PGIM FIXED INCOME

QUARTERLY OUTLOOK

JANUARY 2019

More of Less

Notes from our Chief Investment Strategist

Embracing the Virtues of Lukewarm

Notes from our Chief Economist

FIXED INCOME OVERVIEW

Our first quarter 2019 outlook follows a period of heightened market volatility and notable developments in politics, monetary policy, and economics. Yet, as several of our portfolio managers note, amidst stable, more moderate global growth, the recent volatility may have opened a window of near-term opportunities. Still, lingering uncertainties could contribute to further stretches of turbulence ahead.

- When considering the conditions going forward in **"More of Less,"** **Robert Tipp, CFA, Chief Investment Strategist**, looks at the dynamics behind flagging investment returns and the recent uptick in volatility. With this combination likely to re-emerge and possibly unnerve investors throughout the year, Tipp also examines how investors might make the best of the situation.
- What are investors to make of the concerning signs of slowing global economic growth? In **"Embracing the Virtues of Lukewarm,"** **Nathan Sheets, PhD, Chief Economist and Head of Global Macroeconomic Research**, explains the observed step down in activity as a natural phenomenon as individual economies move to more sustainable growth rates. The fact that global growth has slowed and become less synchronized relative to a year ago is hardly surprising. The bigger surprise is how rapid growth had been.

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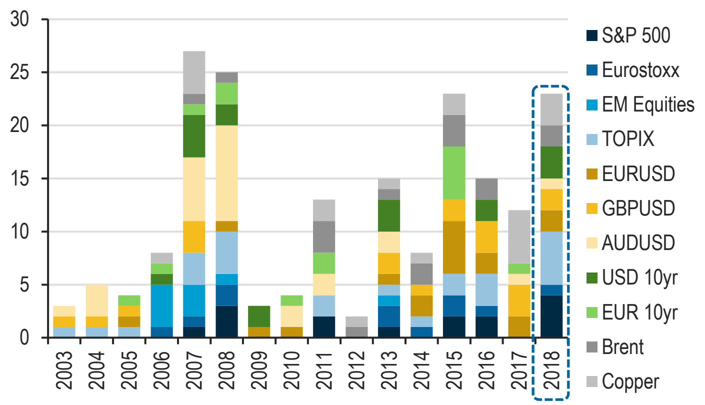
SECTOR VIEWS (CLICK TITLES TO VIEW)

More of Less

Last year was an inhospitable one for markets—most bond market returns were low or negative, and stock returns were negative as well. The only rising trend seems to be the level of market volatility, as observed in Figure 1.

FIGURE 1: 2018 BROUGHT A HISTORICALLY HIGH NUMBER OF THREE SIGMA MOVES ACROSS THE CAPITAL MARKETS.



Source: Morgan Stanley Research as of January 3, 2019. Note: sigma (σ) defined as one-day move relative to three-month implied volatility on the previous day.

In the end, the most solid performers of 2018 were arguably the defensive U.S. dollar and cash (see the accompanying table of returns).

Have we entered a period where unproductive, volatile markets will be the norm, or was 2018 a fluke? To get a handle on where we may be headed and what kind of investment strategies may provide the best results, let's first assess what's been driving the recent return patterns.

The Precarious Initial Condition: Low Yields, Low Spreads

In early 2018, the bond market suffered from a tough starting point: a combination of low government yields and tight credit spreads that left little room for error. Over the course of the year the bond market was buffeted alternately—and at times jointly—by rising government yields and widening spreads. Some of the initial spread widening could easily be chalked up to normalizing, i.e., in early 2018, spreads may have gotten ahead of fundamentals and were generally too tight. But investor anxiety soon rose, taking spreads wider across virtually all fixed income sectors as discussed in the following sector outlooks. As a result, for all but the most defensive bond market segments, total returns and excess returns relative to U.S. Treasuries were generally low or negative.

Sector Index	Index Total Return (%)				
	Q4 2018	2018	2017	2016	2015
3-Month LIBOR	0.63	2.23	1.22	0.7	0.3
U.S. Dollar	1.64	4.90	-7.85	3.2	8.4
Multi-Sector	**Q4 2018**	**2018**	**2017**	**2016**	**2015**
Yen Aggregate	1.32	0.93	0.18	3.0	1.1
Global Agg. Hedged	1.74	1.76	3.04	4.0	1.0
U.S. Aggregate	1.64	0.01	3.54	2.7	0.6
Euro Aggregate	0.87	0.41	0.68	3.3	1.0
Global Aggregate	1.20	-1.20	7.39	2.1	-3.2
Individual Sectors	**Q4 2018**	**2018**	**2017**	**2016**	**2015**
U.S. High Yield Bonds	-4.67	-2.26	7.48	17.5	-4.6
Municipal Bonds	1.69	1.28	5.45	0.3	3.3
U.S. Leveraged Loans	-3.08	1.14	4.09	9.9	-0.4
Mortgage-Backed (Agency)	2.08	0.99	2.47	1.7	1.5
U.S. Treasuries	2.57	0.86	2.31	1.0	0.8
CMBS	1.72	0.78	3.35	3.3	1.0
European Leveraged Loans	-0.90	1.25	3.72	7.0	3.6
European IG Corporate	-0.62	-1.25	2.41	4.7	-0.6
U.S. IG Corporate Bonds	-0.18	-2.51	6.42	6.1	-0.7
European High Yield Bonds	-3.55	-3.35	6.79	10.8	1.3
U.S. Long IG Corporates	-0.18	-7.24	12.09	11.0	-4.6
Long U.S. Treasuries	4.19	-1.84	8.53	1.3	-1.2
EM Local (Hedged)	2.32	0.75	3.68	4.7	-2.2
EM Debt Hard Currency	-1.26	-4.26	10.26	10.2	1.2
EM Currencies	1.20	-3.33	11.54	3.5	-7.6

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 (Merrill Lynch), Senior Secured Loans (Credit Suisse). Performance is for representative indices as of December 31, 2018. An investment cannot be made directly in an index. U.S. dollar as represented by the total return on the Bloomberg Dollar Index.*

As Peak Growth Passed, Politicians Kicked the Markets

The global economy moderated in 2018 (see the following economics section). From a perspective beyond a single year, the world is aging, and debt levels are high. Productivity has been low. But central banks have been keen to foster growth, and perhaps there were hopes that globalization, better policy, etc., could keep economic results on sound-enough footing.

While growth prospects were looking up a year ago, in hindsight, it appears that the clock had already run out of time for old-school politicians. The unimpressive economic performance of recent years—along with its uneven distribution—ushered in a new dynamic of heightened voter dissatisfaction, bringing politicians to the fore that are increasingly chipping away at policy orthodoxy and taking nationalistic stances rather than those in favor of geopolitically stabilizing alliances, free trade, and labor mobility. **Rising risk premiums in the fixed income and equity markets suggest that investors fear that this tilt away from global policy coordination and towards unorthodoxy is likely to result in less predictable, if not sub-par, economic results.**

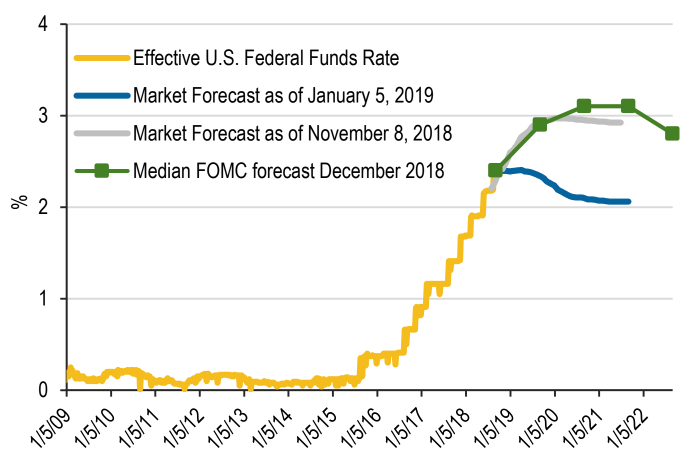
While Monetary Policy Officials Turned Off the Spigots

Against that backdrop of decelerating economic activity, rising global frictions, creeping policy unorthodoxy, and the resulting waning business confidence, central banks have continued to adjust policy away from accommodation. The Fed has led the punch-bowl snatching with its balance sheet roll off and a series of rate hikes; the ECB has ended its bond purchase program; and the BoJ continues to reduce its bond purchases after widening the target range on the 10-year JGB yield. Other central banks, e.g. the Banks of Canada and England, have hiked rates as well.

Who Hired That Guy?

President Trump has lambasted the Fed for raising rates, and investors appear to have taken a similar view, pricing in Fed funds rate cuts rather than hikes as 2019 proceeds. In doing so, investors more or less headed for the hills as government bonds rallied, spreads widened, and equities continued to slouch. Why?

FIGURE 1: TRUMP HAS LAMBASTED THE FED FOR RAISING RATES, AND INVESTORS APPEAR TO HAVE A SIMILAR VIEW, PRICING IN FED FUNDS RATE CUTS RATHER THAN HIKES.



Source: Minack Advisors as of December 31, 2018

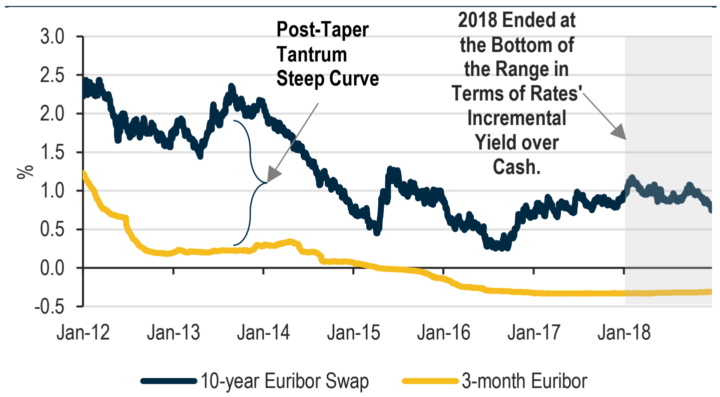
Effectively, markets are concerned that conditions are too tight. In a world of slack growth, less supportive central banks, and more policy uncertainty, investors are wondering where corporations will find additional earnings growth. Will growth be strong enough to support corporate, structured product, and sovereign credit quality? And away from those general trends, idiosyncratic geopolitical risks, such as Brexit and instability in the Middle East, are looming with no respite on the horizon.

Relative to higher cash yields, investors are not sure it's worth the risk. So, they've repriced fixed income risk product and equities in light of these concerns.

2019 Markets: Unnerving, But Productive?

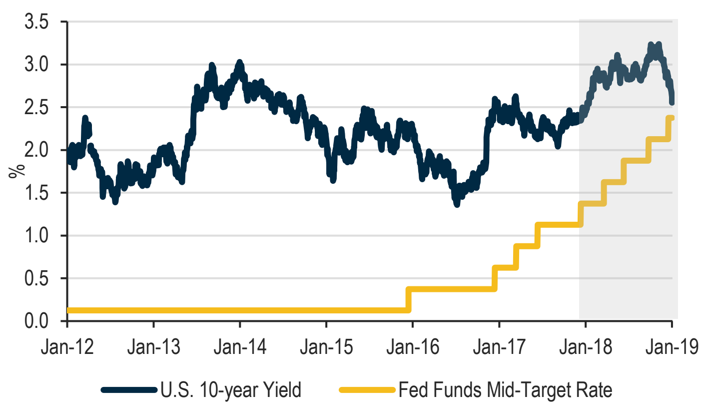
So big picture, what can we expect from the markets in 2019? A bit of a mixed bag. On the negative side, 2019 suffers slightly from the "low-yield level" problem that existed at the beginning of 2018. While we expect government yields to generally remain low and range bound (for additional detail, see Lower Range to Drive Stealth Bull Market in Bonds), we are not at particularly attractive points in the range as 2019 begins. Furthermore, in many markets (notably the U.S.), long-term yields don't offer that much of an advantage relative to cash. **As a result, while we expect government bonds to generally outperform cash over the long run, that outperformance is likely to be both less substantial, and less consistent, than it has been in recent decades.**

FIGURE 2: IN CONTRAST TO LATE 2013 AFTER THE TAPER TANTRUM, EUROPEAN YIELDS ARE LOWER, PROVIDING LESS INCREMENTAL YIELD OVER CASH AND LESS MARGIN FOR ERROR WHEN EXTENDING DURATION.



Source: Bloomberg as of January 4, 2019

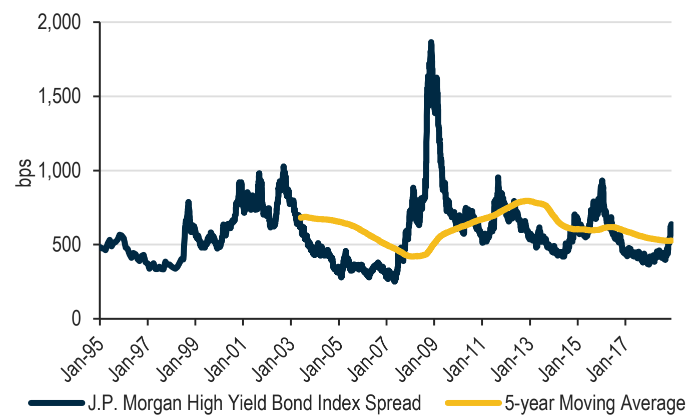
FIGURE 3: IT IS EVEN MORE SO IN THE U.S.—COMPARED TO THE END OF 2013, THE 10-YEAR YIELD IS NOT THAT MUCH ABOVE THE FED FUNDS RATE, LEAVING LITTLE INCREMENTAL CARRY. AS A RESULT, FOR INVESTORS TO BE VERY POSITIVE ON U.S. DURATION, THEY NEED TO THINK THE PEAK IN THE FED FUNDS RATE IS NEAR AND/OR BELIEVE THAT LONG RATES WILL REMAIN IN THE LOWER 2/3RDS OF THEIR RANGE OF RECENT YEARS, E.G., BELOW SAY 2.75%.



Source: Bloomberg as of January 4, 2019

While incremental yields on the so-called spread sectors are significantly wider than at the start of 2018, they are not particularly wide from a historical perspective. So, while they may be more than adequate to compensate for credit risk in many cases, premiums may remain relatively wide and potentially volatile given investors' perceptions about the late stage of the expansion and the array of risks that have been outlined in this outlook thus far**. In sum, spread sectors are likely to outperform, but not likely by historically wide margins and not without a fair amount of volatility. As a counterbalance, the markets' high volatility may continue to offer above average opportunities for adding value through sector allocation and issuer selection.**

FIGURE 4: HIGH YIELD SPREADS REMAIN WIDER THAN RECENT AVERAGES AND THE LEVELS FROM THE START OF 2018, BUT ARE NOT PARTICULARLY WIDE FROM A LONGER-TERM PERSPECTIVE.



Source: Bloomberg as of January 4, 2019

Dollar: Last Hurrah or Ongoing Bull Market?

A final note for the U.S. dollar. Despite the types of stress that would normally support the dollar, we see cause for caution. Factors that've likely boosted the dollar in recent years—such as fiscal stimulus, steady Fed rate hikes, tightening liquidity conditions via balance sheet roll off, and repatriation driven by the tax changes—may all have passed their peak force in 2018. **This may clear the way for the dollar to resume its long-term secular decline versus other major developed currencies. Additionally, a loss of upward dollar momentum could clear the way for emerging market currency outperformance by virtue of higher carry opportunities.**

The Bottom Line: Markets face challenges in 2019 that are similar to those in 2018. However, elevated risk premiums are likely to drive better performance, while market volatility may offer above average opportunities for adding value through sector allocation, issuer selection, as well as yield curve and foreign exchange positioning.

Embracing the Virtues of "Lukewarm"

In the face of escalating financial market volatility and trade tensions, the global expansion moderated over the past year from "very strong" to just "solid." While perhaps disappointing relative to robust expectations a year ago, the current pace of growth, if sustained, would hardly be distressing for the global economy.

More specifically, aggregate real GDP growth, measured on a quarter-to-quarter annualized basis (the black line in the top panel of Figure 1), has declined from 4.25% in mid-2017 to a bit below 3.50% more recently. Over the same period, global growth on a four-quarter basis (the yellow line) has softened from 4.00% to 3.75%, nearly identical to its average since 2000.

In tandem, purchasing managers indexes (PMIs) have eased, but generally point to continued growth. For the advanced economies, these indexes remain comfortably in expansionary territory. For the emerging markets, the manufacturing PMI is perched just above the 50 breakpoint, but the services PMI has recently rebounded. That said, the December reading on China's manufacturing PMI moved below 50, upsetting markets and highlighting the prevailing uncertainties. Global trade growth (the lower panel of Figure 1) has slowed, but trade continues to expand.

FIGURE 1: REAL GLOBAL GDP GROWTH AND GLOBAL EXPORT VOLUMES

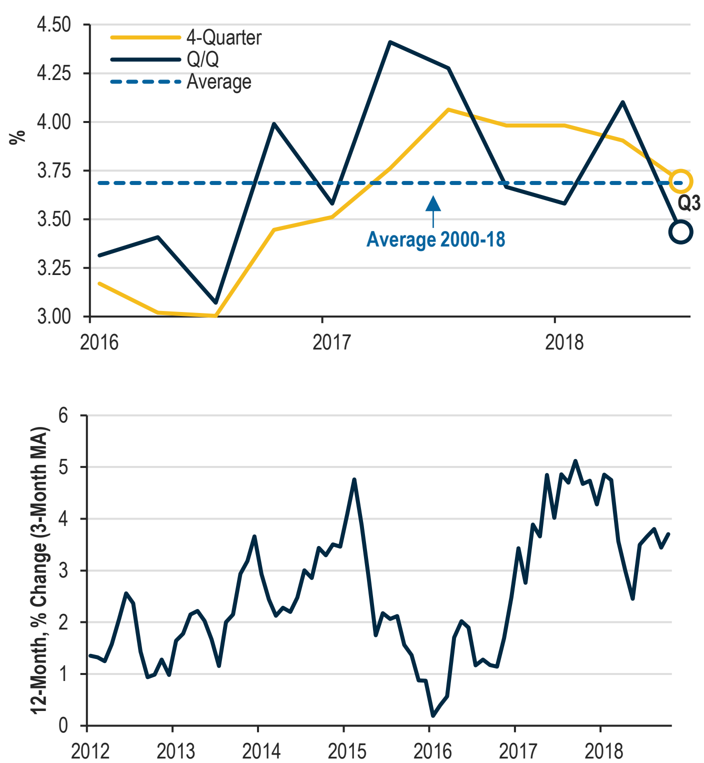
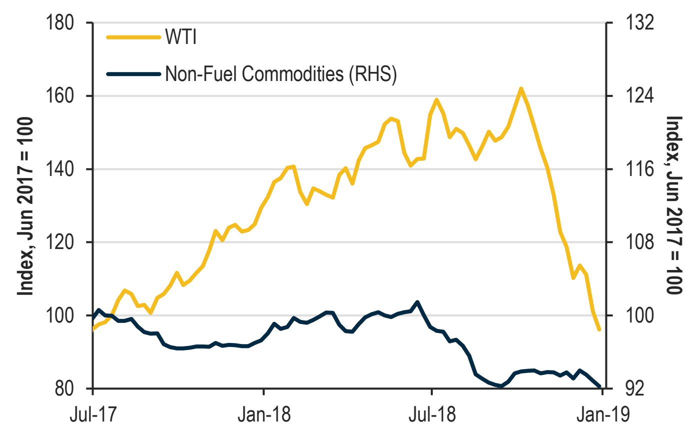


Figure 1 source: Haver Analytics as of December 2018

In addition, divergences across countries have become more pronounced. While the U.S. economy has sailed along well above trend, several emerging markets economies have faced severe challenges (e.g., Argentina and Turkey), and the performance of other countries has run somewhere in between.

With the global economy moderating, financial markets have become increasingly volatile, worried that the long-lived expansion is now on its final legs. As shown in Figure 2, non-fuel commodities prices retreated through the summer, and oil prices declined sharply during Q4. These moves reflect a range of factors on both the supply side and the demand side of these markets, but slowing global growth and softening sentiment regarding the outlook are playing a role. Global equity prices have been battered over the past few months for essentially the same reasons.

FIGURE 2: COMMODITIES INDEX PERFORMANCE



Source: Haver Analytics as of December 2018

A key question going forward is whether our forecast should extrapolate the levels or the recent changes in key indicators? Most important, has global growth now stepped down on a sustained basis to 3.50%, or is it likely to remain on a softening trajectory? A stabilization of growth near current levels would, as noted above, suggest growth a bit lower than the average since 2000—not great, but clearly good enough to support solid market performance. A further slowing would be more concerning.

Our view is that global growth is likely to stabilize around current rates in 2019. We see the observed step down in activity largely as a natural phenomenon as individual economies move to more sustainable growth rates. The fact that global growth has slowed and become less synchronized relative to a year ago is hardly surprising. **The bigger surprise is how rapid growth had been. As such, we see the current slowdown as a return to business as usual, rather than signaling the onset of a malignant set of factors.**

Our judgment on this point hinges on a view that the core of the global economy—the U.S., euro area, Japan, and China—is poised to perform solidly in the year ahead. For the U.S., the continued strength of the labor market and the consumer sector, coupled with further fiscal stimulus, is likely to keep the pace of expansion somewhat above trend. In the euro area, growth should remain above potential, supported by still-accommodative ECB policy and solid domestic demand. The quarterly pattern of Japan's GDP was uneven in 2018, but cutting through this variation, we see continued near-trend growth. Unemployment is low, the labor force participation rate is rising, and we expect the BoJ to keep extraordinary stimulus in place. But the greatest uncertainties surround the outlook for China. The data indicate that activity there decelerated through 2018, reflecting headwinds from the financial "derisking" campaign and trade tensions. In response, the authorities have moved to stimulate the economy, but these efforts have not yet gained much traction. We expect the authorities to implement further stimulus measures in 2019, with a risk that they will ultimately revert to old-style stimulus, including massive infrastructure spending and rising credit and leverage.

All of this said, we also emphasize that the risks to our projections are skewed to the downside. First, we worry about the possibility of a renewed trade war between the U.S. and China. The two sides are now negotiating, but it's difficult to project with any confidence how the situation will ultimately evolve. Second, as a related matter, we expect the Chinese authorities to unleash more powerful forms of stimulus. But such action has come more slowly than anticipated. We therefore must recognize the possibility that such stimulus is either not in the offing or that it will prove ineffective. Both of these possibilities would require President Xi to accept a further slowing in the economy. Third, monetary policy in the advanced economies is expected to move only gradually toward normalization. But normalization measures already in place, particularly the Fed's rate hikes, may prove more severe than expected. Alternatively, central banks—with their eyes fixed on normalization—may fail to respond promptly to a slowing economy and, thus, allow recessionary pressures to take hold. Fourth, we continue to closely track the travails of Brexit, especially with the March 29 deadline fast approaching and the negotiations showing few signs of resolution. Finally, if the intense volatility in financial markets continues, including further asset price declines, this could bite into sentiment, compromise balance sheets, and ultimately threaten business and consumer spending.

The upshot is that we find reasons for both comfort and concern in the current outlook. We are fairly sanguine about the baseline forecast, but we are also watching closely lest the risks materialize. With this in mind, the remainder of this essay discusses prospects for the major economies in more detail.

United States

Despite financial market volatility and concerns about U.S.-China trade tensions, economic growth continued largely as expected, tracking at a strong, 2.5%-3.0% pace for Q4 2018 and 2.9% for 2018 as a whole. Consumer spending remains the main engine of growth, with household purchasing power boosted by tax cuts earlier in 2018 and, more recently, by a drop in gasoline prices just ahead of what turned out to be a strong holiday shopping season. Companies are still hiring at a strong pace, while real wage growth has been inching higher. Business investment, however, slowed to a low single-digit growth rate, following a robust 10% pace in the first half of 2018, and existing home sales weakened during the year. Recent inflation trends appear to have also softened.

Going forward, we expect real U.S. GDP growth of around 2.5% in 2019–down just a bit from 2018—as last year's fiscal stimulus provides a further lift. Intensified trade tensions and the recent tightening of financial conditions pose downside risks to our growth outlook, although lower energy costs and the recent softening of mortgage rates should provide a modest cushioning for households. The partial government shutdown is unlikely to have any lasting effects on growth or sentiment.

After a series of quarterly rate hikes, the Fed signaled in December that it expects to be less aggressive going forward, cutting its median projection from three additional hikes in 2019 to just two. The current Fed funds target, at 2.25%-2.50%, is now effectively at the lower end of the 2.50%-3.50% range of Fed estimates for the long-run neutral rate, explaining the Fed's desire to become more data-dependent going forward. As a base case, we still expect the Fed will follow up with two more hikes 2019, but with the risks now skewed toward fewer hikes. We anticipate the Fed will likely need to address the "auto-pilot" nature of its balance sheet reduction in the upcoming year, confronting the question of just how much more liquidity it should drain from the financial system.

Euro Area

Growth in the euro area is set to exceed potential for the sixth consecutive year in 2019, although momentum continues to slow. A further deceleration is likely to result from domestic bottlenecks as the recovery moves into a later stage, uncertainties whether the European policy framework may again be tested, and external headwinds, particularly from trade policy tensions. Against this backdrop, we lowered our 2019 growth forecast to a below-consensus rate of 1.6%.

Domestic demand growth is holding up well but is easing. As the euro-area unemployment rate approaches a two-decade low, employment growth has been naturally slowing—and with it private consumption. Although capacity constraints remain pronounced, a sharp decline in new orders is likely to loosen these constraints and curtail investment demand.

The European Central Bank (ECB) halted its asset purchases in December. However, any further withdrawal of monetary policy accommodation will undoubtedly be gradual, with forward guidance continuing to affirm that the deposit rate will remain at -40 bps at least through the summer of 2019, allowing President Draghi to initiate the process of interest-rate normalization before his term expires in October 2019. A decision on a potential successor instrument for the Targeted LTROs is also on the horizon.

The European Commission begrudgingly refrained from opening the excessive deficit procedure for Italy after the authorities agreed to cut their 2019 fiscal deficit target to 2.0% of GDP from 2.4% of GDP previously. Envisaged expenditure cuts combined with a reduction in the projected real growth rate to 1.0% allows the structural fiscal deficit to stabilize at 1.8% of GDP. However, the quality of these measures may fall short, and growth may underperform the revised forecast. Thus, fiscal overruns seem likely. The Commission is aware of these risks, but felt it had little maneuvering room amid France's fiscal easing to calm protests.

Japan

Overall, Japan's real economy grew close to 1.0% in 2018, roughly at full potential, but the pace has also been quite volatile from quarter-to-quarter due to weather and natural disasters. Our forecast is for a similar story this year: 1.0% growth in 2019 and continued quarterly volatility given the recent tightening of global financial conditions, increased uncertainty over global trade, and Japan's consumption tax hike slated to take effect in October 2019.

Quarterly volatility aside, consumer spending has been growing at only a modest pace. Ongoing strong employment gains have been tempered by softening real wage growth. Since mid-2018, business investment has weakened considerably against the backdrop of softer global trade growth, a weakening global tech cycle, and a waning pace of investment as the 2020 Olympics near. Looking ahead to 2019, Japan's exports may get a lift from new trade deals, including a bilateral deal with the EU nearing completion, a deal among Pacific nations (the successor to TPP), and current trade talks with the U.S. A fiscal stimulus package is also slated for 2019 to blunt the impact of October's consumption tax hike.

The BoJ's 2% inflation goal remains elusive, hardly a novel occurrence across the DM economies. Japan's headline CPI slowed to 0.9% year-over-year in November, but ex-food and energy, it was near zero at 0.1%. The BoJ has been signaling its intention to keep current policy steady amidst recent financial market volatility and despite the persistent inflation undershoot.

China

Apart from the tensions with the U.S. on trade and technology, China faces a raft of more home-grown challenges. While on-track to register growth roughly in line with official targets, economic activity has steadily weakened. To date, growth has been supported by strong exports (especially to the U.S. as firms have sought to front run additional tariffs), property sector strength, and sustained profitability in the SOE sector. There is some concern that these supportive factors are now waning and, at the same time, that other policy efforts have not yet delivered major dividends. The weaker effective policy stimulus reflects the authorities' desire to eschew another large run-up in debt and instead focus on potentially supply-friendly reforms and cuts in taxes and social contributions, as well as opening up the bond market to foreign investors. However, given an environment of heightened global uncertainty, there is scant evidence that the recipients of such tax cuts have raised spending. If economic activity were to continue to lag expectations and targets, 2019 may eventually see more traditional debt-financed and investment-focused stimulus. While supportive of growth in the near term, strong traditional investment-centric stimulus would nevertheless increase China's already bloated stock of debt and potentially contribute to a further erosion of the country's current account surplus.

Emerging Markets

Emerging markets entered 2019 at varying stages of economic and political cycles. Some major countries—such as Mexico and Brazil—have sworn in new and untested governments. Early choices by these administrations suggest an increased likelihood of divergent narratives. On the one hand, recent developments in Mexico—most prominently, the government's decision to cancel Mexico City's new airport—have triggered increased market skepticism regarding the populist administration of Andrés Manuel López-Obrador (AMLO). On the other hand, President Bolsonaro has sent encouraging signals regarding his readiness to address Brazil's macroeconomic vulnerabilities; yet, questions linger as to whether the political backdrop will be supportive of these reforms.

Other countries—including Argentina, India, Indonesia, Poland, South Africa, and Thailand—are approaching elections that may dictate the direction of economic policy. For instance, the continuity of macroeconomic adjustment under the IMF program will be on the line in Argentina; elections in India will be a vote on PM Modi's reforms; while in Indonesia, a fiscal rule and other institutional constraints should help limit any fallout from the elections.

In any event, emerging markets are likely to continue to face a challenging global environment. Besides tighter liquidity conditions and lower oil prices, geopolitical tensions are poised to continue, while the outlook for global trade remains uncertain. The agreement on NAFTA 2.0 is a positive development, although there are risks to its ratification by the three countries' legislatures. Nevertheless, as a sign of mature policymaking, many countries have not abandoned prudent policies, often with the help of the IMF (Argentina, Ukraine, and Mongolia) or thanks to strong orthodox institutions (Mexico, South Africa, and Russia). The outlook for Turkey is something of wildcard—the economy is slowing significantly, and a fiscal boost cannot be ruled out.

All in all, EM growth (excluding China) is projected to be a tad below 4% this year, essentially unchanged from 2018. Argentina and Turkey are the only countries expected to contract, while growth is projected to remain strong among Asian EMs, especially in India and Indonesia.

Developed Market Rates

The fourth quarter represented a major shift in market sentiment across global asset classes. Interest rates peaked in early October and aggressively rallied as Brexit worries, fears of escalating trade war, weaker economic data, and a hawkish Fed punished risk assets, sending developed market interest rates to yearly lows. As the quarter concluded, the yield on 10-year Bunds and JGBs plummeted to depths not seen in years, while the 10-year Treasury yield ended just above its lows from early in 2018. Additionally, after beginning the quarter higher, the yield on Italy's 10-year BTP declined below 3% for the first time since September 2018 as Italy slowly moved its 2019 budget target closer to the European Commission's suggestion.

With signs of slowing global growth, Q4 also brought the potential for further headwinds as Democrats won control of the U.S. House of Representatives—thus mitigating the probability of further fiscal stimulus as a "fiscal cliff" approaches in 2020—and trade tensions with China intensified. Against this macro backdrop, Fed Chairman Powell and Vice Chairman Clarida struck a more balanced tone prior to December's FOMC meeting. In addition to the expected 25 bps hike in the nominal Fed funds target range, the FOMC decreased its median projection for additional hikes going forward by 25 bps. **Our base case for two rate hikes in 2019 is more in line with the Fed's new projections, but we think there are downside risks at this point and anticipate that the autopilot roll off of the Fed's balance sheet will likely need to be revisited at some point in the upcoming year.**

Heading into Q4, we slightly widened our near-term trading range on the 10-year Treasury yield to 2.75-3.25%, and the 10-year yield reached 3.24% in the days following the U.S. midterm elections before rallying to 2.68% at year end. **Looking ahead, we see a potential 10-year trading range of 2.50-3.125% in Q1 with yields possibly moving toward the middle of that range amid a stable inflation backdrop, moderate economic outlook, and continued significant Treasury issuance.** Factors supporting a move toward the lower end of the range could be renewed softening in inflation (due in part to weak commodity prices), moderating U.S. economic growth as fiscal stimulus begins to fade, and increased global demand for Treasuries given their relatively high levels. We also anticipate further flattening in the 10/30s nominal curve and believe that TIPS are poised to outperform.

Elsewhere in the U.S., two-year, 10-year, and 30-year swaps tightened in Q4 by 2 bps, 3 bps, and 7 bps, respectively. **We continue to believe that Treasuries will grind richer vs. OIS derivatives (wider swap spreads) in Q1.**

In Europe, we expected segments of the Bunds curve to flatten in Q4, and the 2/30 curve flattened by 10 bps during the quarter. **After rallying into year end, our forecasted trading range of 12.5-50 bps on the 10-year Bund yield in Q1 2019 is slightly above recent levels, and we expect the 2- to 5-year portion of the Bund curve to underperform. We also remain underweight Bunds relative to interest rate derivatives.**

While the Brexit situation remains highly fluid, we believe any signs of a resolution could result in the bear flattening of the Gilts curve. Some associated impacts could be the underperformance of Gilts (vs. SONIA and LIBOR) and the underperformance of UK inflation-linked bonds.

In Q4, the 10-year JGB traded in a range of 3.5-16 bps, just inside of our projections of 5-20 bps. **We expect 10-year JGBs to continue to trade in a relatively narrow range and expect underperformance of the 2- to 7-year portion of the JGB curve, particularly vs. the 20-year segment.**

Outlook: After developed market rates rallied sharply on signs of slowing global growth and moderating monetary policy expectations, we're maintaining tactical positioning across the sector given our projected Q1 trading ranges for 10-year Treasury, Bund, and JGB yields.

Agency MBS

MBS spreads widened in Q4 amid the broad risk-off sentiment and the higher net supply that investors ultimately needed to absorb with the Fed's $20 billion reinvestment cap in full swing. Agency mortgages generated an excess return of -32 bps vs. Treasuries in Q4 and posted an excess return of -38 bps for the year, outperforming other spread sectors in the Bloomberg Barclays Aggregate Index. We'd note that the volatility and the U.S. Treasury rally late in Q4 also contributed to increased MBS hedging costs.

In line with expectations, agency MBS prepayment speeds declined in Q4, with aggregate Fannie Mae and Freddie Mac speeds reaching single digit conditional prepayment rates, their lowest absolute levels in some time. The MBA Refinancing Index dropped to its lowest level since 2000, while mortgage rates increased to the highest level since 2013. We continue to anticipate a benign prepayment environment, with limited prepayment activity as primary mortgage rates remain elevated. Although rates declined in Q4, they remain above levels that would trigger a meaningful refinancing response relative to historical performance.

Higher coupons outperformed in the 30-year sector (given better carry), but underperformed within the 15-year sector. GNMA2 higher coupons performed well given expectations that GNMA/VA would discourage unusually brisk prepayments by certain non-bank originators. We reduced GNMA exposure into strength, as policy changes continue to complicate modeling efforts. Intermediate 15-year MBS outperformed 30-years due to lower supply. Our decision to increase Freddie Mac exposure was premature, as market skepticism involving Single Security implementation increased given the multitude of open items with UMBS TBA trading set to commence in mid-2019. We remain constructive on Freddie Mac exposure via specified pool form only.

The dollar roll market continued to cheapen with most rolls trading cheaper than intrinsic value amid limited demand and balance sheet capacity. TBAs have struggled with the Fed's reduced presence, while seasoned bonds outperformed on a duration-adjusted basis. Going forward, we continue to favor seasoned pools vs. TBAs for better convexity and fundamental value, even as prices have increased. We find value in conventional loan-balance specified pools as TBA convexity should worsen further.

The White House confirmed plans to nominate Mark Calabria as the next director of the Federal Housing Finance Agency (FHFA) when Mel Watt's term ends in January 2019. It is thought that Calabria could pursue market-based reforms to protect the taxpayer and reduce the GSE footprint (expectations for increased guarantee fees and lowered conforming loan limits). If confirmed, Calabria could be a potential positive for MBS basis performance.

Going forward, with strong turnover speeds in seasoned discounts and slow premium speeds, we believe a barbell of seasoned lower coupons and premiums (for carry) should perform well. We believe 2019 Treasury issuance will continue to weigh on dealer balance sheets with MBS net supply expected to total approximately $250 billion next year given the higher conforming loan limits. We're also considering the possibility that the Fed discontinues its balance sheet roll off by late 2019. Although bank buying increased in Q4 into wider spreads and higher yields, further pressure on the front-end of the yield curve is unlikely to prompt banks into buying mode.

Assuming prepayments on Fed holdings remain benign, we believe its reinvestments should remain below the reinvestment cap through 2019. Even if the Fed discontinues balance sheet reduction, we do not expect the Fed to buy MBS, leaving the net supply to be absorbed by investors. TBA dollar rolls will likely continue to trade cheap to 1-month LIBOR as weighted average coupons and loan sizes increase. We see a worsening fundamental and technical outlook for GNMAs in 2019 and expect the winter seasonal to continue to dampen origination through Q1.

Outlook: We favor up-in-coupon exposure coupled with some lower coupons for turnover and prefer specified pools versus TBAs. We prefer conventional exposure, with a focus on Freddie Macs as we approach the implementation of single security in mid-2019.

Structured Products

While our short-term negative outlook for structured products was premature two quarters ago, it appears to have been the right call for Q4 as structured product spreads widened across the board. And even though Q1 has historically been a good quarter for spread product, we remain slightly cautious about the return outlook in the early part of the year due to heightened broad market spread volatility. For longer-term investors, we believe current spread levels present an attractive buying opportunity for select parts of the structured products market.

Fundamentals, while adequate, no longer provide the immense tailwind they have since the housing trough in 2012. In summarizing fundamentals: residential mortgage credit appears stable and home price appreciation (HPA), while slowing, should remain positive. Commercial real estate (CRE) is of marginally greater concern. Positively, property sectors appear in equilibrium with limited new supply, office building net operating incomes remain healthy, and conduit CMBS underwriting remains stable. On the other hand, cap rate premia (the difference between capitalization rates and Treasuries) have fallen below their long-term averages, making cap rates vulnerable to a modest re-rating higher. CMBS exposure to hospitality properties has increased in recent vintages, and the cyclical nature of hotels exposes BBB-tranches and below to greater business cycle risk. Consumer credit remains a bright spot with credit performance on par with expectations, or better in some cases. For CLOs, fundamental concerns include the looser covenant trend over the last few years and higher percentages of loan-only capital structures. **Nonetheless, we remain constructive on senior tranches, which are structurally robust enough to weather a challenging credit cycle. Across all structured product sectors, we maintain our up-in-capital structure bias despite the steepening credit curve.**

Non-Agency RMBS: Despite slowing HPA, housing and mortgage credit remain on solid footing. Housing affordability still looks about average, even after excluding the unsustainable market conditions of the 2005-2007 bubble. Demographics are swinging favorably with the nascent upswing in millennial household formation. Credit availability, as measured by the MBA's Mortgage Credit Availability Index, is still improving. That said, underwriting standards remain extremely restrictive when compared to pre-crisis criteria, which should provide stability should broader fundamentals soften. All told, we expect HPA to slow to 2-4% range for 2019, which is below the 5-8% annual pace of the last several years. Spreads on legacy loss-taking bonds widened by 50 bps in Q4, to around LIBOR +150 bps, in tandem with broader spread markets. Nonetheless, technicals remain overwhelmingly favorable with the legacy non-agency float declining 10-15% on an annual basis. The backup in Fannie/Freddie CRT spreads was long overdue, with M2 tranches widening by 80 bps in Q4. However, spreads are not yet compelling given the widening in high yield spreads and the CRT sector's liquidity challenges (ownership excludes a broad number of "large" holders and spreads are supported by repo leverage). Additionally, higher percentages of high debt-to-income borrowers in GSE production since mid-2017 may lead to higher than expected credit losses should employment soften.

We continue to find better value in providing financing on legacy mortgage pools. Unrated senior financing spreads re-traced to LIBOR +150 bps, from inside LIBOR +100 bps earlier in 2018. Re-performing loan (RPL) spreads widened in Q4 in both the securitized and whole loan markets. This was partly due to broader market pressures but also due to heavy supply and slowing prepayment speeds in response to higher mortgage rates. UK and Euro RMBS/ABS spreads widened in Q4 amid reduced central bank support, and elevated Brexit concerns added to broader market headwinds. Senior prime and non-conforming securities widened by 15-30 bps. **We are negative on UK RMBS over the near term.** Ongoing headwinds, such as a cooling UK housing market, Brexit-related uncertainty, and potential supply surge in 2019 from 2.0 security refinancings and UKAR (UK government financial crisis program) sales could weigh on spreads in 2019.

CMBS: AAA spreads widened throughout Q4 on broader macro volatility, closing the quarter at Swaps+105 bps from S+78 bps at the start of the quarter. Agency spreads were also wider, closing at S+68 bps from S+54 bps. AAA single asset/single borrower floaters continued their Q3 widening amid heavy supply with spreads closing at L+95 bps from L+80 bps. The on-the-run BBB- index widened 115 bps to +496 bps, with cash also wider by 160 bps—to S+420 bps. Meanwhile, the on-the-run AAA index widened 25 bps to +77 bps. Conduit CMBS underwriting has remained stable. Although the percentage of interest-only loans continues to increase, debt service coverage ratios remain high, and the pro-forma underwriting experienced pre-crisis has not reappeared. Conduit issuance increased as expected in Q4, to $11 billion, up from $9 billion in Q3, but lower compared to $15 billion in the fourth quarter of 2017. Overall, 2018 CMBS issuance finished the year at $90 billion, slightly down from $94 billion in 2017. However, net supply was up $32 billion, the second year with an increase following nine consecutive years of contraction. Breaking supply into sectors: conduit was down 20%, to $40 billion, partially offset by increased CRE CLO issuance of $14 billion. In 2019, we expect overall private label issuance to be flat. However, we believe that conduit issuance will continue to decrease to $30-35 billion, with SASB and CRE CLO issuance increasing slightly to make up for the drop. The decrease in conduit supply is a positive technical in that sub-sector. Agency CMBS issuance remained near record levels in 2018, with similar expectations for 2019 as FHFA caps are unchanged. CRE values were up 5% in 2018 and are now 25% above the previous peak reached in 2007. Major markets have outperformed and are now 39% above the 2007 peak. That said, non-major markets outperformed in 2018 given a shifting preference of foreign buyers. Property sectors appear to be in equilibrium with limited new supply (except for hotels in certain markets and high-end apartments), and strong leasing demand has led to low and stable vacancy rates. Growth rates of property net operating incomes, while lower than recent highs, remain healthy and are expected to average 2-4% in 2019. New construction remains muted given tight construction lending and rising construction costs. Risks include: 1) capitalization rate increases as cap spread premia has gone through long-term averages; 2) increased exposure in conduit deals to hospitality (hotels) whose fortunes are strongly cyclical; and 3) weak retail (malls) exposure in 2012/2013 vintage deals. We believe senior bonds have more than adequate support relative to these risks, but we are negative on mezzanine conduit tranches. We are constructive on select SASB seniors and mezzanine tranches based on the strength of individual credits. Although our expectation for more range-bound spreads proved too optimistic in Q3, our up-in-capital-structure thesis was vindicated by the credit curve steepening in Q4. **We remain constructive on senior bonds at current spreads and negative on mezzanine risk outside of select SASB opportunities.**

CLOs: We continue to consider senior CLOs to be among the most attractive fixed income investments on a risk-adjusted basis, given their benefit from significant credit enhancement and industry diversification across the underlying senior secured loans backing the securitizations. While we strongly believe in the fundamental value of senior CLOs, we are keeping a keen eye on the underlying quality of the bank loan market and recognize that short-term volatility in CLO spreads may occur as sentiment changes regarding underlying bank loan credit quality. We view the recent widening as a better entry point for senior tranches, and the market may be set up to tighten should negative technicals from credit markets abate in Q1. **In the medium-to-long term, we are neutral on spread compression. If broader spread markets recover, we believe spread tightening across the CLO capital structure may be limited by an increase in primary supply. If broader spread markets remain cautious due to concerns around a slowdown in growth or a repricing of liquidity premia, we believe senior CLO spreads will be stymied from further tightening.** Further down the capital structure, we remain cautious, as current valuations remain rich—despite spread widening—and subject to severe spread widening should the economy soften. **The market expects robust net issuance of at least $65 billion in 2019, and we remain focused on the impact of cross-currency basis costs as many global investors may shift demand for certain bonds in response to changes in hedging costs.** Spreads across the capital stack are three-month L+135/205/310/425/750 bps for AAA/AA/A/BBB/BBs, respectively. These were wider in Q4 by 20/40/90/115/165 bps, respectively, with most of the widening experienced during December.

ABS: Spreads widened in Q4 on broader market volatility. Sectors that previously outperformed earlier in Q4 came under pressure in December. Three-year senior cards traded at L +28 bps (+8 bps wider in Q4), two-year senior autos traded at L +30 bps (+10 bps wider in Q4), three-year senior consumer loans traded at L +80 bps (+15 bps wider in Q4), and five-year senior refinance private student loans traded at L +90 bps (+25 bps wider in Q4). December was also the first time in 2018 when we saw name and credit quality spread tiering, and more importantly, we feel risks remain skewed to the downside on both fronts. Liquidity tiering is emerging, and we expect this to continue in Q1 as the market engages in price discovery amid heightened volatility. While technical headwinds persist, consumer fundamentals in aggregate remain stable, with excesses only at the margins (e.g., marketplace lending). **As such, we will look to exploit spread widening opportunities for select issuers with strong legal and compliance procedures in unsecured consumer loans, subprime auto, and private refinance student loans, with a bias toward those with income-based (as opposed to FICO based) underwriting models.** New issuance totaled $242 billion in 2018, a new post credit-crisis high. We are maintaining an up-in-quality bias, which we held throughout the second half of 2018, and a preference for shorter-maturity profiles to mitigate the impact of the next business cycle.

In aggregate, while the credit curve steepening in Q4 has enhanced the appeal of additional credit risk in Q1, our preference is to remain positioned at the top of the capital structure and wait for capitulation among leveraged investors and more speculative asset managers.

Outlook: Long-term positive on the top of the capital structure as the recent widening has created a good entry point for long-term investors. We also acknowledge that structured products are vulnerable to widening credit spreads more broadly, despite their benign fundamentals.

U.S. and European Corporate Bonds

U.S. and European corporate bonds struggled in Q4 as spreads widened sharply despite still favorable fundamentals and positive economic growth. Instead, uncertainty dominated market sentiment as investors focused on slowing global economic growth, less accommodative central bank policies, a protracted U.S./China trade war, geo-political discord, and a flattening/inverted U.S. Treasury yield curve. **Given the speed and magnitude of the back-up, we believe many issues may now be undervalued and spreads have the potential to tighten in the short term across both regions.**

	Total Return (%)		Spread Change (bps)		OAS (bps)
	Q4	YTD	Q4	YTD	12/31/2018
U.S. Corps.	-0.18	-2.51	+47	+60	153
European Corps	-0.62	-1.25	+38	+66	152

Past performance is not a guarantee or a reliable indicator of future results. See Notice for important disclosures. *All investments involve risk, including possible loss of capital. Represents data for the Bloomberg Barclays U.S. Corporate Bond Index and the Bloomberg Barclays European Corporate Bond Index (unhedged). Source: Bloomberg Barclays as of December 31, 2018. An investment cannot be made directly in an index.*

U.S. Corporate Bonds

On the fundamental side, U.S. corporate bonds—excluding energy—remain supported by robust earnings, strong cash flows, positive economic growth, and tailwinds from tax reform. Earnings estimates in Q4 shifted lower, but remain solid at more than 13%. Overall corporate leverage is stable, albeit at elevated levels.

Notable exceptions include the energy sector, which was pressured by the collapse in oil prices, as well as investors' fears that overleveraged BBB-rated issues could be downgraded to non-investment grade, particularly if economic growth slows. BBB-rated issues now represent more than half of the U.S. investment grade corporate universe. And while some of the lowest-rated BBB issuers with large outstanding debt balances may be downgrade candidates, we believe many companies will take steps to deleverage in 2019 to maintain or improve their ratings.

On the technical side, new issuance eased in Q4, as expected, due in part to a decline in debt issued to fund mergers and acquisitions and share buybacks. Investor demand remained strong, even as non-U.S. buyers pulled back. Most new issues were 2-5 times oversubscribed and offered low-to-high single digit concessions. In 2019, M&A and share buybacks are expected to decline further given market uncertainty, lower business confidence, and new tax rules that incent companies to hold less debt on their balance sheets. In the coming year, gross new supply could decline another 10%, and net supply could fall up to 30%.

At this stage of the credit cycle, individual security selection across regions, industries, credit quality, and maturities will likely be a key driver of returns. We continue to favor better-quality financials, electric utilities, and taxable municipal bonds over industrials that may be subject to event risk. We have reduced exposure to lower-rated financial companies in favor of higher-quality U.S. money center banks that are relatively immune to event risk, remain well capitalized, and offer ample liquidity.

We continue to find value in the BBB sector, particularly in shorter maturities, companies poised to deleverage, and non-cyclical "U.S.-centric" issuers that are not pressured by a stronger U.S. dollar. We remain underweight A/AA-rated issuers. We also favor select post-event issues, as well as select European banks due to stabilizing fundamentals and wider spread levels. Longer-maturity corporates, which underperformed the broader corporate universe in 2018, should remain supported by increased contributions to underfunded corporate pension plans, as plans gradually rotate their allocations from stocks to bonds.

European Corporate Bonds

In Europe, uncertainty and risk aversion pushed corporate bond spreads wider at a near constant pace in Q4. Sentiment was dominated more by political uncertainty and fading investor confidence than by fundamentals, which remain reasonably strong against a backdrop of positive, but subdued economic growth. Outside of the riots in France, most political hot beds were familiar—Italy's budget conflicts, the unclear path of domestic Brexit negotiations, U.S./China trade war, and the "dovish" end of the ECB's Corporate Sector Purchasing Program. The CSSP has been a critical support for euro-denominated corporate bonds since mid-2016. And while the ECB will no longer make additional net purchases, it will reinvest maturing bond proceeds to maintain its balance sheet at the current level. Reinvestment should continue past any future rate hikes.

The second half of Q4 saw market volatility increase with thinner new issuance and weak liquidity from investment banks running low inventories. Many new deals in December offered concessions of up to 23 bps on average, compared to 14 bps at the start of 2018. For the year, issuance totaled €414 billion, down from €440 billion in 2017. New supply is estimated to rise to €500 billion in 2019.

In European portfolios, we have been looking to add attractively-priced new issues and are screening bonds that we believe were oversold in Q4. We remain overweight banks but may look to lighten exposure into market strength ahead of expected regulatory-related issuance from "too big to fail" banks. We are also overweight insurance and non-core REITS, as well as non-euro and non-ECB eligible issuers. We added U.S. corporate issuers denominated in EUR that came to market at large concessions vs. the issuer's USD holdings and were attractively priced relative to EUR issuers of similar quality.

In global corporate portfolios, we currently prefer EUR spreads as they rose above USD spreads in Q4 at an aggressive pace. We remain flat to underweight GBP credit spreads and are also flat to underweight spread duration as a whole. We still prefer money center banks, insurance companies, and U.S. utilities denominated in USD, as well as banks and select corporates denominated in EUR. We are reducing exposure to issues with potential tail risks that may be vulnerable to further spread widening and continue to take advantage of price and yield dislocations between EUR and USD bonds of the same and/or similar issuers.

In Q1, we're maintaining a positive view on the U.S. and Europe in the short term. Although volatility will likely continue, we believe the Q4 selloff left a range of issues undervalued. Downside risks include global geopolitical tensions, trade disruptions, a sudden downturn in economic growth across major countries including China, and a flattening/inverted U.S. yield curve.

Outlook: Positive near term given wider spread levels, favorable fundamentals, and positive earnings growth. Still favor U.S. money center banks. U.S. tax reform remains supportive.

Global Leveraged Finance

While the momentum that closed Q3 carried into the fourth quarter for both the U.S. and European high yield markets, the positive sentiment soon abated in the face of several concerns that the markets could not ignore. As a result, spreads widened, and quarterly total returns declined into negative territory.

	Total Return (%)		Spread Change (bps)		OAS/DM (bps)
	Q4	YTD	Q4	YTD	12/31/2018
U.S. High Yield	-4.67	-2.26	+205	+170	533
Euro High Yield	-3.55	-3.35	+155	+228	522
U.S. Leveraged Loans	-3.08	1.14	+169	+134	550
Euro Leveraged Loans	-0.90	1.25	+53	+66	458

Past performance is not a guarantee or a reliable indicator of future results. See Notice for important disclosures. *All investments involve risk, including possible loss of capital. Sources: ICE BofAML and Credit Suisse as of December 31, 2018. An investment cannot be made directly in an index. European returns are euro hedged.*

U.S. Leveraged Finance

On the back of the continued strength from the previous quarter, U.S. high yield spreads hit their post-crisis tights of 316 bps in early Q4. However, the momentum was short lived as spreads would reach their year-to-date wides less than a month later amid an escalating U.S.-China trade war, several corporate profit warnings, prospects for political gridlock, and concerns over further Fed policy tightening. Overall, the U.S. high yield marked posted excess returns of -723 bps vs. swaps in Q4. For the year, the excess return vs. swaps was -379 bps.

After strong performance for much of the year, CCC-rated credits retreated in the face of the risk-off environment, posting Q4 excess returns of -1261 bps vs. swaps, compared to -571 bps for BBs and -732 bps for Bs. For the year, single-B rated credits fared the best, posting excess returns vs. swaps of -315 bps, vs. -383 bps and -595 bps for BBs and CCCs, respectively.

Cyclical industries were the clear underperformers in Q4, with energy, chemicals, metals & mining, and autos falling the most. With pressure from declining oil prices, the energy sector was down nearly 6% in Q4. Of note, oil prices have fallen by 28% amid growing concerns about an increase in global supply and a slowdown in economic growth. The airline sector, which benefits from lower oil prices, was the top performing sector in Q4 at +0.27%, making it the only one with a positive total return for the quarter. In Q3 2018, each U.S. high yield sector posted positive total returns.

In general, global default activity continued to slow. Moody's 12-month U.S. speculative grade default rate ended November at 3.4%, the lowest level since May 2015. As 2018 concluded, the speculative-grade corporate market saw 66 defaults. This compares to 91 defaults over the same period in 2017. Looking ahead, Moody's expects defaults to trend lower over the next few months before gradually rising.

High yield bond funds reported heavy outflows in Q4, bringing the year-to-date total to just over $40 billion. This includes $30.3 billion from active managers and $9.9 billion out of ETFs.

After a sluggish third quarter, U.S. high yield gross new issuance came to a grinding halt in Q4 with the market pricing only 36 issues for $19 billion in proceeds. In fact, no new issues priced in December. For context, the previous three quarters saw gross new issuance of $73 billion in Q1, $54 billion in Q2, and $42 billion in Q3. Year-over-year issuance was down 40%, and 2019 forecasts expect issuance to come in flat to 10% lower. With refinancing activity accounting for more than 60% of issuance activity in 2018, net issuance was also down significantly. The energy sector continued to dominate new issuance in Q4 and accounted for 24% of volume in 2018. In fact, energy has led issuance in six of the last seven years.

A combination of solid fundamentals (strong earnings and low defaults), favorable supply technicals, and belief that near-term risks (U.S.-China trade war, Fed tightening, Brexit, Italian budget concerns) are priced in, thus paving the way for relief rally in early 2019, leaves us modestly constructive on U.S. high yield in the near term. Longer term, concerns over slowing economic growth have been offset by the meaningful spread widening late in 2018 and makes the risk-reward profile within U.S. high yield seem more symmetrical than it was three months ago. Indeed, the resolution of some of the aforementioned risks could be a catalyst for significant spread tightening and large excess returns in 2019**. And while a recession (or the increased probability of one) could prompt additional significant spread widening, at least the upside/downside dynamic is currently more balanced, and our probability-weighted expectation for U.S. high yield excess returns is around 3% in 2019.**

In general, we expect defaults to remain low in 2019. In terms of positioning, we favor single-B issuers, remain cautious on commodities, and maintain overweights to independent power producers and U.S. consumer-related issuers.

The leveraged loan market, which was largely immune to the volatility in early 2018, also pulled back amid heavy retail outflows and an expected slowdown in CLO formation. In Q4, the S&P/LSTA Leveraged Loan Index posted excess returns of -365 bps vs. swaps. For 2018, the loan market has generated -93 bps of excess returns vs. swaps. Lower rated loans, although only approximately 5% of the index, also underperformed.

Loan flows turned sharply negative in Q4. In fact, loan funds closed the period with four consecutive weekly outflows of $1 billion or greater, including the largest weekly outflow on record ($2.53 billion). However, on a year-to-date basis, flows were positive with $7.6 billion of net inflows into loan funds.

New issue volume in the loan space slowed considerably in the second half of the year, totaling $197 billion. This compares to approximately $500 billion over the first half of 2018. Energy, which is a much smaller component of the loan market, accounted for only 3% of 2018's new issue activity. Technology, healthcare, and services were the biggest contributors, making up nearly 40% of 2018 new issue volume.

Looking ahead, although U.S. leveraged loan technicals are not likely to improve as CLO formation slows down, we believe baseline support will emerge from high-yield buyers seeking relative value, which supports our more balanced short-term view for loans. Longer term, we believe this technical backdrop presents a buying opportunity for U.S. loans, particularly in the higher quality, double-BB and strong-single-B issuers, which have been pressured by their better market liquidity profiles in this cash-redemption environment. The likely higher recovery rates of these loans relative to their high-yield counterparts further enhances our belief that these segments of the U.S. loan market offer attractive relative value.

European Leveraged Finance

European high yield spreads began Q4 with a positive tone—32 bps tighter (at 367 bps) than the year-to-date wides reached at the start of Q3—as negative noise around Italian political developments faded and meaningful high yield bond supply was digested. Spreads remained relatively stable in October, but sold off sharply in November and December on intensifying trade war rhetoric, concerns around a broader deceleration in global growth, and continued Brexit uncertainty. This sent spreads 155 bps wider over Q4, ending the period at 522 bps.

In Q4, the broad European currency high yield index posted an excess return of -440 bps vs. swaps, bringing the year-to-date excess return to -436 bps. In contrast to Q3, BBs fared the best with an excess return of -343 bps vs. swaps, compared to -615 bps and -978 bps by Bs and CCCs, respectively. For the year, BBs posted excess returns vs. swaps of -372 bps, outpacing Bs and CCCs by +94 bps and +860 bps, respectively.

The high yield bond new issue pipeline remained relatively quiet in Q4, muffled by the weak market tone in November and December. Overall, full-year 2018 gross new issue volume trailed the prior year's pace by 28%—€63.5 billion, compared to €87.6 billion in

2017. Refinancing activities continued to dominate issuance, with M&A-related activity up significantly compared to 2017. Net issuance ended 2018 flat relative to 2017.

Moody's default rate continued to decline, ending November at 1.5%. Expectations for European and global economic growth to remain close to trend should support a benign default environment. However, if the macroeconomic situation deteriorates further than expectations, default rates could increase.

Throughout 2018 we have preferred loans to bonds, and despite some weakness over the final past two months in Q4, European leveraged loans outperformed in 2018.

Given the market volatility in Q4, loan issuance was lower year-over-year. For the quarter, the market priced €12.8 billion of gross new issuance, versus the €27 billion during the same period in 2017. The €95.9 billion of gross supply that priced in 2018 represented a 15% increase relative to the €81.5 billion that priced in 2017. In general, the European leveraged loan primary market has been dominated by M&A related activity, rather than opportunistic financings (i.e. refinancings and repricings).

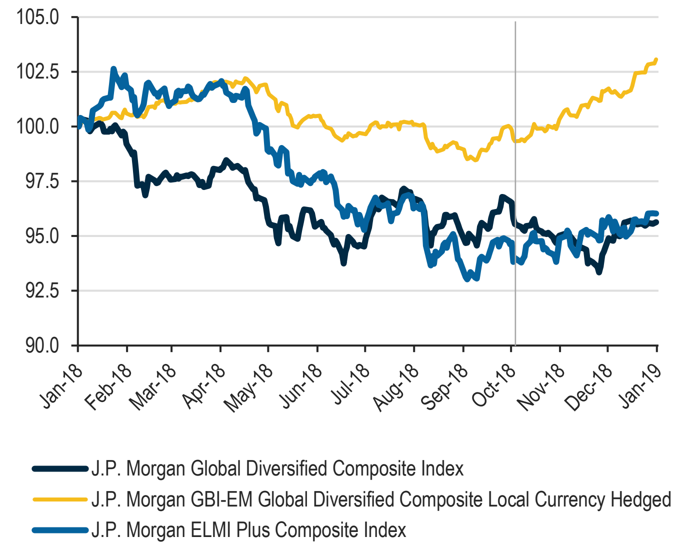
We believe the spread widening in European high yield market in Q4, a robust macroeconomic backdrop, solid credit fundamentals, and reasonable earnings growth could lead to modestly positive excess returns for 2019. The lack of material near-term recession risk in Europe, as well as the belief that the ECB will not jeopardize recent economic growth, supports our short- to medium-term outlook. The threat to the global growth trajectory from on-going trade wars, slowing Chinese growth, and European political uncertainty (including Italy, UK, and France) leaves us more cautious over the longer term.

In terms of positioning, we continue to believe B-rated issuers and select BB-rated issuers offer the best risk / reward dynamic. We also continue to seek attractive relative-value opportunities—for instance, dislocations between sterling and euro tranches of the same underlying credit have become increasingly common given Brexit uncertainty. Additionally, we maintain our cautious view on European retail, specialty finance, and construction sectors.

Outlook: Modestly constructive near term given favorable fundamentals and supply technicals, but neutral long term. In Europe, we are modestly positive in the short term, but cautious long term amid global growth and European political concerns.

Emerging Markets

As we consider the EM outlook for 2019, we start with the surprise of Q4 2018, which was the outperformance of EM local bond markets—particularly local hedged bonds and EMFX—relative to EM hard currency assets.



Source: Bloomberg as of January 4, 2019. Indexed to 100.

	Total Return (%)		Spread / Yield Change (bps)		OAS (bps)/Yield %
	Q4	YTD	Q4	YTD	12/31/18
EM Hard Currency	-1.26	-4.26	80	130	415 bps
EM Local (hedged)	2.32	0.75	-12	36	361 bps
EMFX	1.20	-3.33	-7	176	5.30%
EM Corps.	-0.04	-1.65	61	100	371 bps

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In local bonds, there was clearly dominant outperformance in select countries (e.g. Brazil and Turkey), while Mexico was the clear underperformer.

Broader factors behind the performance in local EM consisted of a more benign global inflation outlook, lower oil prices (a result of Trump's flexibility regarding Iran sanctions as well as supply dynamics), and a moderation in the U.S. dollar's FX dominance. The latter relates to a slowing of U.S. growth, the outcome of the U.S. mid-term elections, and a repricing of Federal Reserve policy expectations. Higher-yielding EM currencies that were some of the worst performers over the prior two quarters outperformed in Q4 (Argentina, Turkey, Indonesia, Brazil, India) while oil sensitive and euro sensitive currencies lagged (Colombia, Mexico, Hungary, Poland, and Czech Republic).

When we delve into the performance of EM hard currency assets in Q4, we note that much of the relative underperformance took place in October and November. Not surprisingly, oil sensitive and exporting countries underperformed (i.e. Mexico and Nigeria), while other underperformers included Argentina and Ukraine.

Outperformers included Brazil, Turkey, and the idiosyncratic stories of Mozambique and Zambia. EM hard currency assets have performed well since the G-20 meeting in early December and specifically the initial signal that there was more scope for negotiations on tariffs between the U.S. and China in 2019, which supported the broader tone across the sector. In December, EM hard currency rose 1.35% while the local markets posted a slight negative return. Hard currency spreads remained resilient, topping out at +400 bps at the end of November, subsequently tightening into +390 bps before ending the quarter slightly wider at 415 bps amid volatility in the U.S. stock market and other risk assets. One relevant rebound to end 2018 was the recovery in Mexico, rebounding about 2.3% in December.

What We're Watching

The themes that dominated 2018 (pricing in tighter global liquidity, surprising U.S. growth outperformance, and U.S. dollar dominance) should present less of a headwind in 2019. While it is hard to express a high degree of conviction about tailwinds in 2019, several factors should support the sector. This includes valuations, a potentially benign base case for U.S./China trade relations, and a more dovish Federal Reserve. EM fundamentals should be supported by adequate growth, and access to financing—key for many EM sovereigns, quasi-sovereigns and corporates—will be a key driver of returns. This access will depend on broader risk sentiment as well as the willingness and ability of EM policymakers to adjust to the new global conditions. The IMF, China, and other bilateral funding sources are likely to continue to provide support to EM countries. The election calendar is busy in 2019 (Ukraine, Indonesia, India, El Salvador, and Argentina), yet aside from Argentina's elections in October, the other polling events are likely to result in less binary outcomes. The following provides some additional detail on early 2019 themes:

- **EM growth should be slightly higher next year—our forecast is 4.7% compared with 4.6% in 2018.** While select EM central banks have been hiking rates, EM inflation is broadly under control (with the exception of a few outliers), and rate hikes have been modest.

- **U.S./China trade tensions: there is a solid case to expect a compromise on the China/U.S. trade war in Q1.** While clearly issues of intellectual property and technology transfer are the main points of contention, these are likely to be longer-term challenges. In the short term, it is in both President Xi and President Trump's best interest to present a "win-win" solution.

- Commodity prices and oil prices in particular. The level of oil prices presents a mixed bag for EM countries. However, if the recent OPEC agreement holds as broader oil geopolitics play out, EM can perform well with oil prices in the $65 range.

- Country specific developments in Brazil (where we expect progress on pension reform), Mexico (ability to meet budget objectives, the outlook for PEMEX, and central bank policy), Argentina (IMF program implementation, elections), Turkey (future policy responses given the slowing economy, local debt rollovers), Russia (oil prices and sanctions), as well as elections in Ukraine, India, and Indonesia.

- In spite of populist victories and agendas of late—on both the left and right—EM countries' responses regarding fiscal, monetary, and other confidence measures remain key.

- EM flows and technicals: strategic flows are still positive, but retail flows in the different EM sectors deserve monitoring. It will be interesting to see if the new year brings some relief for some of the more crowded positions. We anticipate the inclusion of the five GCC countries (Saudi Arabia, Kuwait, UAE, Qatar, and Bahrain), which will amount to over 11% of the J.P. Morgan EMBIGD Index, may bring meaningful supply from these countries. The inclusion of local China government bonds in several local bond indices is also of note. Clearly, the implication is that there could be substantial capital inflows into China's local bond market, and this could provide relief, as well as challenges, to Chinese policymakers.

Investment Implications

As 2019 progresses, we remain mindful of headwinds (slowing growth in China and Europe potentially leading to slower global trade and U.S. Treasury supply potentially crowding out risk assets), but remain encouraged by what we have observed in Q4 as EM assets responded well to the shifting macro backdrop. **If our base case for a more constructive EM outlook proves to be off course, our positioning should weather the downside risk in what could again be a challenging backdrop.** A negative environment includes a significant slowdown in U.S. growth and potential recession concerns, potentially brought about by a marked escalation of the trade war, lower commodity prices, and importantly, significantly lower growth in China. Another scenario that is less constructive for EM is one in which there is a repeat of some 2018 themes—surprisingly strong U.S. growth, a more hawkish Fed, and a strong dollar leading to concerns about "dollar scarcity" and outflows from EM broadly. We think the more negative scenarios for EM are less likely to play out, at least from the current vantage point.

Notable premiums have been built into spreads in countries that have suffered in the selloff. While there are distinct vulnerabilities, we believe the risk of a credit event in sovereign and quasi-sovereign issuers in the riskier countries is contained over the near term. **We remain overweight spread product in 3-7 year sovereign and quasi-sovereign issuers. As investors became more sanguine about the outlook for the Fed, longer-dated bonds rallied, and we became more balanced overall in our sensitivity to U.S. Treasuries, choosing to focus our overweight positioning in higher-rated sovereigns and quasi-sovereigns. We are positioned in select EM corporates.**

We are cautious in EMFX positioning and will focus on relative value among EM currencies. Valuations remain attractive with real effective exchange rates at the bottom quartile of the 20-year range and essentially unchanged since 2004. Lower oil prices have helped more currencies than they have hurt, and current account balances are improving and, therefore, reducing external vulnerabilities. Despite the 2018 selloff in EMFX, the carry potential remains the lowest following a selloff in the post-crisis era. **We have increased exposure to EM local markets that have proven resilient and to markets where valuations are attractive given the premium built into curves. There are many markets with highly-attractive hedged yields.**

Outlook: While DM and EM policy uncertainty will dominate the global backdrop, there is scope for recovery in EM debt. The best way to take advantage of very attractive valuations is to focus on short-maturity hard-currency bonds, over-sold local bond markets, and EMFX relative value rather than the direction of the U.S. dollar.

Municipal Bonds

In Q4 2018, AAA-rated municipal bonds underperformed U.S. Treasuries with maturities of five years and under, while performing in-line with U.S. Treasuries beyond five years. The 10- and 30-year Municipal/Treasury yield ratios finished the year at 84.7% and 100%, respectively.

Gross issuance totaled $339 billion in 2018, a 24% decline from the prior year. Lower supply was expected as issuance was pulled forward into the fourth quarter of last year, ahead of tax reform. While mutual fund flows turned positive toward the end of December, fund flows were largely negative in Q4, bringing year-to-date net outflows to -$1.3 billion.

As Q4 ended, AAA municipal yields were lower across the curve on the back of the rally in Treasuries. The municipal yield curve steepened modestly with the 5- to 30-year curve at 108 bps, 9 bps steeper in Q4 and 22 bps steeper year-to-date. Total returns for Q4 are +1.69% and +0.30% for the high grade and high yield indices, respectively. This brings the returns to +1.28% and +4.76% for the high grade and high yield indices, respectively in 2018. Year-to-date high yield returns were boosted by strong performance from a limited number of Puerto Rico credits remaining in the high yield index as various entities and creditors moved closer to negotiated restructuring agreements. Puerto Rico finalized its first debt restructuring in Q4 as bondholders agreed to exchange their Government Development Bank (GDB) debt for new bonds.

Long taxable municipal total returns were 1.21% in Q4 and -1.82% in 2018, resulting in outperformance vs. the long U.S. corporate index for Q4 (-1.80%) and year (-7.24%). The year-to-date excess return for long taxable municipals of -149 bps outpaced those of the long corporate index (-651bps).

Our positive outlook for Q1 is based on the relative attractiveness of tax-exempt municipals, the favorable near-term technical climate, and expectations that the shift from mutual fund outflows to inflows late in Q4 should continue in the near term, especially if rates remain range bound.

While gross supply will likely be higher in 2019, negative net supply early in Q1 should provide support to the municipal market. Following the GDB restructuring deal in Q4, several key events in January will lay the groundwork for a COFINA restructuring deal, which could potentially occur in first half of 2019. A large COFINA restructuring deal will boost Puerto Rico exposure in the high yield municipal indices, but it remains to be seen how much appetite high yield municipal funds will have for restructured Puerto Rico debt. **While many states and localities have experienced solid revenue growth in recent years, our view is that fiscal year 2020 budgets should reflect the current economic cycle, as well as ongoing expenditures related to pensions and Other Post-employment Benefits (OPEB) liabilities.** In addition, states and localities will need to allocate resources to fund deferred infrastructure projects given the absence of an infrastructure plan from the Trump administration. **Finally, we expect taxable municipals to perform in line with U.S. corporate bonds, with the potential for outperformance in a corporate spread widening environment.**

Outlook: Positive. Relative attractiveness of tax-exempts and favorable near-term technicals should lead to outperformance vs. U.S. Treasuries.

IMPORTANT I NFORMATION

Source of data (unless otherwise noted): PGIM Fixed Income and Bloomberg as of January 2019

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- 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 million.
- U.S. Senior Secured Loans: Credit Suisse Leveraged Loan Index: The Credit Suisse Leveraged Loan Index is a representative, unmanaged index of tradable, US dollar denominated floating rate senior secured loans and is designed to mirror the investable universe of the US 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 Unhedged: Credit Suisse Western European Leveraged Loan Index: All Denominations Euro 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 is hedged to EUR. The Index return does not reflect the impact of principal repayments in the current month.
- Emerging Markets USD Sovereign Debt: JP Morgan Emerging Markets Bond Index Global Diversified: The Emerging Markets Bond Index Global Diversified (EMBI Global) tracks total returns for USD-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.
- 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 US 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 USD-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 US Treasury Index measures US dollar-denominated, fixed-rate, nominal debt issued by the US Treasury. Treasury bills are excluded by the maturity constraint, but are part of a separate Short Treasury Index.
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- 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.
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