FIXED INCOME ASSUMPTIONS

Higher inflation expectations change the pathways for interest rates

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IN BRIEF

- We raise our cash rate assumptions modestly, in line with this year's slightly higher inflation forecasts but not to exactly equal our inflation forecast upgrade; we expect central banks, in most cases, to maintain negative real rates while inflation rises.
- Our assumptions are little changed but for shortening the window for normalization; we see 10- and 30-year bond yields rising from the start. By rising faster than cash rates, the yield curve steepens for much of our forecast period.
- Central banks' differentiated inflation-targeting credibility influences our assumptions more strongly than usual, changing the speeds at which we expect different economies' cash rates and long bond yields to normalize.
- We expect real cash rates and real bond yields to remain depressed, relative to underlying economic growth, for much of our horizon, reflecting coordinated fiscal and monetary policy, as well as policies broadening to include social goals such as "greening" economies.
- We give a small lift to government bond returns. In credit, U.S. investment grade returns rise while high yield returns decrease, which reduces the relative attractiveness of high yield vs. other risk assets.

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ADJUSTING FOR HIGHER INFLATION EXPECTATIONS

This year, our cycle-neutral assumptions at the long end of the yield curve are little changed. We expect 10- and 30-year global bond yields to rise right from the start of our forecast period. We also raise our U.S. cash rate assumptions modestly, from 1.6% last year to 1.8% over our 10- to 15-year forecast period, in line with slightly higher developed market (DM) inflation forecasts.[1]

We expect real cash rates and real bond yields to remain depressed, relative to underlying economic growth, for a prolonged portion of our assumptions horizon. Our forecast assumes better synchronized fiscal and monetary policies across developed economies will persist. It also reflects our expectations that in developed markets policies will broaden to include social goals, such as the "greening" of economies, raising the minimum wage and expanding central banks' definitions of maximum employment.

We expect long-end bond yields to rise ahead of cash rates, steepening the yield curve over much of our forecast horizon. Over our full Long-Term Capital Market Assumptions (LTCMA) time horizon, however, we expect higher cycle-neutral cash rates will mean flatter nominal yield curves than projected in past editions.

Our higher cash rate assumptions don't keep up with our upgrade in inflation assumptions. Our fixed income assumptions lag this year's higher inflation forecast: We expect central banks will, in most cases, maintain negative real rates while inflation rises. The impact on bond markets is clear: Artificially depressed bond yields, via easier than normal policies – particularly monetary policies – will be needed if central banks are to reflate inflation expectations and achieve their target inflation outcomes toward the end of our forecast horizon.

Our higher inflation expectations also imply that the band of uncertainty around our cash rate assumptions has widened relative to past years.

We also expect green bonds, issued to fund sustainable projects, to rise in prominence (see box, **GREEN BONDS: GROWING ATTENTION, RECOGNITION AND ADOPTION BY MAJOR CENTRAL BANKS**).

In the year leading up to this forecast, changes in the outlook for policy had created a roller-coaster ride for bonds, illustrating the market's, and our assumptions', sensitivity to beliefs about how policy will evolve in coming years. Global bond yields rose at the start of 2021 by over 40 basis points (bps), to 1% – as measured by the J.P. Morgan Global Bond Index – on news that economies would be reopening and with the prospect of massive U.S. fiscal spending. In the second half of the year, however, much of those gains had reversed. The index yield fell back to about 70bps, driven by spikes in Delta variant coronavirus infections, constrained U.S. fiscal spending and concerns that central banks might be less tolerant of higher inflation than expected.

At publishing time, the index yield had risen, back up to around 1%, reflecting renewed inflationary concerns and central banks' slightly more hawkish tilt.

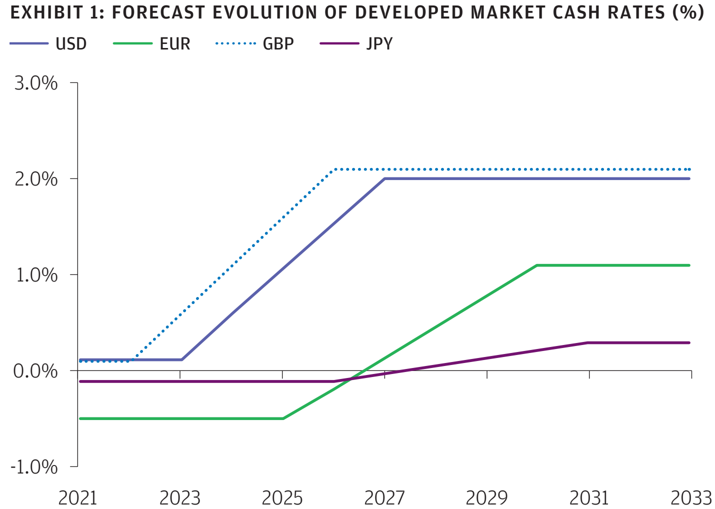
POLICY DIFFERENTIATION: GROUPING CENTRAL BANKS BY INFLATION-TARGETING CREDIBILITY

This year's fixed income assumptions are subject to a stronger than usual influence from countries' central banks' inflation-targeting credibility. This changes the speeds at which we expect economies' cash rates and long bond yields to normalize (**EXHIBIT 1**). We've grouped central banks according to their credibility and normalization speed, a further differentiation from our 2021 assumptions, in which we projected that a synchronized reset of the economic cycle would also align monetary policies.

We use central banks' historical track records of achieving inflation targets to differentiate among economies, producing three groupings: fast, medium and slow (**EXHIBIT 2**).

We see more differentiation in economies' cash rates pathways and normalization windows

EXHIBIT 1: FORECAST EVOLUTION OF DEVELOPED MARKET CASH RATES (%)



Source: Central banks, Bloomberg; data as of September 30, 2021.

[1] Cycle-neutral: The average yield (or rate) we expect after normalization. Our slightly higher inflation forecasts across major developed economies reflect output gaps quickly closing in the wake of the coronavirus recession, and fiscal and monetary policies working together, creating stickier than expected inflation in the pandemic's later stages. For our full set of macroeconomic assumptions, see Michael Hood and David Kelly, "Macroeconomic Assumptions: The new old normal: Inflation outlook moves up, but growth is still constrained," *2022 Long-Term Capital Market Assumptions*, J.P. Morgan Asset Management, November 2021.

Our fixed income assumptions are influenced by central banks' differentiated inflation-targeting credibility

EXHIBIT 2: COUNTRIES, GROUPED BY SPEED OF POLICY NORMALIZATION

Group	Countries	Speed of policy normalization	Factors
No issue meeting inflation target	Canada, UK, Norway	Fast	Central banks have not had a persistent problem meeting their inflation mandates.
Apparent cyclical issues meeting inflation goal; addressed by changes to FAIT or YCC	U.S., Australia	Medium	Central banks have missed their inflation goals, but this may be due to cyclical factors.
Structurally unable to meet inflation goal	Euro area, Switzerland, Japan	Slow	Central banks are persistently missing their inflation goals; we see structural factors hampering the inflationary process.

Source: J.P. Morgan Asset Management. FAIT: flexible average inflation targeting; YCC: yield curve control.

U.S. RATES

We raise our cash rate assumption by 10bps, to 2%, to account for rising inflation and our view that the Federal Reserve (Fed) will meet its inflation goal, on average, over our forecast horizon. The real component of the cash rate, however, is lower than last year, in light of the Fed's need to maintain easy monetary policy conditions to reach its inflation target.

We expect cash rates to normalize over four years, starting in 2023. As noted, even with the Fed's adoption of flexible average inflation targeting, the start and pace of normalization should be faster than during the expansion that followed the global financial crisis, but still much slower than in the 1990s or early 2000s (**EXHIBIT 3**).

We keep our U.S. 10-year cycle-neutral yield assumption unchanged at 3% and shorten how long it takes to get there, again reflecting our view that the central bank should start tapering asset purchases in the next year and that bond yields will rise as the economy expands and output gaps close.

EURO AREA RATES

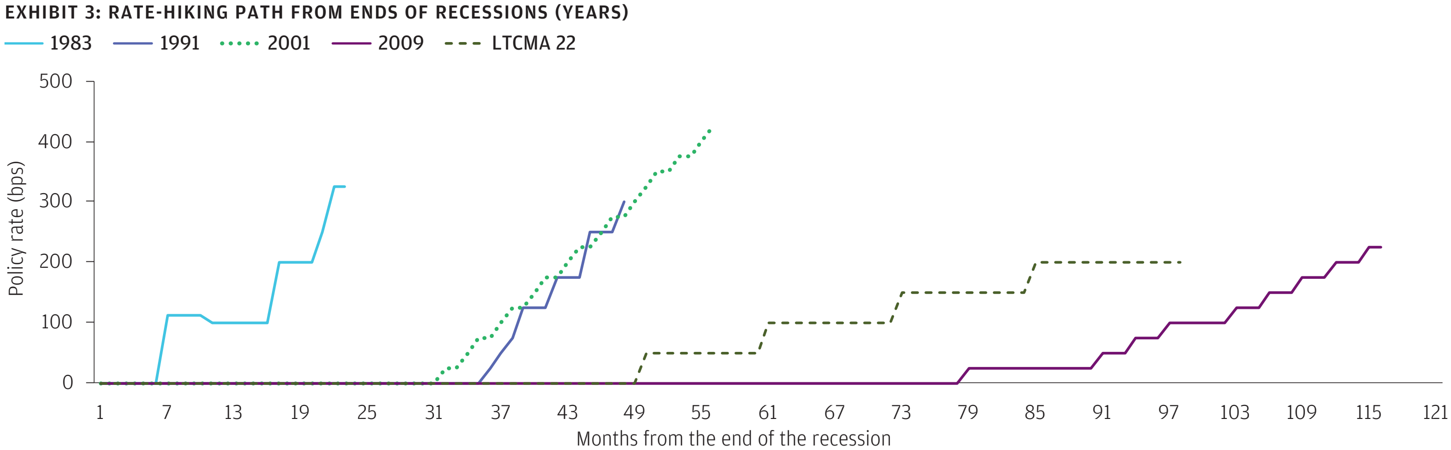
For the euro area, we raise our cycle-neutral cash rate assumption modestly, to 1.1%, adjusting for higher average inflation outcomes. We lengthen the window of normalization to account for our view that the euro area still faces challenges on inflation credibility. This leaves the average cash rate over our forecast horizon at 0.1%, lower than last year's assumption.

The European Central Bank (ECB), since its strategic review announcement in July 2021, now allows for a "symmetric" 2% inflation target.[2] The ECB's stronger commitment to keeping rates low while inflation is below target increases our confidence in the central bank's willingness to wait until inflation picks up to its target before raising rates, and lifts the chances the ECB will eventually reach its objective.

[2] The ECB removed from its mandate of "close to, but below, 2%" the "but below" portion – indicating it will tolerate periods of inflation above 2% in order to meet its inflation objective over the medium term.

We expect an earlier start and faster pace of normalization for U.S. rates than during the last expansion, but a much slower path than in the 1990s and early 2000s

EXHIBIT 3: RATE-HIKING PATH FROM ENDS OF RECESSIONS (YEARS)



Source: NBER, Bloomberg, J.P. Morgan Asset Management; data as of September 1, 2021.

We leave unchanged our 10-year cycle-neutral assumption, 2%, which we forecast will be reached in five years – slower than in the U.S.

JAPANESE RATES

Our cash and 10-year yield assumptions are unchanged for Japan, at 0.3% and 0.9%, respectively. The only change we make is to further lengthen the period until we expect normalization to begin, at both ends of Japan's yield curve. Our Japanese government bonds return assumption increases marginally since last year.

UK RATES

We raise the UK cycle-neutral cash rate to 2.1%, from 2% last year, due to a 20bps rise in expected average UK inflation. We also adjust our 10-year yield assumption modestly higher, to reflect our small upgrade to real growth expected in the UK. The bigger change this year comes in the normalization pathway for both cash and the 10-year Gilt. The UK sits in our first group of countries, which do not face the issue of having undershot their inflation target. We therefore believe the Bank of England (BoE) will be one of the first central banks to raise rates in this new cycle due to inflation. Ongoing uncertainty about the future relationship between the European Union and the UK poses a risk to this view, but given persistently high inflation expectations, the BoE may feel compelled to raise rates.

Our UK government bond return assumption rises significantly this year as a function of much higher starting yields. At publishing time, 10-year Gilt yields were at 1.0%, up significantly from 0.4% a year earlier (**EXHIBIT 4**).

OTHER DEVELOPED MARKETS

We upgrade our cash rates to account for higher expected inflation – in Canada, in line with the U.S., and in European periphery countries, including Sweden and Denmark, in line with the euro area. Cash rates in Canada are on a more aggressive normalization pathway than U.S. rates, as Canada does not engage in average inflation targeting and does not face the same likelihood of falling short of its inflation targets (as some other DM economies do), and thus should see a faster rate of normalization than other economies, including the U.S.

The one place where we reduce cash rates is Australia, by 20bps, to 2.6%, based on its economy's stubborn undershoot in inflation and inflation expectations. We expect that undershoot to translate into relatively more dovish policy in this cycle.

Inflation expectations influence our 2022 assumptions

EXHIBIT 4: STANDARD G4, IG, HY AND EMD FIXED INCOME RETURN PROJECTIONS

	USD		GBP		EUR		JPY	
	Cycle-neutral yield (%)	Return	Cycle-neutral yield (%)	Return	Cycle-neutral yield (%)	Return	Cycle-neutral yield (%)	Return
Inflation	2.3%		2.2%		1.5%		0.7%	
Cash	2.0%	1.3%	2.1%	1.5%	1.1%	0.1%	0.3%	0.0%
10-year bond	3.0%	2.4%	2.5%	1.7%	2.0%	1.3%	0.9%	0.6%
Long-maturity government bonds	3.4%	1.7%	2.7%	0.4%	2.3%	0.1%	0.9%	0.7%
Investment grade credit	4.6%	2.8%	4.2%	2.3%	3.0%	1.5%	1.2%	0.7%
High yield	7.4%	3.9%			5.7%	2.9%		
Emerging market debt	6.7%	5.2%						

Source: J.P. Morgan Asset Management; estimates as of September 30, 2021.

Long-maturity government bond index: Citi EMU GBI 15+ yr EUR; Citi Japan GBI JPY; FTSE UK Gilts Under 15+ yr GBP and Bloomberg U.S. Treasury 20+ yr USD. High yield: Bloomberg US High Yield 2% Issuer Cap USD and Bloomberg Pan-European High Yield EUR. Emerging market debt: J.P. Morgan EMBI Global Diversified Composite. Cycle-neutral: the average yield we expect after normalization.

INFLATION-LINKED BONDS

Across developed markets, our cycle-neutral *real cash* rates have fallen this year, as our inflation forecasts have risen more than those for nominal cash rates. Higher inflation and lower real cash rates are consistent with structurally easier monetary policy. Even with our higher inflation forecasts, the risks around our base case are to the upside for a second year, but less pronounced. This leads us to reduce the inflation risk premia embedded in our breakeven forecasts for all major regions.

The impact of these changes is that our 2022 cycle-neutral breakeven curve assumption is flatter, reflecting our forecast that central banks will consistently meet their targets after normalization. But our real yield curves are actually steeper – a reflection of easier monetary policy depressing the front end and structurally easier fiscal policy putting upward pressure on longer-dated real yields.

As an illustration, our U.S. real cash rate assumption (using CPI for inflation) falls from -10bps to -30bps, and the 10-year implicit real yield declines from 60bps to 50bps, leading to a 10bps steepening in the real yield curve.

CREDIT

Our credit assumptions are little changed from last year, as we continue to believe companies will issue long-maturity debt, be comfortable with their credit ratings (especially BBB and BB) and benefit from the overall low yield environment. While the past year has seen yields rise across developed investment grade (IG) credit markets, yields remain historically low and we forecast that they will remain low for the next decade. While IG returns rise due to higher starting yields, high yield (HY) returns fall slightly because of the significant spread tightening over the past 12 months. That reduces HY bonds' appeal, lowering their position on the stock-bond frontier.

In the past year, credit volatility subsided after a volatile 2020–21; both IG and HY companies' balance sheets strengthened, leading companies to organically de-lever, further tightening spreads. In some markets, central banks' continued purchasing of corporate bonds compressed spreads further.

Investment grade

Our forecast for corporate spreads is little changed from last year. We continue to expect firms to prefer issuing long-term debt over the coming 10 to 15 years. We have introduced some regional differences between the euro area and the U.S. to reflect our expectations of a more active ECB.

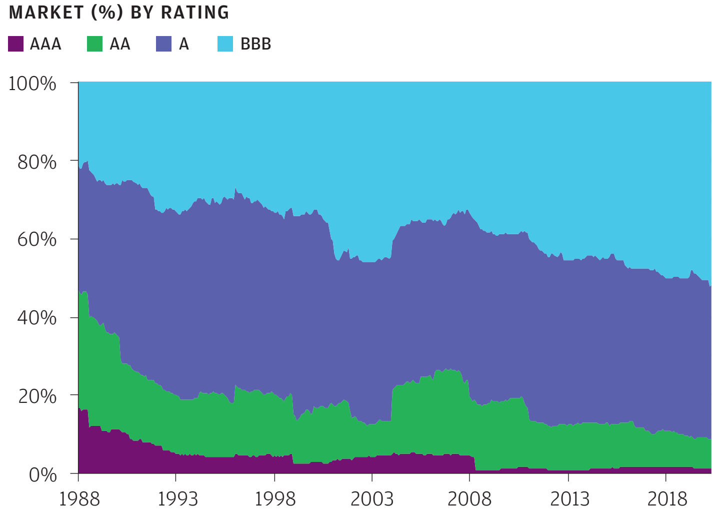
We expect leverage to fall over our forecast period. We believe leverage metrics have peaked and should return to the more normal levels last seen five years ago as a natural result of the recovery in corporate earnings and revenues. While funding conditions are accommodative, we also expect companies will continue to issue debt at the longer end of the curve, keeping the duration of benchmark indices similar to today's. We see the pace of issuance in 2021 continuing, given the historically low cost of funding. Even if corporate ratings don't rise, corporate balance sheets should still benefit from locking in low cost funding for long periods.

As noted, while the Fed has ended its bond purchasing program, the ECB continues to buy investment grade debt, which should continue to anchor spreads in the euro area, albeit at tight levels.

We expect BBB rated credits to continue to dominate the market. Since 2008, BBBs' share of the index has grown steadily; as 3Q 2021 began, it stood at 53% of the Bloomberg IG index (**EXHIBIT 5**). Downgrades fed the increase. Companies also increasingly see BBB and BB as a sweet spot because low yields have lessened the benefit of being higher rated. In the short term, increased balance sheet strength has allowed firms to de-lever; however, we expect pressure in the form of shareholder returns and/or acquisition opportunities will keep ratings stable. Given a strong recovery in profits, we expect companies will have a choice over the coming years: whether to operate with more leverage as BB or to move back into the investment grade universe.

BBB rated credits continue to dominate the investment grade market

EXHIBIT 5: COMPOSITION OF U.S. INVESTMENT GRADE CORPORATE BOND MARKET (%) BY RATING

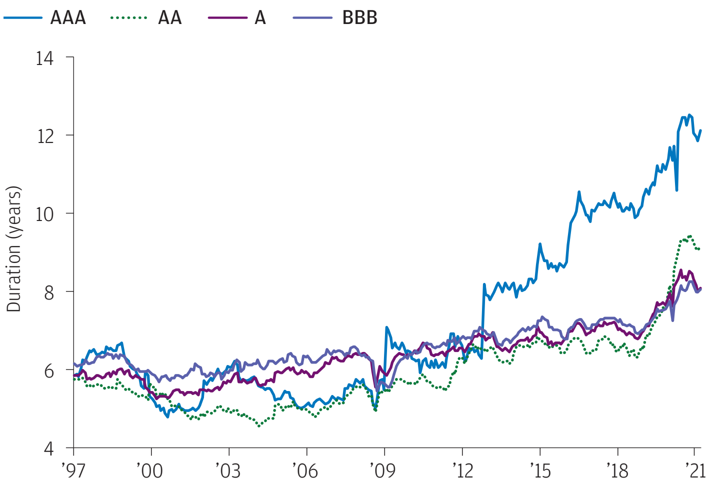


Source: BofA Securities, Bloomberg; data as of April 2021.

Our LTCMAs see low yields for the immediate future, even as companies continue issuing longer-maturity debt, as they've become increasingly comfortable doing over the past decade (**EXHIBIT 6**). The benchmark global index duration was 8.7 years at publication time, vs. 6.7 years, on average, in 2012. Our outlook is for yields to remain low by historical standards, which will keep corporates comfortable issuing longer-term debt.

Duration has risen steadily over the past decade, a lasting change in market composition

EXHIBIT 6: DURATION HAS STEADILY BEEN RISING OVER THE PAST DECADE



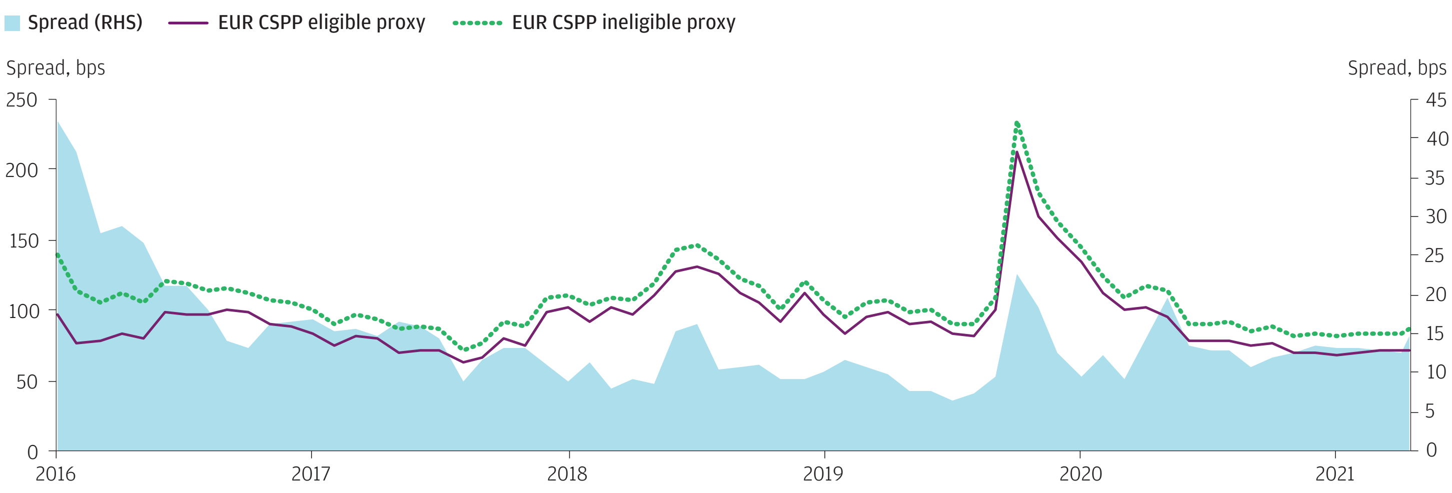
Source: BofA Securities, Bloomberg; data as of April 2021.

Debt levels, which rose as companies issued bonds to raise cash during the sharp 2020 recession (U.S. companies' net debt-to-earnings ratios rose to 2.4x in 4Q 2020), should return to more normal historical levels – a decline that began in the first half of 2021. With economies in various stages of reopening and companies having issued longer-term debt, companies are better equipped to handle any additional COVID-19-related setbacks, and many are now deleveraging.

As noted above, while the Fed's intervention in the IG market has ended, the ECB's has not. In June 2021, the Fed started to unwind its USD 13.5 billion Secondary Market Corporate Credit Facility, launched with a narrowly focused size and time frame to restore liquidity during a period of extreme market stress. Not so the ECB's Corporate Sector Purchase Programme (CSPP), dating to June 2016.[3] We believe the ECB will continue to have an impact on corporate spreads, through explicit buying and/or as markets price in eligible purchases (**EXHIBIT 7**). We reflect this important distinction in our EUR corporate bond spread assumptions, where we believe the fair value spread will be 5bps tighter than it would have been otherwise. We arrive at this estimate based on the average historical spread differential between bonds eligible for ECB purchases and those that are not eligible, of around 15bps – and after adjusting for the proportion of eligible bonds in the overall market. We do not incorporate Fed purchases into our USD bond assumptions because we do not believe the Fed will become a permanent presence in corporate debt markets.

ECB intervention in the IG market is set to continue

EXHIBIT 7: HISTORICAL SPREAD DIFFERENTIAL BETWEEN BONDS ELIGIBLE AND INELIGIBLE FOR CSPP



Source: Bloomberg; data as of September 30, 2021.

[3] The ECB has so far bought EUR 285.3 billion in bonds (equivalent to USD 340 billion at today's exchange rate).

High yield

Our high yield spread assumptions are unchanged for Europe and only modestly decline in the U.S. We leave our default and recovery rate expectations unchanged from last year, at close to, but slightly below, historical averages.

High yield spreads narrowed significantly in 2021 on lower default rates and stable recovery rates – trends we expect to continue in the near term, and which contrast with the unusually low recovery rate of prior years, mostly due to a large number of defaults of highly leveraged energy companies. We do not believe that either recent period is a good predictor for what to expect over the long run. As such, we keep both default and recovery rates close to their long-term historical averages. We do acknowledge that more lenient loan covenants, combined with the rising use of debt to restructure liabilities (now that private equity firms are an important factor in the market) may adversely impact future recovery rates, at the margin.

We also expect the large share of BB rated bonds in the benchmark to continue; as noted, we have incorporated this into our spread assumptions for some time.

The next few years are likely to see lower than normal default rates as revenue and EBITDA growth rebound and financing conditions remain easy. Default rates stayed relatively low during the short recession, thanks to government and central bank support (including to the most vulnerable sectors); we believe this period will mark a low, with default rates returning to near-historical averages over time after topping out at just 6.25% of high yield bonds defaulting in 4Q 2020.

EMERGING MARKET DEBT

In emerging market (EM) hard currency debt, we keep our cycle-neutral spread assumption at 375bps and leave the expected credit loss rate for the index at 0.75%. COVID-19 has been especially challenging for EM economies. Benchmark-weighted credit ratings, which had improved in 2019, have deteriorated since the pandemic began. As a result, an elevated share of issuers continue to have negative outlooks from the major credit rating agencies.

EM countries' budget deficits have ballooned in aggregate, due largely to greater spending on health care and unemployment benefits. Meanwhile, tax revenues have fallen amid weaker activity. While the budget effects should be relatively short-lived, it will take longer for EM countries to meaningfully unwind their debt burdens, accumulated over the last few years and exacerbated by the pandemic recession. Growing pockets of illiberalism and an increasingly protectionist world are likely to be additional headwinds. As a result, we do not expect the average index-level credit rating to exceed pre-pandemic levels over our assumptions horizon.

The benchmark hard currency emerging market debt (EMD) index's starting yield spreads are broadly in line with our long-term fair value assumptions – but some of the apparent value owes to an elevated share of bonds trading at distressed levels. Lebanon is notable: Struggling before the pandemic, the country defaulted in 2020 and now accounts for a tangible share of index spread. As a result, hard currency EMD valuations appear more attractive, on a relative basis, because most other credit assets are trading at spread levels well below our long-term assumptions. As a result, our hard currency EMD return assumption of 5.24% – middling by historical standards – is a fixed income standout this year.

EM local debt

Our overall assumption for EM local bond yield is unchanged at 6.75%, with some underlying regional distinctions: In Asia-Pacific, we make no changes except for China, where we lower our 10-year bond yield assumption, to 3.8%, and our 30-year bond yield assumption by 20bps, to 4.3%. We believe China's bond market liquidity is poised to continue benefiting from inclusion in the benchmark local currency bond indices.[4] Although political headwinds may somewhat limit interest and participation in this market in the future, index inclusion should nonetheless bring additional international investment flows that are likely lower yields somewhat over time. Investors have sought exposure to China's high quality debt for its attractive yields compared with other bond markets of similar credit quality.

In Latin America, we expect yields to fall only gradually from their currently elevated levels, given the headwinds associated with an increase in COVID-19-related government spending, a rise in inflationary pressures and an upswing in political volatility.

In EM corporates, less has fundamentally changed, and we keep our spread assumptions unchanged from last year, at 400bps, after an adjustment in the last edition to incorporate high yield bonds' growing share of the JPM Corporate Emerging Market Bond Investment Grade (CEMBIG) index. Their share has stabilized at close to 45% of the index (up from less than 20%, on average, before 2008).

[4] China was added to the Bloomberg Global Aggregate Index as of April 2019 and to the J.P. Morgan Global Bond Index – Emerging Market (JPM GBI EM) as of April 2020. China's current weight in the JPM GBI EM, 10%, is the maximum weight for an individual country.

GREEN BONDS: GROWING ATTENTION, RECOGNITION AND ADOPTION BY MAJOR CENTRAL BANKS

Milestones have been reached quickly in the rapidly expanding market for green bonds, a market defined by the issuers' commitment to use funds raised for sustainable projects.[*] One landmark: USD 240 billion in green bonds were issued globally in 2021 (through September), after USD 260 billion issued globally in 2020. These bond sales had vaulted the overall market value of green bonds outstanding over the USD 1 trillion threshold, at publication time.[**] As green bonds attract increasing attention and institutional adoption, central banks are also leaning in to purchase green securities, offering support to this politically important market.

European Central Bank President Christine Lagarde used the institution's 2021 strategic review to push for more inclusion of green bonds in the ECB's mandate. The Bank of Japan announced in July 2021 its first foray into the space with a green lending plan. We believe central bank involvement is a crucial step in the market's development for two reasons. Central bank purchases:

INTRODUCE A SIZABLE SET OF BUYERS THAT ARE NOT PRICE SENSITIVE, LIKELY ADDING A SPREAD DISCOUNT

The consensus finding of many studies is that corporate green bonds have an associated spread discount of 5bps–10bps.[†] We believe this is fair and should hold true in the future; the discount could even increase if central bank purchases grow. The effect of ECB purchases of European corporate bonds since 2016 may be a useful analogy. The spread between corporates eligible for ECB purchase and those that are not has persistently remained 10bps–15bps for over five years. We believe it is not unreasonable to expect a similar dynamic to play out with green bonds.

SEND AN IMPORTANT SIGNAL TO THE FINANCIAL COMMUNITY AS A WHOLE

This indirect effect, while harder to quantify, could be just as impactful. Climate change has become ever more present in our lives, bringing with it a rise in investor awareness of environmental – and social – issues. The announcements from central banks around the world in support of green bonds are steps along this road that could spur further green and social bond[††] adoption through new regulation, innovation in financial products – and simply greater understanding as market participants read more articles like this one.

The social issues (like essential workers' vulnerability and the rekindling of movements for justice) highlighted during the pandemic, and the indelible images of the largest forest fires ever, among other events in recent years, have brought home for investors the need to incorporate nonfinancial risks into their investment decision-making process. Green and social bonds could be one part of the solution.

* While a uniform, international definition of a green bond does not exist, as a general principle they are issued to finance sustainable or environmentally sound projects.

** Bloomberg, September 9, 2021.

† For example, work by J.P. Morgan Securities, 2021.

†† Social bonds are a small but growing area of finance where bond payments are linked to social outcomes.

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