as the year progresses. Latin America, in contrast, is expected to lag.

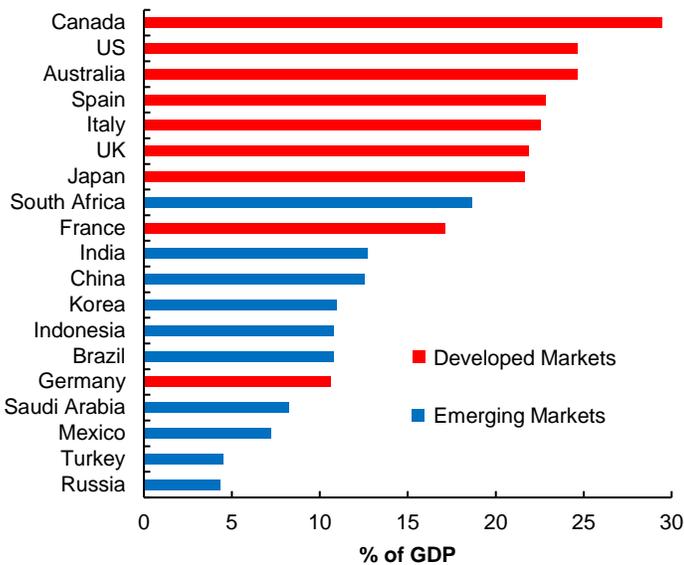
**The likelihood of a successful global vaccination campaign is a pillar of the outlook.** These efforts are now off and running. In the United States, for example, daily vaccinations have risen to over 3 million; about one-third of the population has received one dose and nearly 20% two doses. The pace in the UK is even faster than the United States. Both of these countries seem poised to reach measures of herd immunity sometime this summer. The European Union has lagged in its efforts to date, but we expect jobs there to accelerate in the months ahead. Many of the emerging markets, however, are facing more severe challenges with vaccine access and distribution. Even so, herd immunity in these countries should be reached by mid-2022. Of course, the emergence of a

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variant that is impervious to the vaccine remains a key risk to the global recovery.

Continuing fiscal and monetary stimulus is another factor that should drive the rebound. This stimulus provided critical support during the downturn, and policy is likely to remain accommodative. As shown in Figure 3, the fiscal support has been substantial and broadly disbursed across countries—both DM and EM. Although the higher debt levels that have resulted may pose challenges for policymakers in the years ahead, especially in EM, fiscal stimulus is likely to remain in place this year and continue to boost growth. Another concern is that Europe may turn too quickly to fiscal austerity once recovery there takes hold.

**Figure 3: Change in Public Debt: 2019-2021**

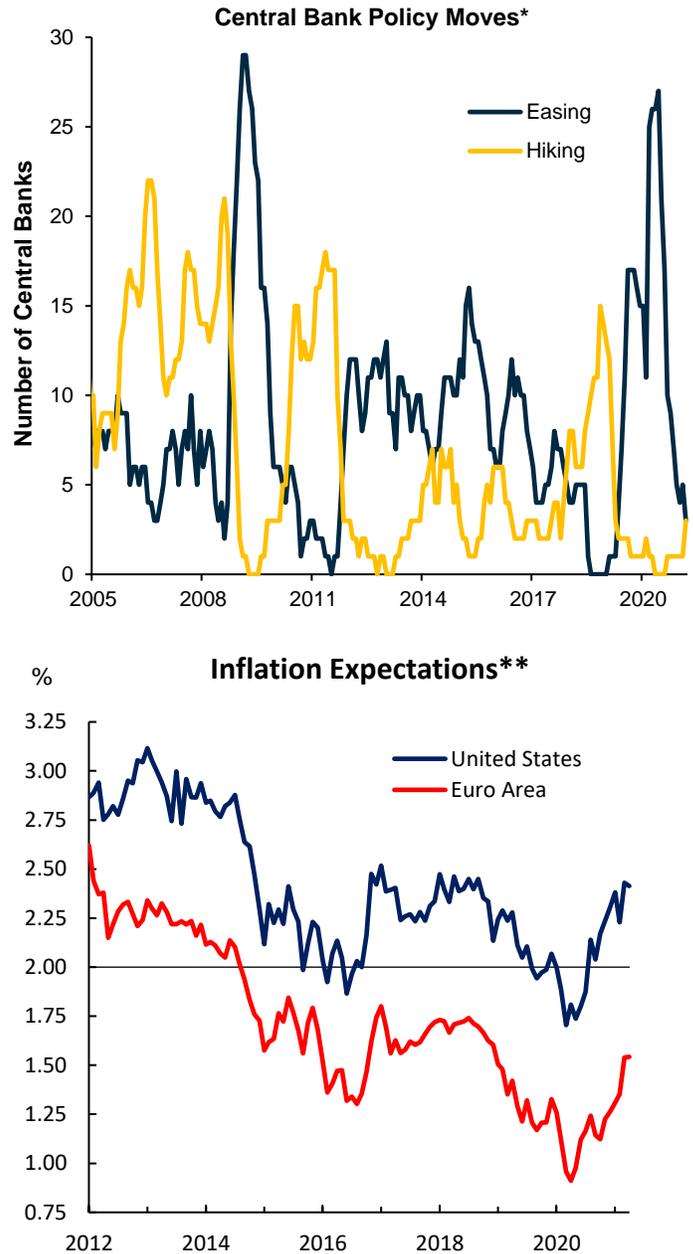


Source: PGIM Fixed Income and IMF (April 2021)

The story for monetary policy is broadly similar. The early days of the pandemic saw a flood of monetary stimulus (Figure 4). Across a panel of 30 major central banks, nearly all of them cut rates as the virus erupted.

**In DM, we expect that vigorous monetary support will continue as central banks fight to push inflation back toward their targets.** In line with this objective, the Fed seems to be getting some traction in its efforts to lift inflation expectations, which have now risen a bit above 2%, to levels that prevailed several years ago. The situation in the euro area, however, appears more acute. Inflation expectations have risen from their pandemic lows, but they remain well below the ECB’s target.

**Figure 4: Global Central Bank Policy Moves and Inflation Expectations**



Source: PGIM Fixed Income and Haver Analytics. \*Last 3-months; panel of 30 major central banks. \*\*5x5 inflation swaps.

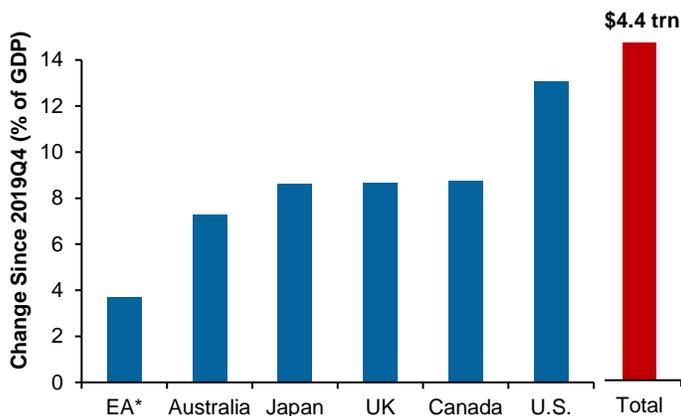
In EM, the outlook for further monetary stimulus is more nuanced. Policy is still broadly accommodative, but Turkey, Brazil, and Russia have recently hiked rates. And the PBOC is gradually tightening liquidity conditions. **It remains an open question as to how long the EM central banks will be able to keep their feet off the brakes in the face of a likely powerful global recovery.** The path of inflation in DM is likely to remain subdued—but that’s not as clear for the emerging markets. And markets may press for rates hikes to pre-empt such risks. **This raises the possibility of divergence between EM and DM central banks.**

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Another element of the outlook is that consumers around the world have significantly upped their saving over the past year due to several factors. First, faced with the pandemic's broad macro uncertainties, some households have reacted cautiously and cut their spending. Second, as a narrower matter, health risks from the virus have precluded expenditure on a whole range of services. As noted, some of this has been offset by increased goods purchases but, on net, spending is down. Third, some of the sizable fiscal stimulus has funded saving and balance sheet repair, rather than current consumption.

As one measure of this saving, Figure 5 shows the increase in households' cash holdings since the onset of the pandemic. These holdings have surged 12% of GDP in the United States and 6-8% of GDP in Canada, Japan, Australia, and the UK. In total, they amount to over \$4 trillion. The potential firepower is substantial. The Bank of England's Chief Economist recently noted that if UK households choose to spend even a fraction of those savings, it could drive a "rip roaring recovery." This is true for other countries as well.

**Figure 5: Household Cash Holdings (2020 Q4)**



Source: PGIM Fixed Income and Haver Analytics. Data through Q3 2020

Given the strength of these factors, **it's now a consensus view that the global economy will record a robust recovery as the year progresses. As such, the debate has shifted to two other issues—what are the risks for inflation and what are the prospects for growth in 2022?** The answers to these questions will shape macro performance and the trajectory of markets in the months ahead.

On inflation, we see two scenarios in which inflation could rise. First, as a vaccinated global economy shakes off the constraints of the pandemic, turbo-charged aggregate demand could temporarily run ahead of aggregate supply. Firms will need time to bring back workers, formulate production schedules, restart supply chains, and ramp up production. Under these circumstances, bottlenecks and shortages could push up inflation. However, over the course of a few quarters, supply should adjust—bringing supply and demand

back into balance and quashing any inflationary pressures. Fed Chairman Powell described exactly this scenario in his last press conference, and he suggested that the Fed is prepared to look through such moves in inflation.

Another, more troubling, inflationary scenario has been advanced by Larry Summers. Given the extraordinary support to aggregate demand, including unprecedented fiscal stimulus, Summers has argued that the economy risks a more sustained inflationary episode. This could occur under two circumstances. First, the upsurge in the economy this year could unlock animal spirits—including for investment—and kick off a more sustained rise in aggregate demand. Second, the temporary bottlenecks that we described could be sufficiently powerful that they push up longer-term inflation expectations. If the Fed was slow to respond to such a dynamic, expectations of higher inflation could become entrenched and self-affirming.

**We will continue to closely monitor inflation. But we believe that after a temporary boost this year, inflation will revert to low levels.** Many of the structural headwinds that weighed on growth and inflation in the years before the pandemic, including aging demographics and high debt levels, are still in place and, if anything, seem likely to be more pronounced. In this respect, **the performance of inflation following the pandemic is likely to resemble performance before the pandemic erupted.**

A second issue that is gradually emerging on the radar screens of market participants regards the strength of the economy in 2022. Once the exceptional fiscal stimulus begins to dissipate, households have drawn down pent-up saving, and the upfront surge associated with re-opening has played through, how much will the economy weaken?

**The concern here is not inflation and an overheating economy but, rather, a bumpier-than-anticipated landing next year. While our central forecast is for growth to continue to hum along, we see this as an important downside risk.**

In sum, given the stimulative forces afoot, a strong global recovery is essentially a foregone conclusion. The more salient questions focus on the variations across countries—in the pace of vaccinations, policy normalization, and (ultimately) real GDP growth. If anything, our concern is that the recovery may prove to be too strong and significantly overshoot sustainable levels of spending. **Over the medium term, we expect economic performance to revert to its pre-pandemic contours of restrained growth and subdued inflation.**

### Developed Market Rates

The first quarter was exceptionally volatile across developed market rates as yields backed up well beyond forward curve expectations. Global rates sold off in tandem—with the U.S. 10-year yield reaching the highest level in more than a year—as vaccination introductions paired with robust fiscal stimulus drove inflation expectations materially higher.

Although yields stabilized heading into quarter end, markets [remained focused on the Fed's SLR decision](#) given that the sunset raises the cost of holding Treasuries and reserves for the largest globally systemically important banks (GSIBs). One potential outcome is a structure similar to a Basel risk-based capital framework for the GSIBs. In terms of some short-term ramifications from the sunset of the SLR exemption, we expect long-term interest rate swap spreads to tighten amid the short-term headwinds for long-term nominal yields.

In the U.S., while we could see real rates push nominal Treasury yields higher from their current levels, we would scale into long positions in the nominal 10-year note between 1.75-2.00%. The fundamental value story centers around Treasury supply points. After several weak auctions, the seven-year portion of the Treasury curve now appears attractive. We also see value in the 20-year bond and view 10- and 30-year Treasuries as rich despite ample supply. The dislocation at the backend of the Treasury curve remains, and we expect some normalization as we move forward.

In Europe, rates ultimately followed the same trajectory as U.S. yields, but we're now seeing European risk premiums tick up. UK rates continue to aggressively price in inflation expectations, leaving UK inflation linked bonds appearing overly rich. We're maintaining steepeners (front end vs. the belly) in the UK and European nominal yield curves, with tactical positioning in 10-year UK real rates amid a general over estimation on the inflation front.

In aggregate, we believe that DM rates are ultimately poised to peak in Q2 and will likely end the year below consensus forecasts. For reference, consensus expectations at the end of Q1 called for 10-year Treasury, JGB, and Bund yields of 171 bps, 9 bps, and -18 bps, respectively, by year end.

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**Outlook:** Constructive as developed market curves generally appear poised to bull flatten amid potentially overly optimistic inflation expectations.

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### Agency MBS

Rising developed market rates and increased rate volatility weighed on the MBS market for much of Q1 as the sector posted +15 bps of excess returns vs. Treasuries.

In general, MBS valuations don't appear particularly attractive. However, in Q2 demand technicals will dictate performance vs.

rates. We expect buying will continue, while moderating gross origination amid higher mortgage rates and constrained housing inventory may keep spreads in a contained range. Fed buying remains front-and-center given its importance in absorbing mortgages' duration and negative convexity. Considering that the Fed's MBS portfolio swelled to a record \$2.174 trillion as of March 31st, ongoing reinvestment alone can have a significant effect on the market going forward.

The Fed will focus its purchase operations on the 30-year 2% and 2.5% coupons, reflecting the changing origination pattern at current mortgage rates. If primary rates increase by another 0.25%, we may even see the Fed add 30-year 3% to its purchases, which have not been on the schedule for several quarters.

The Fed will focus purchase operations on the 30-year 2% and 2.5% coupons, reflecting the changing origination pattern at current mortgage rates. If primary rates increase by another 1/4%, we may even see the Fed add 30-year 3% to its purchases, which have not been on the schedule for several quarters.

We do not expect adjustments to the Fed's MBS purchases until material progress is seen on the Fed's dual mandate and expect MBS purchases to remain at least until Q4. We expect any changes to the purchase program will be well telegraphed by the Fed.

In terms of the recent underperformance of Ginnie Maes amid concerns about cuts to mortgage insurance premiums, delinquent loan buyouts, and overseas selling, the newest Housing and Urban Development secretary said there are no immediate plans to reduce premiums at this time. Looking ahead, GNMA's may see improvement off of cheap valuations, a return to yield buying, and attractive OAS valuations.

In Q2, although production coupon rolls have cheapened, they continue to provide positive carry vs. intermediate Treasuries. We'll focus on the 30-year 2.5% coupon given the attractive carry and the likelihood that Fed purchases offset production. We may ultimately move further up in coupon if the refinanceable MBS universe moves further out of the money, as slower prepayment speeds potentially lie ahead. We remain constructive on specified pools as they provide better fundamental value relative to TBAs.

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**Outlook:** Neutral versus U.S. rates during Q2. We prefer other high-quality spread sectors over Agency MBS.

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## Securitized Credit

Sector	Subsector	Spread Change (bps)	LIBOR OAS
		Q1	3/31/21
<b>CMBS</b>			
CMBS: Conduit AAA	First-pay 10-year	-5	70
CMBS: Conduit BBB-	BBB-	-45	350
CMBS: CMBX (OTR)	AAA	-4	48
CMBS: CMBX (2012 vintage)	AA	+54	207
CMBS: Agency Multifamily	Senior	-11	19
<b>Non-Agency RMBS</b>			
Legacy	RPL Senior	-20	60
Legacy	'06/'07 Alt-A	-30	140
GSE Risk-Sharing	M2	30	230
<b>CLOs</b>			
CLO 2.0	AAA	-6	114
CLO 2.0	AA	5	165
CLO 2.0	BBB	5	335
<b>ABS</b>			
Unsecured Consumer Loan ABS	Seniors (One Main)	-20	70
Unsecured Consumer Loan ABS	Class B (One Main)	-50	90
Refi Private Student Loan	Seniors	-35	60
Credit Card ABS	AAA Credit Card	0	8

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The passage of another stimulus package, with funds directed towards households and the continuation of forbearance plans in housing, continues to minimize downside tail risk in the consumer ABS and RMBS markets. The strong rebound in economic growth is positive for all securitized assets. On the downside, a newly invigorated Consumer Financial Protection Bureau (CFPB) has already begun to assert its enforcement authority. As a result, downside risk exists for all consumer lenders, but particularly for firms that lend to near prime and subprime borrowers.

Despite recent spread softness, we continue to believe securitized products are situated to perform relatively well due to their meaningful spread advantage over other short-duration spread product and their relatively small exposure to changes in tax and regulatory policy.

**CMBS:** We believe CMBS spreads may continue to drift wider in early Q2, but the recent rate volatility has also kept borrowers on the sidelines, which should lower supply as the quarter progresses. Absent a bout of macro volatility from other spread markets, we believe a significant widening in AAA spreads is unlikely, and we would be buyers on notably wider spreads.

Delinquency rates for conduit CMBS remain fairly high. While retail and lodging grab the headlines, we remain increasingly concerned that the office sector may be more vulnerable than anticipated as

companies announce plans to expand flexible work arrangements and reduce their real estate footprint. We still see opportunities in better single asset/single borrower (SASB) seniors and mezzanine, even though many bonds have re-traced to pre-COVID levels. We remain wary of chasing conduit mezzanine issues given the greater structural leverage and commercial real estate uncertainty.

**Non-Agency RMBS:** Consistent with our longer-term expectation, millennial demand appears to be driving some of the increase in residential home prices, but we are also seeing homeownership rates across all age cohorts increase in recent months amid historically low mortgage rates. While the recent back-up in mortgage rates combined with the huge increase in home prices has caused affordability measures to drop, affordability remains high by historical standards and widespread foreclosure forbearance measures continue to provide an underpinning of support of the residential housing sector.

The extension of forbearance programs is positive as they reduce downside tail risk to the housing and mortgage markets. Mortgage underwriting also remains conservative.

The recent widening in Credit Risk Transfer (CRT) spreads presents a better entry point for both CRT and mortgage insurer CRT bonds. Legacy non-agency RMBS still trades somewhat wide to pre-COVID levels; however, this space is one of reducing liquidity and the asset class is generally losing value amid a mix of idiosyncratic downside risks (e.g., calls, trustee malfeasance, etc.), and ongoing structural complexity. We continue to find value in negotiated trades to finance mortgage originators and servicers.

We are constructive on UK RMBS at current levels, particularly second-pay, seasoned non-conforming, and new origination specialist paper from strong sponsors. We also find UK Significant Risk Transfer (SRT) opportunities attractive from issuers attempting to obtain regulatory/economic capital relief. UK mortgage fundamentals are expected to remain stable as government initiatives continue to aid obligors (e.g. Furlough Scheme) and provide support for the housing market (e.g. Stamp Duty Holiday). Additionally, granting of mortgage payment holidays by issuers has stabilized RMBS trust collateral performance.

**CLOs:** We believe CLO issuance will remain high through most of 2021 as a large number of open warehouses remain. Hence, spreads likely hit 2021 tightness in Q1 as outsized supply may stymie further tightening. We continue to believe that CLO AAAs remain risk remote given their subordination and structural protections. We also believe AA tranches remain reasonably loss remote. In general, we continue to favor AAA/AA CLOs with a slight bias towards European AAAs, given the relative attractiveness of spreads when accounting for the benefit of the 0% Euribor floor. We continue to keep a close eye on this relationship to determine relative value between the markets.

**ABS:** With many parts of the ABS market trading through pre-crisis levels in Q1, we are neutral/negative on the aggregate relative value of the asset class as spreads in many sectors have rallied

## Q2 2021 Sector Outlook

through fair value. We expect spreads to soften in the near term as dealers have recently been net sellers. Longer term, we expect ABS spreads to find support amid expectations for flat/negative net new issuance in 2021. We remain opportunistic sellers of certain ABS asset classes at current levels, including credit cards, prime auto, seasoned subprime auto, and floorplan seniors, where favorable relative value exists elsewhere. We are buyers of senior and subordinate classes of unsecured consumer loans originated through branch-based lenders, and we also favor select issuer subprime auto (new issue), refinanced private student loan subordinates, and non-U.S. ABS shelves, such as Canadian prime auto subordinates, and UK near-prime credit cards. Regulatory and economic capital credit risk transfer trades in ABS offer attractive return potential.

We generally view ABS fundamentals as favorable, but we are mindful of increased regulatory scrutiny of consumer credit originators and servicers under the current administration. The use of extension/forbearance by issuers, coupled with government stimulus programs last year, proved to be effective stabilizers of borrower performance in ABS trusts. Going into Q2, recently passed stimulus programs should provide immediate support for struggling consumer credit obligors, building a bridge to continued vaccine roll-out, economic reopening, and further improvement in unemployment. Structural protections remain robust for ABS trusts to counter any increase in losses.

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**Outlook:** Positive on high quality securitized products, although we anticipate further spread softness in early Q2. We are cautious of mezzanine risk in CLOs and conduit CMBS, but see value in subordinates of select Single Asset Single Borrower CMBS, ABS, and non-agency Credit Risk Transfer RMBS.

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### Investment Grade Corporate Bonds

	Total Return (%)	Spread Change (bps)	OAS (bps)
	Q1	Q1	3/31/2021
U.S. Corps.	-4.65	-5	91
European Corps	-0.68	-2	90

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Despite the disappointing returns posted by U.S. and European corporates in Q1, we hold a modestly positive view for IG corporates over the intermediate term amid assurances that the Fed and the ECB will remain accommodative, improved prospects for corporate earnings as economies re-open, accelerating vaccine distribution, and potentially overblown inflation concerns.

**U.S. Corporate Bonds:** Outside of the inflation scare, corporate fundamentals remain healthy across most industries and securities. Corporate liquidity is solid and profits and cashflows are improving as the economy revs up, particularly in the manufacturing, autos, housing, energy, and chemical sectors.

While input costs may rise, leverage is declining modestly as many BBB-rated issuers continue to reduce expenses and defer share buybacks in order to pay down debt. Actions by the credit rating agencies have turned positive, and there were no fallen angels in Q1. However, management confidence is growing and event risk from M&A and LBO activities may rise as the year progresses, although the Biden Administration is taking a closer look at such deals. Finally, higher-quality, A and AA-rated issuers may increase capital expenditures, debt-financed acquisitions, and share buybacks.

Technical remains solid on steady demand from U.S. and non-U.S. investors (given low currency hedging costs). While gross issuance entered Q2 at a higher-than-expected level of \$425 billion, net issuance declined about 20% from the same period in 2020.

Currently, we favor spread compression trades in select BBB-rated and off-the-run credits, as well as fallen angels and crossover issues with the potential for rating upgrades. We also favor cyclical sectors, such as autos, energy and chemicals, and are maintaining an overweight in pipelines as well as money center banks that are well capitalized and appear attractively valued. We remain defensive on A-rated industrials.

Overall, we believe spreads will remain in a tight range in Q2 with pockets of excess return. Headwinds include a resurgence of the virus, accelerating inflation that pushes rates higher, the potential for higher U.S. corporate tax rates and end of the filibuster under the new Administration, and emerging “bubbles” in the equity markets.

**European Corporate Bonds:** We maintain moderately long spread duration relative to the European corporate index and are overweight banks that we believe will benefit from full government support. We also favor “reverse-yankee” euro-denominated bonds from U.S. companies that are ineligible for ECB purchases. Many of these issues have come to market with healthy concessions and better pricing than the company’s USD holdings and EUR issuers of similar quality. We believe spreads will be reasonably range bound, but believe there is still room for spread compression within BBBs, which creates the potential for very moderate index tightening. In the coming months, vaccine distribution will remain key to market sentiment.

**Global Corporate Bonds:** In global corporate portfolios, we hold a fairly agnostic view of USD vs. Euro spreads as we believe there are still plenty of cross-currency opportunities. Portfolio risk is still at a reasonable level to benefit from the spread compression trade. We remain underweight euro-denominated ECB eligible paper rather than underweight all euro-denominated spreads. We still prefer reverse-yankee U.S. issues denominated in euros and hold a slight overweight in spread duration (long exposure to the euro and USD and short exposure to the yen, Swiss franc, etc.). We still favor U.S. money center banks, BBB-rated bonds, electric utilities denominated in USD, and taxable municipal bonds. We continue

## Q2 2021 Sector Outlook

to take advantage of price and yield dislocations between EUR and USD bonds of the same and/or similar issuers.

**Outlook:** Modestly positive in light of central bank support and the prospects for an economic recovery. Favor U.S. money center banks as well as select BBB-rated issues, cyclical credits, and fallen angels.

### Global Leveraged Finance

	Total Return (%)	Spread Change (bps)	OAS/DM (bps)
	Q1	Q1	3/31/2021
U.S. High Yield	0.90	-50	336
Euro High Yield	1.54	-44	321
U.S. Leveraged Loans	2.01	-37	449
Euro Leveraged Loans	2.08	-33	425

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**U.S. Leveraged Finance:** High yield bonds entered Q2 seemingly caught in a tug-of-war between higher growth and higher rates, which caused significant divergence in performance with lower-quality credits rising alongside equities and higher-quality names drifting lower with Treasury prices. Similarly, many of the higher-beta and COVID-impacted sectors that should benefit from strong growth and a further reopening of the economy outperformed to start Q2, and higher-quality, more defensive, rate-sensitive sectors lagged.

We remain constructive on U.S. high yield given the enormous monetary and fiscal responses to the pandemic. Although further lockdowns may suppress high yield spread compression over the near term, we continue to expect spreads to tighten over the medium term and our two-year outlook is constructive, with another 50 bps of tightening expected. Optimism around vaccines, an ongoing search for yield, a decline in defaults, and an anticipated increase in M&A activity that will benefit high yield issuers are among the factors that we expect to drive spread compression going forward. This optimism is tempered modestly by the remote tail risk of COVID mutation that sets back vaccination efforts, higher-than-expected inflation coupled with a commensurate rise in interest rates, and/or a materially higher U.S. tax regime on corporations and higher-income individuals.

In terms of positioning, we believe BB-rated bonds are attractive on a relative-value basis and are less susceptible to a second virus-related shutdown. We are currently underweight BBs, but we are selectively adding exposure. We are maintaining an overweight to the independent power producer, housing, and gaming sectors. Within energy, we are reducing our underweight to oil producers and maintaining an overweight to natural gas producers.

U.S. leveraged loans entered Q2 on a string of \$11.1 billion of inflows following nine straight quarterly outflows. Technicals should

remain key factors in the market as CLO creation and refinancings will remain robust in Q2. Meanwhile, inflows into loan mutual funds will likely continue as investors seek floating-rate assets to protect against rising interest rates. We currently favor the higher-quality BB segment of the market, which has not recovered in valuation as much as the higher-coupon B issuers, but recognize that higher-coupon B issuers could outperform on low volatility. We continue to see prevalent risks in the retail, airlines, energy, gaming & lodging, and leisure industries.

**European Leveraged Finance:** Following their strong recovery since Q2 2020, spreads remain at attractive levels versus historic norms and will, in our view, drive strong returns for investors with longer-term time horizons. Whilst the recovery from this unprecedented crisis will almost certainly hit speedbumps (making short-term market moves difficult to predict), we remain confident macroeconomic data will steadily improve as the major economies slowly re-open. Most of the short-term stress has been addressed through a combination of prudent cost and cash management by corporations and investor/state support. Despite the economic stress, we believe default rates will remain below 2.0% in high yield and below 3.0% for loans in 2021. We believe active management and strong credit selection can avoid deteriorating credit situations and harness attractive opportunities across the sectors.

In terms of positioning, we are currently broadly running above market-level risk, with investments weighted towards the best relative-value opportunities given the evolving backdrop. Ultimately, we think actively-managed credit selection will be a key differentiating factor between managers going forward.

**Outlook:** Constructive over the medium and long term. Spreads are at attractive levels and will drive strong returns for investors with longer-term time horizons. Over the near term, the market will likely remain volatile and difficult to predict. We believe actively managed credit selection will be a differentiating factor between managers.

### Emerging Markets Debt

	Total Return (%)	Spread / Yield Change (bps)	OAS (bps)/ Yield %
	Q1	Q1	3/31/2021
EM Hard Currency	-4.54	3	354
EM Local (hedged)	-3.65	0.78	4.99
EMFX	-2.57	1.24	2.80
EM Corps.	-0.80	-32	295

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The challenge for the EM complex through Q2 will be balancing the risks of rising or elevated DM interest rates with the likelihood of a slower EM growth outlook in 2022—our EM growth forecasts expect 7% in 2021 and 4.3% in 2022. Furthermore, once U.S. rates

## Q2 2021 Sector Outlook

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crest and the damage to EM is considered “oversold,” we believe fundamental relative value will dominate EM performance and will be shaped by three long-term themes: the ability of EM issuers with higher debt levels and impediments to structural reforms to handle the challenges under significantly tighter global financial conditions; the extent of the support from commodity prices; and the effects of China’s evolving dynamics. We believe that much of this backdrop will become clearer as the year progresses. And in order most effectively benefit from improved valuations within select EM sectors, we seek to balance the combination of risks based on their potential performances in different scenarios.

We also see a number of reasons why the sector may avoid a wholesale de-risking event similar to 2013’s taper tantrum or 2018’s selloff: 1. there has already been a large move in rates and the Fed has telegraphed its intentions, so the timing of taper or a Fed move shouldn’t be a surprise; 2. EM current account imbalances are in better standing than they were in 2013 and select EM central banks have already begun to move along with local yields—EM growth will slow after this year’s “rebound;” 3. while it remains unclear if we will see a meaningful uptick in EM sovereign defaults, our base case expects that defaults will be well telegraphed and any increase in the SDR allocation framework for the IMF could support funding to riskier EM countries.

Risks to our broad EM outlook include geopolitical events, which have growth and sentiment implications, slower growth or negative shock to growth, tighter global financial conditions, and idiosyncratic risks inspired by the political calendar/populist agenda.

**Hard Currency Spreads:** Mixed performance within EM sovereigns will likely continue. Although spreads have proven somewhat resilient, performance is quality- and country-specific. Our highest conviction within EM remains hard currency sovereigns and corporates, which we believe will continue to benefit from the expectation that, notwithstanding Treasury rate volatility, the Fed will remain on hold and developed market (DM) policy will broadly remain accommodative. A barbell of higher-quality, longer-dated sovereigns, and select quasi-sovereigns, which have limited issuance needs and can withstand the volatility of core rates, can outperform. The move in U.S. Treasury rates has already been significant, and while there could be more repricing, higher-quality spread curves are attractive, along with front-end, lower-rated sovereign issuers that have limited financing needs or have funding access from multi-laterals. Some higher-quality examples include select Gulf Cooperation Countries (GCC) and Central and Eastern Europe (CEE) issuers, along with high yield issuers such as Ukraine, Angola and the Ivory Coast.

EM Corporates held up relatively well in Q1, with valuation support from the segment’s lower duration and improving fundamentals. With 2021 default rate expectations of 2.5-3%, the outlook for the asset class remains favorable. We continue to favor the BB-rated space in 5-7 year maturities. The average BB spread of 350 bps provides a cushion from rate increases, and these credits should

remain insulated from fundamental deterioration, unlike B-rated frontier credits, during a slowdown. Gross supply has outpaced its 2021 expectations but net supply should remain manageable, leaving a favorable technical picture, driven by inflows. Risks to EM corporates include a slowdown in China, U.S. dollar strength, and Fed tightening.

**Local Rates:** We expect stabilization with some attractive opportunities at the front end of local curves. We believe a major selloff is behind us and rates will stabilize within a 10-20 bps range. Finally, attractive values have started to appear at the front end of yield curves in Russia, Mexico, Chile and Colombia, and we disagree with the market pricing for a majority of EM hiking cycles.

We look forward to covering our underweight in low yielders in Asia, along with some of the underweights in long end, high-yielding names, such as Brazil. China remains our highest conviction structural trade. We are maintaining our 3- to 5-year exposure in Mexico and Russia where we think market pricing looks extreme relative to the inflation trajectory through year end. We also favor modest overweight in 5-10 year part of Indonesia and South Africa where inflation remains below the central bank’s targets. Based on the offshore outflows this year and capitulation by local players, technicals could appear favorable once volatility in core rates eases. The sizable risk to our cautiously optimistic view of local rates—at current levels—is further pressure on EM currencies.

**EMFX:** Looking further into Q2, we expect mild U.S. dollar weakness for several reasons: 1. we don’t expect a significant rise in rates from current levels; 2. global vaccination administration is expected to pick up and converge with the U.S.; 3. global growth is expected to become more synchronized; 4. more EM central banks are either hiking rates or ending their dovish stance, which is a net positive for EM currencies in the context of improving global growth and a dovish Fed; and 5. there has been little-to-no contagion from negative idiosyncratic developments Brazil, Turkey, and Russia, leaving contagion risk at a minimum. Risks to our view include higher real interest rates, future developments in China, and more delays in economic re-openings.

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**Outlook:** Focused on bottom-up relative value across EM assets. Barbell positioning of EM sovereign and corporate risks should still offer value if financial conditions remain accommodative. EM local rates have repriced considerably, and, in a scenario of mild USD weakness, there is value in EMFX.

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### Municipal Bonds

	Total Return (%)
	Q1
High Grade	-0.35
High Yield	2.11
Long Taxable Munis	-4.79

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Bolstered by strong technicals, tax-exempt municipals outperformed Treasuries across the curve in Q1 driving the Municipal/Treasury ratios to 64% and 72% in 10 years and 30 years, respectively, over 10 ratios lower during the quarter. Taxable municipals also benefited from favorable technicals, resulting in the long taxable municipal index tightening by 33 bps, outperforming both the long corporate and long credit indices.

The second quarter started on a firm technical footing with gross supply of \$111 billion, a 16% increase year-over-year, including \$33 billion of taxable supply, which represents a 9.8% year-over-year increase. Meanwhile, municipal mutual fund flows totaled \$31.7 billion of net inflows as Q2 commenced.

Despite solid outperformance in Q1, and relatively rich valuations versus historical averages for the asset class, positive technicals should provide a supportive backdrop for tax-exempt municipals in Q2. Additionally, passage of the \$1.9 trillion American Rescue Plan is broadly supportive of municipal credits, with state and local governments set to receive \$350 billion. Rating agencies have recently changed their respective outlooks to stable from negative for a variety of municipal sectors, including state and local governments, airports, mass transit, toll roads, and higher education. We expect this trend to continue. Importantly, Moody's and S&P have both revised their rating outlooks for Illinois' Baa3/BBB- general obligation rating to stable from negative, removing the near-term possibility of the state losing its investment grade rating.

We expect lower-rated investment grade issues to continue outperforming higher-quality credits as investors seek additional yield. Any spread widening due to an uptick in supply or a continued back-up in Treasury rates should be viewed as a buying opportunity ahead of the typically strong June and July reinvestment period. While a sustained back-up in Treasury yields could lead to a mutual fund outflow cycle, investor liquidity appears adequate. High grade taxable municipals will also benefit from supportive technicals as the favorable credit backdrop should contribute to broader investor participation. We continue to believe that essential service revenue bond credits provide better insulation from downgrade risk than corporate bonds.

While months of negotiations will occur between the administration's infrastructure proposal and a final plan, key areas

of focus for the municipal market include the proposed increase in the corporate tax rate to 28%, which could make tax-exempt municipals more appealing to U.S. banks, to help fund the plan and headlines discussing the potential inclusion of a Build America Bond type program.

Unfunded pension liabilities and other post-employment benefit (OPEB) obligations remain the primary long-term credit concern for several states and localities.

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**Outlook:** Constructive based on expectations for supportive technicals through Q2.

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Source of data (unless otherwise noted): PGIM Fixed Income and Bloomberg as of April 2021.

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**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.

## Important Information

**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.

**U.S. Senior Secured Loans: Credit Suisse Leveraged Loan Index:** The Credit Suisse Leveraged Loan Index is a representative, unmanaged index of tradable, U.S. dollar denominated floating rate senior secured loans and is designed to mirror the investable universe of the U.S. dollar denominated leveraged loan market. The Index return does not reflect the impact of principal repayments in the current month.

**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. Copyright 2020, J.P. Morgan Chase & Co. All rights reserved.

**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.

**Commercial Mortgage-Backed Securities: Bloomberg Barclays CMBS: ERISA Eligible Index:** The index measures the performance of investment-grade commercial mortgage-backed securities, which are classes of securities that represent interests in pools of commercial mortgages. The index includes only CMBS that are Employee Retirement Income Security Act of 1974, which will deem ERISA eligible the certificates with the first priority of principal repayment, as long as certain conditions are met, including the requirement that the certificates be rated in one of the three highest rating categories by Fitch, Inc., Moody's Investors Services or Standard & Poor's.

**U.S. Aggregate Bond Index: Bloomberg Barclays U.S. Aggregate Bond Index:** The Bloomberg Barclays U.S. Aggregate Index covers the U.S.D-denominated, investment-grade, fixed-rate or step up, taxable bond market of SEC-registered securities and includes bonds from the Treasury, Government-Related, Corporate, MBS (agency fixed-rate and hybrid ARM passthroughs), ABS, and CMBS sectors. 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.

The S&P 500® is widely regarded as the best single gauge of large-cap U.S. equities. There is over U.S.D 9.9 trillion indexed or benchmarked to the index, with indexed assets comprising approximately U.S.D 3.4 trillion of this total. The index includes 500 leading companies and captures approximately 80% coverage of available market capitalization.

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