Private Bank

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Bond Market Monthly

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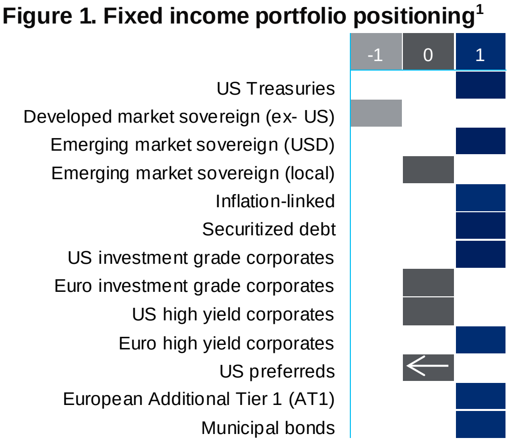
Turn that frown upside down

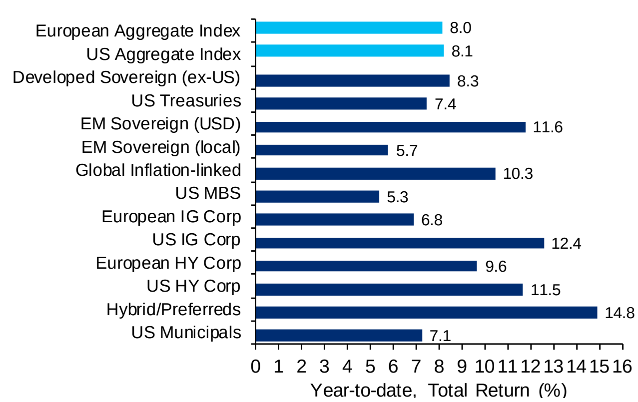
- The growth in negative yielding bonds has changed the global fixed income landscape. Thanks to persistent negative interest policies in Europe and Japan, over 50% of the global bond market (ex-USD) now trades with yields below zero. Though part of the recent rally can be blamed on seasonal illiquidity, market uncertainties around growth and trade have also raised concerns.
- Global central bank policy is expected to stay accommodative, as the European Central Bank (ECB) and US Fed cuts policy rates. The newly announced restart of the ECB's asset purchase program will also add technical support to already low yields. We favor adding duration exposures, despite flat yield curves, preferably in US investment grade corporates and municipal bonds.
- Though we are underweight low/negative yielding bonds in our global asset allocation, certain strategies can "turn that frown upside down". With US rate differentials versus non-US markets wide, the cost to hedge US dollar exposure has become expensive. Conversely, hedging some currencies back to USD has cheapened. Using derivative strategies, investors can hedge currency exposures back into USD and potentially generate *positive* carry. Based on suitability and risk tolerance, these strategies can produce higher yields than what is found in the US bond market.
- In this edition, we also discuss the richness on the short-end of the US municipal bond curve, and how the duration of the market has reached historically low levels. We share detailed thoughts on the US high yield bank loan space, while reminding investors that the volatility in Argentina does not paint a wide brush across the emerging markets. Finally, we touch on the US preferred market, where remarkable YTD performance leaves valuations less attractive.

Figure 1. Fixed income portfolio positioning[1]



Source: CPB as of September 13, 2019. -1=Underweight, 0=Neutral, 1=Overweight. 1) Views on positioning are to be used within a portfolio context and can be either short-term (1-3 months) or long-term (12-18 months). Overweight implies a positive view, while underweight implies a negative view. A neutral view implies our confidence is neither positive nor negative.

Figure 2. Market performance, year-to-date (local currency, %)



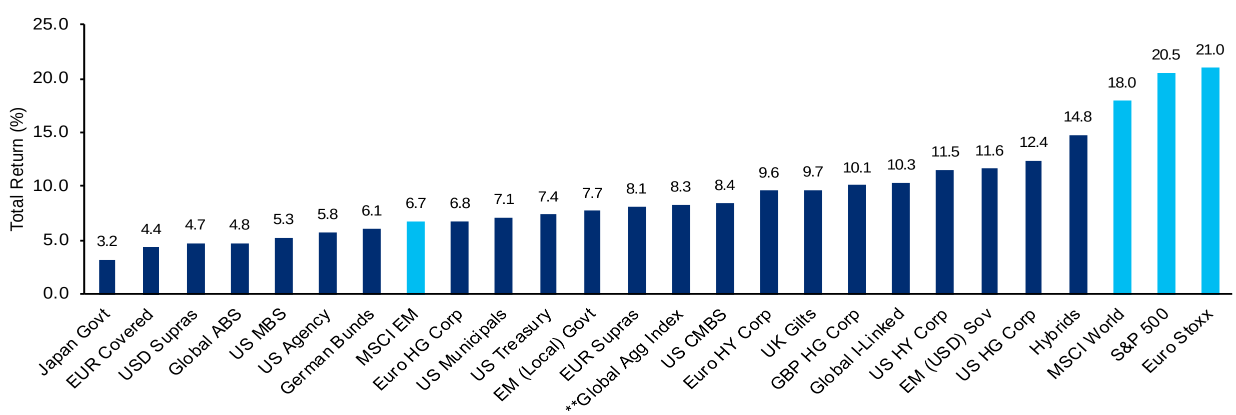
Source: Bloomberg Barclays Indices; Merrill Lynch as of September 13, 2019. Light blue indicates total return on benchmark indices. Dark blue indicates total return on sub-indices. Past performance is no guarantee of future results. Real results may vary. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only.

Market performance views and recommendations[1]

Sectors	Positioning[2]	Focus comments/recommendations
US Treasuries	Overweight	Expect the Fed to cut at least 25bp at its September 18 meeting; Lingering trade uncertainties and dovish central bank policy expected to keep yields low; Favor adding duration in high quality bonds to balance portfolio risks
Developed market sovereigns (ex-US)	Underweight	ECB asset purchases is likely to keep rates low while having a positive impact on euro spreads; However, we continue to avoid negative yielding bonds and remain underweight in favor of higher yielding USD bonds
Emerging market debt	External – Overweight Local – Neutral	**External debt:** USD EM still offers some of the best relative value in global fixed income; We stress the importance of global diversification when investing in EM, as idiosyncratic events occur from time to time (i.e. Argentina) **Local bonds:** Yields have fallen to lowest levels on record, though EM FX has weakened; Persistent USD strength may continue to weigh on unhedged returns
Inflation-linked debt	Overweight	10yr US inflation breakevens have cheapened along with crude oil, moving further below long-term averages; Cheap valuations offer an opportunity to hedge against trade wars and the potential impact on US consumer prices
Securitized debt	Overweight	**US agency MBS:** Spreads have widened as rates have fallen; Yields are attractive when compared to similarly rated US IG corporate bonds **Non-agency RMBS/ABS:** Consumer ABS offers low volatility and compelling yields versus similar rated/duration IG corporates; Non-agency RMBS displays lower correlations to rates and equity; Offers exposure to US households where leverage is near all-time lows
High grade corporates	US IG – Overweight Euro IG – Neutral	**US IG:** We continue to favor duration extension strategies; Best value in 5-10 year maturities; Tactically favor defensive sectors, as trade and growth concerns linger **Euro IG:** The restart of ECB corporate bond purchases is expected to drive a significant tightening in already tight spreads; Historical low yields keeps us neutral
High yield bonds/loans	US HY – Neutral Euro HY – Overweight	**US HY:** Loans have underperformed bonds in the YTD, though offer more attractive yields and lower price volatility around risk-off periods; Prefer higher quality in both **Euro HY:** The technical support from the restart of CSPP will likely be strong, while yields are higher than most in the region; Maintain our overweight as the demand for yield drives spreads tighter and yields lower
Hybrid debt securities[3]	US prefs. – Neutral Euro AT1's – Overweight	**US prefs:** Downgrade to neutral based on rich valuations; Supportive technical dynamics remain intact; Favor structures with longer call protection **Euro AT1's:** Valuations in USD European AT1s still offer good relative value vs. both US and euro HY bonds; We find yields compelling, especially in a world where generating cash flow is becoming harder to achieve
Municipal bonds	Overweight	Despite high valuations on the short-end, longer-dated bonds continue to offer some of the best values in the US muni market; We favor extending duration and find the best value in the 15-20-year part of the curve

Source: Citi Private Bank Global Fixed Income Strategy as of September 13, 2019. 1) Views are in the context of a fixed-income only portfolio; 2) Views on positioning are to be used within a portfolio context and can be either short-term (1-3 months) or long-term (12-18 months). Overweight implies a positive view, while underweight implies a negative view. A neutral view implies our confidence is neither positive nor negative; 3) Hybrids are securities that generally combine both debt and equity characteristics, and can include preferred stock, fixed-to-floating rate bonds or other convertible debt.

Figure 3. Global fixed income and select equity index returns, year-to-date (local currency, %)

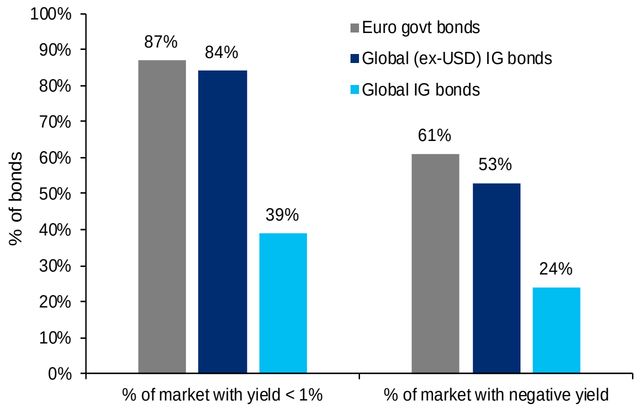


Source: Bloomberg Barclays Indices, Merrill Lynch, MSCI as of September 13, 2019. Light blue indicates an equity index. Global returns shown in hedged USD terms. "**Global Agg Index" is benchmark global fixed income index. Indices are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment. Index returns do not include any expenses, fees or sales charges, which would lower performance. Past performance is no guarantee of future results. Real results may vary.

Asset class update: Global rates and central bank policy

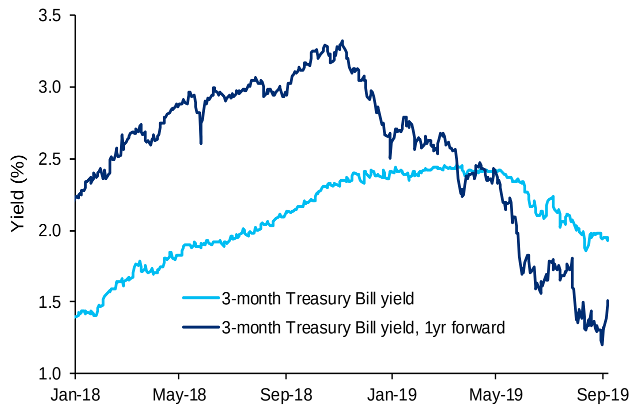
US rate outlook

Figure 4. Negative yields have changed the bond landscape



Source: FTSE Russell as of September 12, 2019.

Figure 5. Forward markets imply lower yields ahead

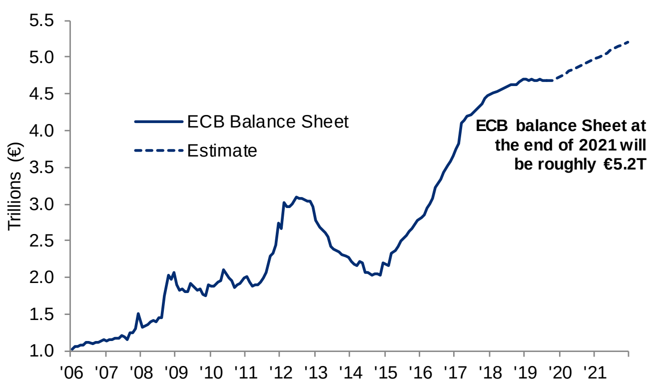


Source: Bloomberg as of September 12, 2019.

- Amid contentious trade rhetoric and poor market liquidity, 10-year US Treasury (UST) yields reach 1.42% (intraday) in August. This was its lowest level since 2016, coming within 10bp of its all-time low of 1.32%. At the same time, the yield curve inversion between 3m T-Bills and 10-year UST deepened to -50bp, its deepest inversion since May 2007. Rates markets have since cooled, though we believe the underlying tone remains lower for longer.
- As we discussed in our recent strategy bulletin, four important factors can continue to weigh on US rates. One, US bond market yields remain globally attractive. Two, negative interest rate policy has created a growing universe of negative yielding bonds **(Fig. 4)**. This dynamic leaves little else for income-oriented investors to go but the US bond market. Three, global central banks are likely to remain accommodative, with additional rate cuts expected in the US and Europe. Four, trade friction is likely to persist, though impossible to predict, which can weigh on investor sentiment.
- **US Fed outlook.** We expect the US Fed to cut policy rates 25bp to a range of 1.75 – 2.00% on September 18. Unless market expectations change, we would expect additional cuts this year, pushing short-term rates lower, including LIBOR. Currently, futures markets price in two rate cuts through the end of the year.
- **Extend out of cash.** Sitting on too much cash or rolling T-Bills runs the risk of frequent reinvestment at lower rates. Despite being a weak predictor of where future rates will be, the forward market shows 3M T-Bill yields, one-year forward at 1.4% or 50bp below current spot levels **(Fig. 5)**. If this were to occur, investors would be better served investing in a 1-year note today.
- **To hedge, or not to hedge.** In our view, a flat/inverted yield curve offers a unique opportunity to hedge interest rate risks today. This could include either hedging floating-rate liabilities, or rate exposures in financial assets. Using capital market strategies, there are a number of ways one could use hedges to manage their investment portfolio. Of course, one should always consider to hedge when they can, not when they have to.

European rates

Figure 6. ECB balance sheet is set to expand in November



Source: Haver Analytics as of September 12, 2019.

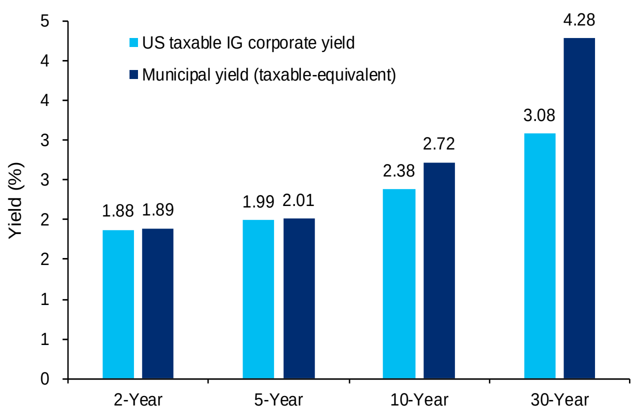
- On September 12, the European Central Bank (ECB) followed through on a widely expected 10bp rate cut. This brings the current deposit rate down to -50bp. At the same, the ECB lowered their growth and inflation forecasts for the current and following years, while introducing a two-tier deposit system to offset the impact of negative rates on bank profitability. Forward guidance on rates was also left open, now dependent on progress on inflation.
- The most important announcement, however, was the restart of their asset purchase program (APP), set to begin in November, at a pace of €20bn/month. Though lower than expected, the ECB will keep the program open-ended, expanding the balance sheet until "shortly before" interest rates will be raised **(Fig. 6)**. No other details were provided, such as raising cap limits on sovereigns.
- **Investment strategy:** ECB APP is likely to make expensive euro sovereign bonds more expensive, while flattening yield curves. In turn, this is also expected to keep relative value heavily in favor of US dollar bonds, while supporting lower yields overall. Market expectations still imply more rate cuts in the future, though not likely at their October 24 meeting. See our latest European strategy bulletin for more details on the ECB announcement.

Past performance is no guarantee of future results. Real results may vary.

Asset class update: US municipal bonds

Short-end munis are expensive

Figure 7. Muni yields versus US IG corporate yields

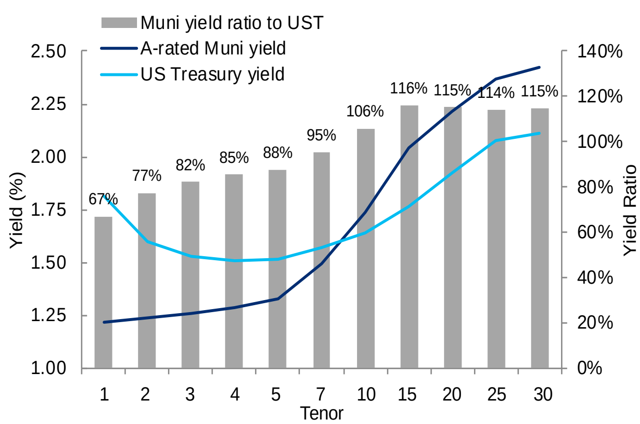


Source: Bloomberg Barclays Indices, Bloomberg as of September 12, 2019.

- US municipal bond investors have enjoyed another year of solid performance, as falling US Treasury yields have helped boost returns (+7.5% YTD). At the same time, rising effective tax rates for high-income earners has created a massive increase in tax-exempt bond demand. Indeed, weekly muni bond fund inflows have averaged $1.2bn, for a total combined inflow of $40 billion this year.
- With bond supply unable to keep pace with rapid demand, fund managers have been forced to put money to work at unattractive levels. Most notably in shorter-dated muni bonds where valuations have become expensive. For example, 2-year AAA muni yield ratios are now at historical low levels (~65%). Even on a taxable-equivalent yield basis, short-term munis now offer little pick-up versus UST or high quality corporate bonds **(Fig. 7)**.
- **Investment strategy:** In our view, muni investors should consider taxable options on the short-end (< 3-years). However, the relative value in certain high tax-states (i.e., California, Connecticut), or in particular lower-quality investment grade issuers, may still favor US municipals over taxable bonds. Supply/demand technical may weaken some in September, but we expect future supply to struggle to keep pace with demand for the remainder of the year.

Better value in longer maturities

Figure 8. Best value between 15-20 years

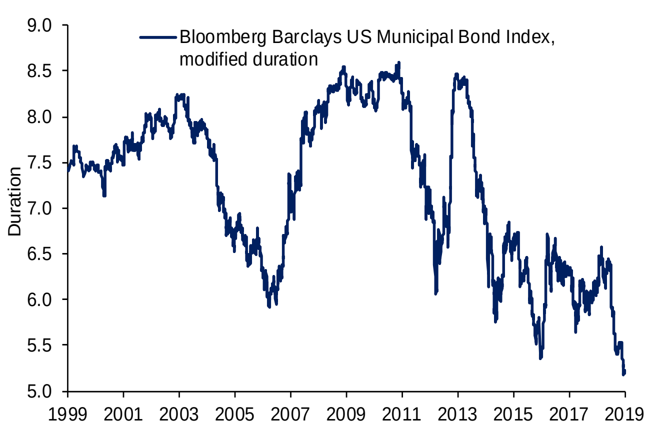


Source: Bloomberg as of September 12, 2019.

- Despite high valuations on the short-end, longer-dated bonds continue to offer some of the best values in the US muni market. Indeed, longer maturities have cheapened versus UST, after reaching historically expensive levels last May. As mentioned in the latest Muni Watch, 10-year yield ratios are now near 85%, close to its highest levels this year while 30-year ratios have been flirting again near 100%.
- For some time now, we have highlighted the steeper muni curve, relative to the UST curve, especially between 10 and 30-year maturities. Over the last 12 months, declining bank demand (from lower corporate tax rates) had cheapened valuations versus UST and the rest of the muni curve. Though the UST/muni curve relationship has narrowed, this is still the case today. Current pricing shows best values between 15-20yrs to maturity, where average A-rated general obligation yields of 2.15% are 115% of UST yields **(Fig. 8)**.

Benchmark duration has fallen sharply

Figure 9. Muni benchmark duration at a historic low



Source: Bloomberg Barclays Indices as of September 12, 2019.

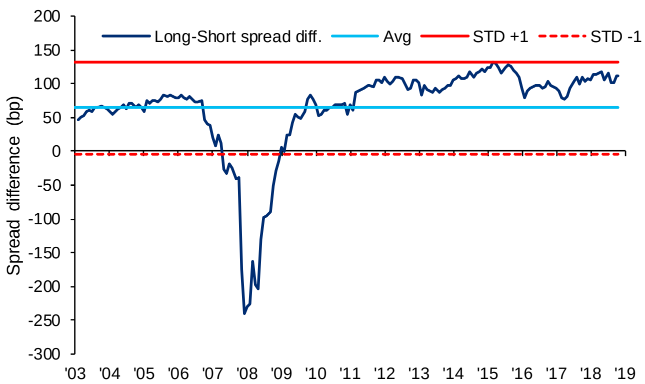
- It is not surprising that the drop in US rates has had a similar effect on muni prices. Today's average benchmark price of $114 is seven points higher than the November 2018 peak in yields. Premiums (or bond prices above $100) on coupons less than 4.0% are now the norm, with 99% of all coupons 4% or less trading at a premium. Back in November, only 50% of these coupons were at a premium.
- A notable consequence of the rise in muni prices has been the decline in benchmark duration. Considering the US muni market is 65% callable, the majority of these bonds are now priced as if they will be redeemed upon their first call date. In turn, this has pushed the duration of the muni market from above 6.0, down to a historical low of 5.2 **(Fig. 9)**. With duration as an indicator of interest rate sensitivity, today's muni market (in aggregate) has arguably never been less sensitive to changes in US bond yields. At the same time, this can also inhibit performance (vs. UST), if US rates continue to rally.

Past performance is no guarantee of future results. Real results may vary.

Asset class update: Corporate credit – Investment grade

US IG corporates – favor duration extension

Figure 10. US IG corporate spread curves steep

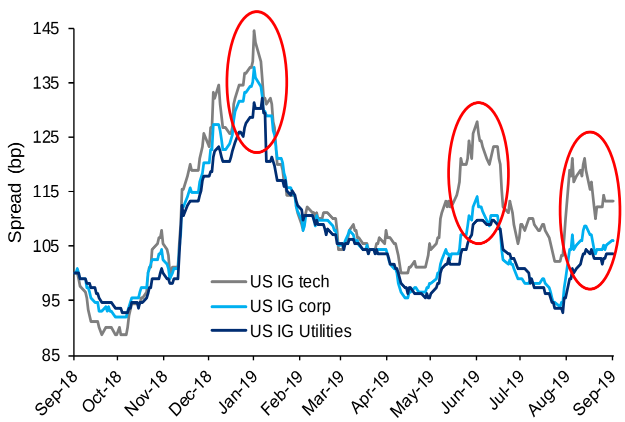


Source: Bloomberg Barclays Indices as of September 12, 2019.

- US IG corporates are off to their best year since 2009, gaining over 14% YTD. This is largely from the drop in UST yields, which has helped push IG yields down 140bp on the year. Currently at 2.9%, benchmark yields are now only 30bp from their all-time lows. However, with credit curves flattening, short-term corporate yields remain historically attractive. At 2.2%, 1-3 year corporate yields are in the 70% percentile when looking over the last 10 years.
- When looking at valuations, it's quite the opposite. Short-dated IG spreads near 50bp are in its 10th percentile and are one of the most overvalued parts of the IG corporate space. Alternatively, spreads widen as you move further along the yield curve, resulting in a *steep* spread curve. Indeed, the relationship between short and long-dated corporate spreads is near its steepest level of the last decade **(Fig. 10)**.
- **Investment strategy:** Despite flat yield curves, IG corporates are not as flat/inverted as UST curves. Along with steep spread curves, we favor adding duration. In our view, best value can be found between 5-10 years. We favor utilities, financials and non-cyclicals that tend to exhibit outperformance in periods of risk-aversion.

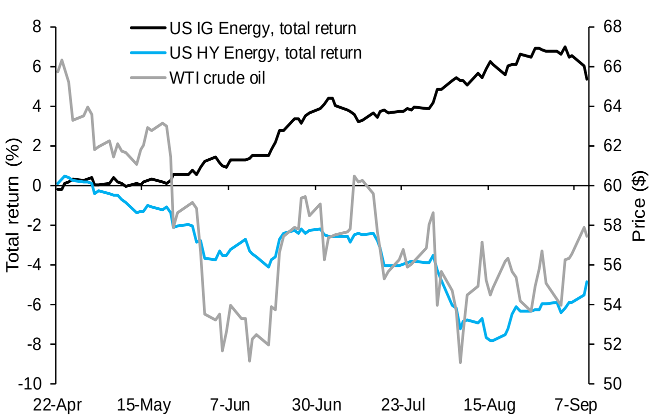
Trade war impact on credit sectors

Figure 11. Tech and utility spreads as trade tensions rise



Source: Bloomberg Barclays Indices as of September 12, 2019.

Figure 12. IG energy is less effected by oil price volatility



Source: Bloomberg Barclays Indices as of September 12, 2019.

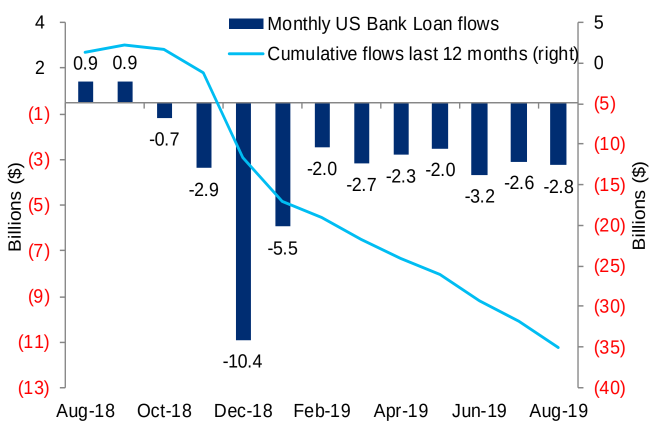
- Persistent US and China trade tensions have added layers of uncertainty to global markets. Headlines have whipsawed risk-assets and interest rates nearly every day. From a sector perspective, technology has the largest share of its revenues generated from China. As a result, tech spreads have underperformed the broader corporate bond market in each period of rising trade tensions over the last 12 months. Conversely, the US utility sector receives the lowest share of revenues from China. In turn, these issuers have outperformed **(Fig. 11)**.
- Despite the sensitivity around trade, the technology sector still has one of the highest credit ratings in the US corporate bond market (A1/A+). This is largely due to stable cash flows and resilient earnings power. As such, sector spreads are generally tighter than the US corporate benchmark, while issuers display characteristics that are more defensive. For example, during the 2008-09 Global Financial Crisis and European Sovereign Debt Crisis in 2011-12, tech noticeably outperformed.
- **Investment strategy:** Though volatility around trade is expected to persist, we would be opportunistic if tech spreads underperform. We also continue to favor the utility sector, which tends to be better insulated from external shocks attributed to global trade wars. Most US utilities are regulated, where excess cash from earnings typically goes towards interest payments and dividends to shareholders, rather than expanding.
- Despite heightened oil volatility, the IG energy sector has still produced healthy gains this year (+13.5%). Though we are neutral the sector, we would prefer to play higher oil prices through IG issuers, than HY. IG energy is characterized by a more diversified revenue stream and tends to be less directly tied to oil price swings than their HY counterparts **(Fig. 12)**.

Past performance is no guarantee of future results. Real results may vary.

Asset class update: Corporate credit – US high yield and Europe

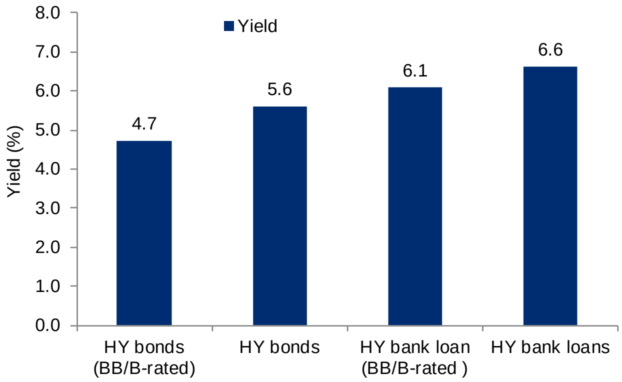
US high yield bank loans

Figure 13. HY bank loans have seen significant outflows



Source: Lipper as of September 5, 2019.

Figure 14. HY bank loan yields are higher than HY bonds

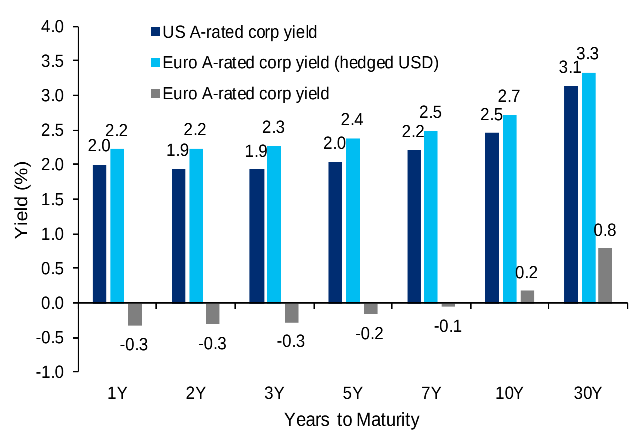


Source: Bloomberg Barclays Indices, S&P as of September 12, 2019.

- US HY bank loan performance has lagged the HY bond market all year, with the S&P loan index gaining 6.5%, versus 11.5% for HY bonds. While 500bp of underperformance is meaningful, bank loan returns were still produced with half the price volatility, with LIBOR rates falling, (loans are floating-rate assets) *and* with 42 straight weeks of mutual fund and ETF loan outflows **(Fig. 13)**.
- Offsetting the retail outflows has been the rise in Collateralized Loan Obligation (CLO) supply. 2018 was a record year for CLO supply, with volumes exceeding $130 billion. In fact, over the last few years, annual CLO issuance has averaged over $100 billion, with the total size of the CLO market now eclipsing $650 billion. Just for scale, the CLO market was $80 billion at the end of 2013.
- Of concern to many investors is the decline in issuer restrictions, or covenants, that are typically found in bank loans. Otherwise known as "cov-lite", these loans now make up 85% of the market and 80% of total new volume. While there should be some concern about the lack of restrictions for loan borrowers, we think they are somewhat exaggerated. Some argue that fewer covenants can actually keep loan default rates low, while cov-lite loans also tend to trade with tighter LIBOR spreads.
- We prefer to focus more on declining debt cushions, or the amount of unsecured debt to buffer secured lenders in the event of default. With loan issuance soaring over the 12 months, capital structures have become "top heavy". With historical recovery values around 75%, lower debt cushions can imply that recovery values may be below these levels in the next default cycle.
- **Investment strategy:** We continue to favor HY bonds and loans, but prefer to take a higher quality bias in both. Currently HY loans offer more value, as "all-in" yields (LIBOR plus spread) are higher than HY bonds. BB/B-rated bank loan yields are near 6.1%, versus 4.7% for HY bonds **(Fig 14)**. With market uncertainties building, we also like the lower price volatility in loans. As we've seen repeatedly over the last several years, when risk aversion builds, its HY bonds which tends to decline more in price.

Value in low/negative yielders?

Figure 15. Currency markets can create yield pick-up



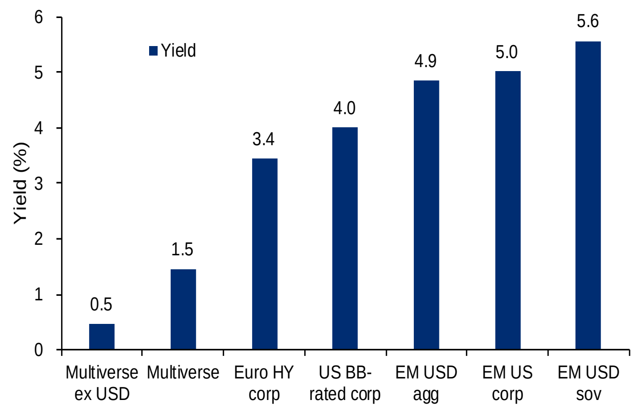
Source: Bloomberg Barclays Indices, Bloomberg as of September 12, 2019.

- The average Eurozone IG corporate bond yield is 0.4%, though briefly touched 0.23% in late August. When adjusting for the difference in duration, euro IG index yields are 10x lower than what is found in USD corporate bond markets. With yields so low, it's a difficult proposition for income-oriented investors to consider. This is why CPB's Global Investment Committee holds deep underweights to low/negative yielding markets.
- However, wide US interest rate differentials have created a unique opportunity. With the demand for US dollars strengthening over the last year, the cost to hedge USD has become expensive. Conversely, hedging other currencies back to USD is cheap. Using derivative strategies, investors can hedge certain currency exposures back to USD and potentially generate positive carry. Currently, 12-month forward euro contracts imply a positive carry near 2.6%. This could turn a 1-year single-A euro corporate bond yielding -0.3% into a positive 2.2% **(Fig. 15)**.
- **Investment strategy:** Though we are underweight Eurozone debt markets, we still advocate global diversification. Credit fundamentals in Europe are healthy, despite the macro weakness. Though derivative strategies can be complex, there are ways to simplify the opportunity, such as investing in a euro denominated mutual fund that offers a USD share class.

Asset class update: Emerging markets & preferred stocks

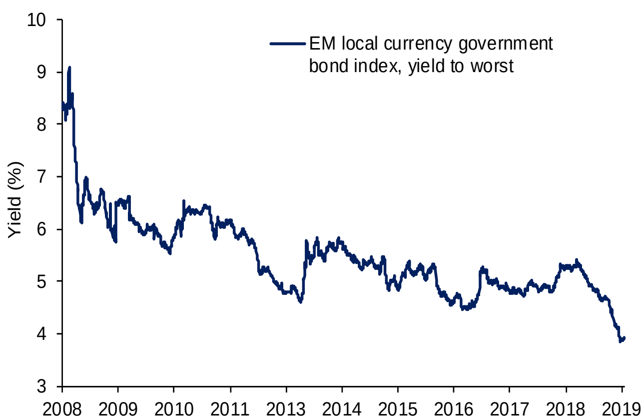
Global emerging market (EM) bonds

Figure 16. External EM USD yields well exceed DM bonds



Source: Bloomberg Barclays Indices as of September 12, 2019.

Figure 17. Local EM yields have reached historic lows

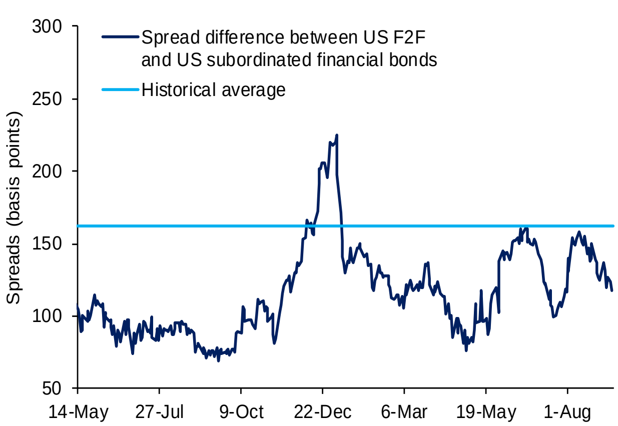


Source: Bloomberg Barclays Indices as of September 12, 2019.

- **EM hard currency:** As developed market (DM) yields drop, the relative value proposition in EM increases. Average global EM USD benchmark yields at 4.9% are 340bp higher than DM markets (1.5%), or 440bp higher than DM markets ex-USD **(Fig. 16)**. Latin America has the highest regional yield (~7.5%), but also comes with higher volatility. On the other hand, average Asia EM USD yields are closer to 3.4%, but offers much more price stability.
- **Investment strategy:** We stress the importance of global diversification when investing in EM, as idiosyncratic events occur from time to time. For example, while prices on Argentina external bonds dropped 40 points in August, there was no noticeable impact to other EM markets. In fact, global USD EM aggregated benchmarks still managed to produce a slight gain in August (+10bp). Year-to-date (YTD), global USD EM has gained 10%.
- **EM local currency:** EM central banks have generally been cutting rates, as inflation pressures subside. Helped by the rally in global yields, local EM bond yields have fallen 150bp since last October to an historical low of 4.0% **(Fig. 17)**. Despite the drop in yield, local EM (unhedged) has underperformed external EM debt by 480bp YTD (5.7% vs. 10.5%). This is largely due to currency volatility, as EM FX has weakened roughly 6.0% since February.
- **Investment strategy:** There still appears to be capacity for some EM central banks to cut policy rates further. However, attractive US yields and building global uncertainties may keep the demand for USD elevated. In turn, creating a headwind for EM FX. As such, opportunities in local EM bond markets are likely to be more selective and tactical.

US preferred stocks

Figure 18. Valuations are no longer cheap



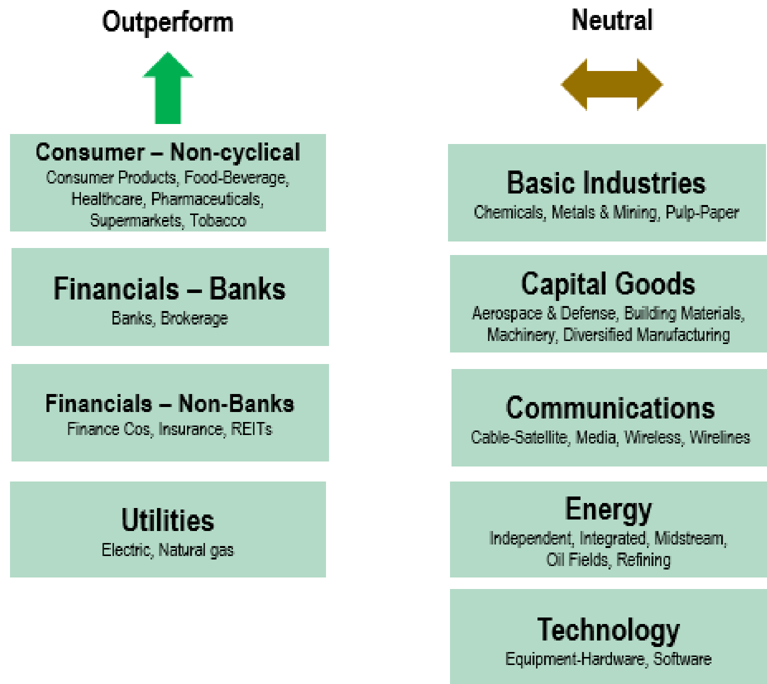
Source: Bloomberg Barclays Indices, Bloomberg as of September 12, 2019.

- Since January, Treasury curve flattening has supported double-digit gains in US bank preferreds (+14% YTD). Though US preferreds have a positive correlation to equities, performance has a historical beta 5x times lower than US bank stocks (both when compared to the S&P 500). Today, average preferred yields around 4.0% are at their historical lows, although this still equates to a spread pick-up of nearly 260bp, or 50bp wider than BB-rated HY bonds.
- **Investment strategy:** Purely based on valuations, we bring our view on US preferreds back to neutral. After moving to an overweight in July, US fixed-to-float preferreds have gained 4.0%. Since, average yields have dropped 75bp, with spreads tightening 50bp. Yields still remain favorable in relative terms, but the spread relationship versus subordinated bank debt has narrowed back towards 100bp **(Fig. 18)**.
- From a fundamental perspective, there is still much to like. Despite risks of an economic slowdown, we believe US banks are in a much stronger position. That said, with US yields likely to remain lower for longer, we favor structures with longer call protection. Longer calls also tend to offer higher yields. Finding value in new issuance can be "hit or miss", though some recent deals have come to market at attractive levels. The only problem for investors is they do not come often enough.

Past performance is no guarantee of future results. Real results may vary.

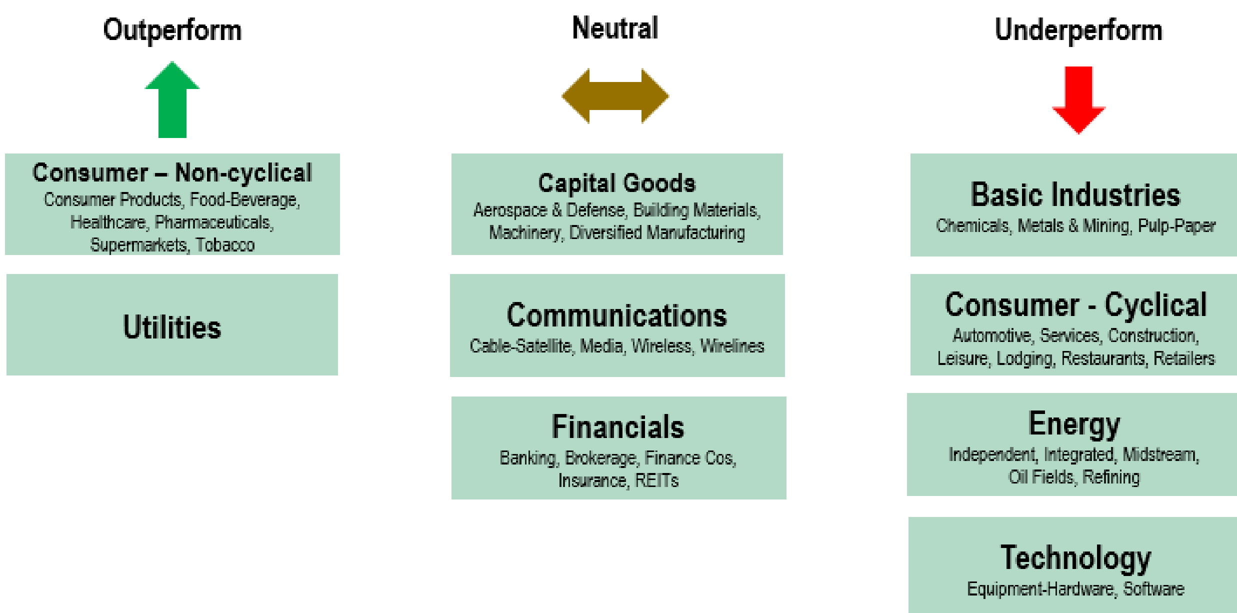
Corporate sector views – US markets

Figure 19. US Investment Grade Corporates – Summary of sector views



Source: Citi Private Bank Global Fixed Income Strategy, Bloomberg Barclays US Intermediate Corporate Bond Index as of September 12, 2019. The expressions of opinion are not intended to be a forecast of future events or a guarantee of future results. Arrows imply our expectations of sector performance versus the Bloomberg Barclays US Intermediate Corporate Bond Index. Up arrow = outperform, Sideways arrow = market perform, Down arrow = underperform

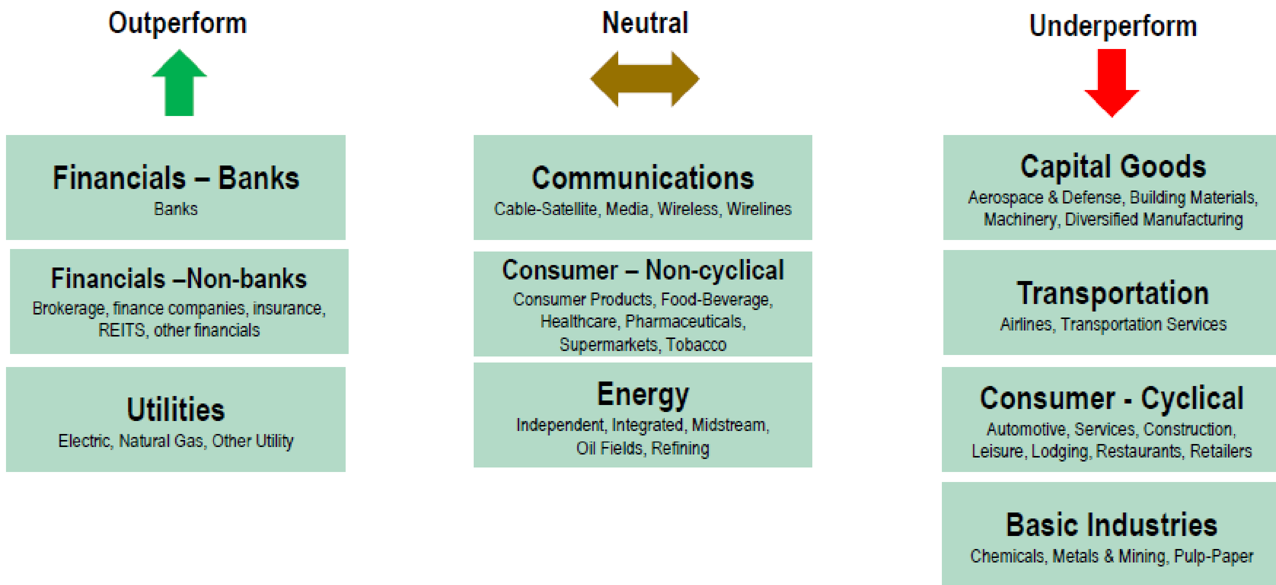
Figure 20. US High Yield Corporates – Summary of sector views



Source: Citi Private Bank Global Fixed Income Strategy, Bloomberg Barclays US Corporate High Yield Bond Index as of September 12, 2019. The expressions of opinion are not intended to be a forecast of future events or a guarantee of future results. Arrows imply our expectations of sector performance versus the Bloomberg Barclays US Corporate High Yield Bond Index. Up arrow = outperform, Sideways arrow = market perform, Down arrow = underperform

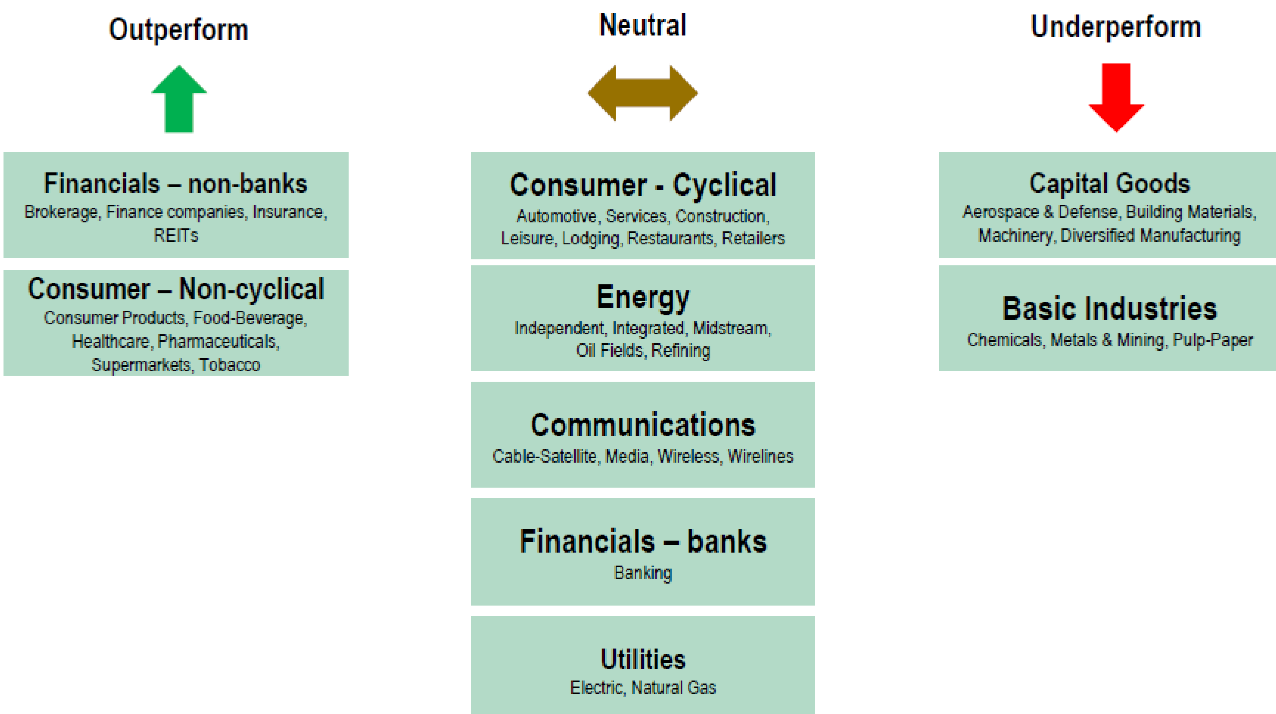
Corporate sector views – European markets

Figure 21. EMEA Investment Grade Corporates – Summary of sector views



Source: Citi Private Bank Global Fixed Income Strategy, Bloomberg Barclays Euro-Aggregate Corporate Statistics Index as of September 12, 2019. The expressions of opinion are not intended to be a forecast of future events or a guarantee of future results. Arrows imply our expectations of sector performance versus the Bloomberg Barclays Euro-Aggregate Corporate Statistics Index. Up arrow = outperform, Sideways arrow = market perform, Down arrow = underperform

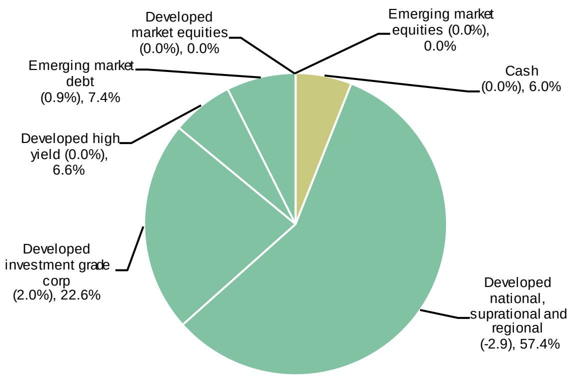
Figure 22. EMEA High Yield Corporates – Summary of sector views



Source: Citi Private Bank Global Fixed Income Strategy, Bloomberg Barclays Euro High Yield Corporate Bond Index as of September 12, 2019. The expressions of opinion are not intended to be a forecast of future events or a guarantee of future results. Arrows imply our expectations of sector performance versus the Bloomberg Barclays Euro High Yield Corporate Bond Index. Up arrow = outperform, Sideways arrow = market perform, Down arrow = underperform

Fixed income tactical asset allocations

Figure 23. Fixed income allocation – Risk Level 1*



Figures in brackets are the difference versus the strategic benchmark

- Cash
- Global fixed income
- Global equities

Source: Citi Private Bank Global Investment Committee, August 15, 2019.

Core Positions

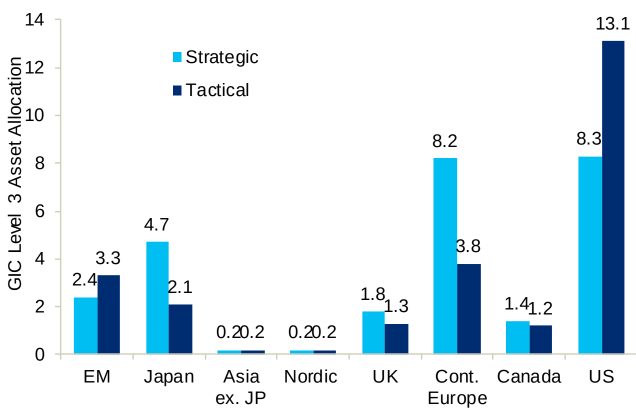
Within fixed income, developed government debt has an underweight position of -2.9% with an overweight in US government fixed income. Developed corporate investment grade fixed income has an overweight position of +2.0% driven by overweight in US corporate investment grade fixed income.

Emerging market debt has an overweight position of +0.9% with both Asia and LatAm debt at overweight positions.

* Risk level 1 is designed for investors who have a preference for capital preservation and relative safety over the potential for a return on investment. These investors prefer to hold cash, time deposits and/or lower risk fixed income instruments.

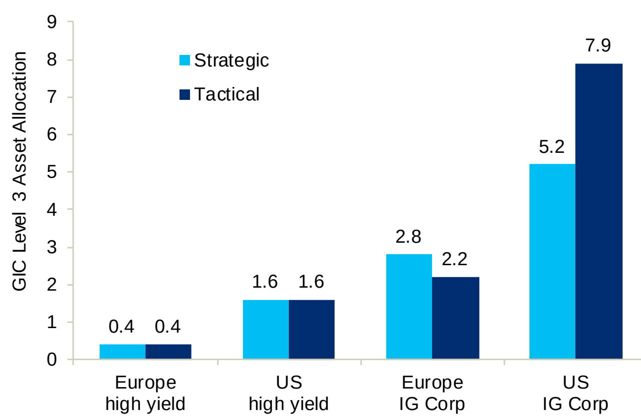
Strategic = benchmark; tactical = the Citi Private Bank Global Investment Committee's current view; and active = the difference between strategic and tactical.

Figure 24. Fixed income sovereign tactical allocation (Level 3)**



Source: Citi Private Bank Global Investment Committee, August 15, 2019.

Figure 25. Fixed income credit tactical allocation (Level 3)**



Source: Citi Private Bank Global Investment Committee, August 15, 2019.

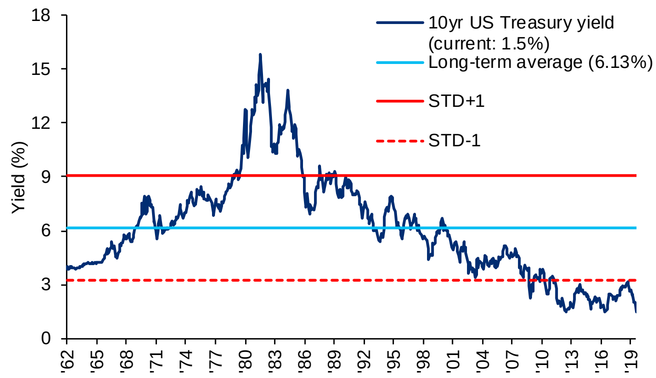
**Risk Level 3 is designed for investors with a blended objective who require a mix of assets and seek a balance between investments that offer income and those positioned for a potentially higher return on investment. Risk Level 3 may be appropriate for investors willing to subject their portfolio to additional risk for potential growth in addition to a level of income reflective of his/her stated risk tolerance.

Strategic = benchmark; tactical = the Citi Private Bank Global Investment Committee's current view; and active = the difference between strategic and tactical.

Opinions expressed herein may differ from the opinions expressed by other businesses or affiliates of Citigroup, Inc., and are not intended to be a forecast of future events, a guarantee of future results or investment advice, and are subject to change based on market and other conditions. In any case, past performance is no guarantee of future results, and future results may not meet our expectations due to a variety of economic, market and other factors. Further, any projections of potential risk or return are illustrative and should not be taken as limitations of the maximum possible loss or gain.

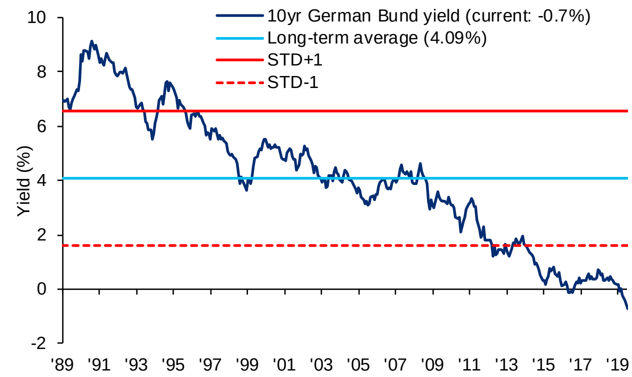
Long-term historical government bond yields

Figure 26. US government bond yield



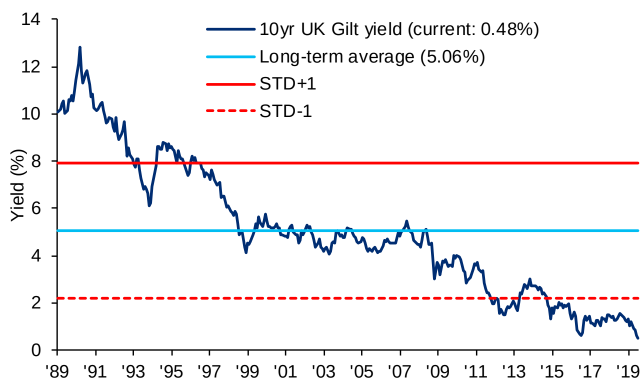
Source: Bloomberg.

Figure 27. German government bond yield



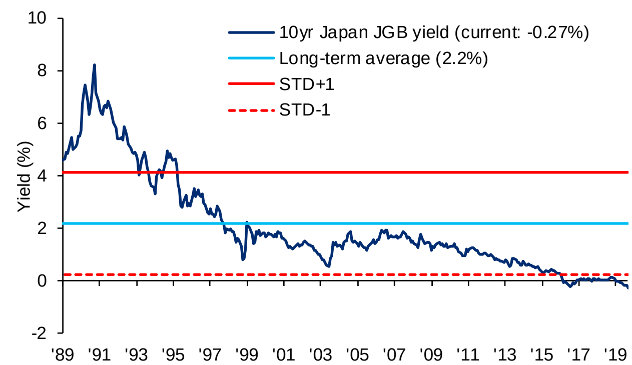
Source: Bloomberg.

Figure 28. UK government bond yield



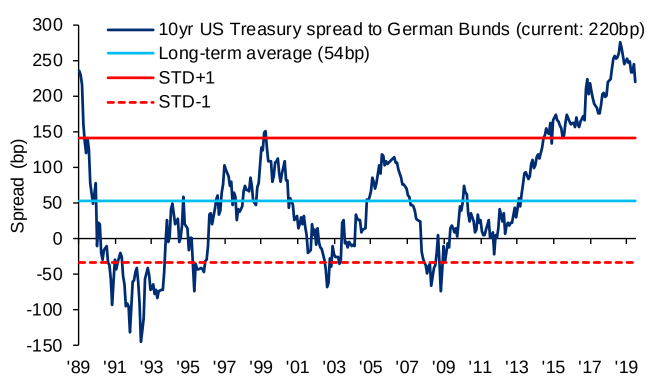
Source: Bloomberg.

Figure 29. Japan government bond yield



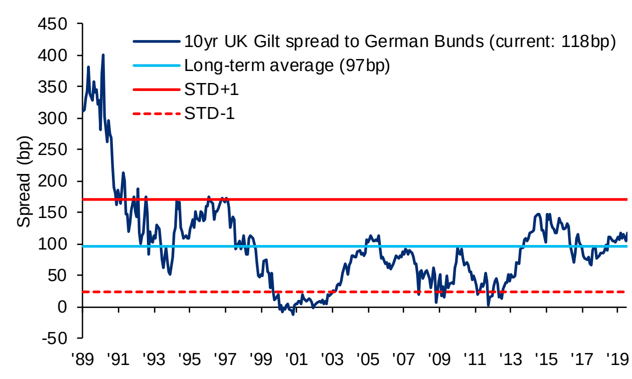
Source: Bloomberg.

Figure 30. 10yr US Treasury spread to German Bunds



Source: Bloomberg.

Figure 31. 10yr UK Gilt spread to German Bunds

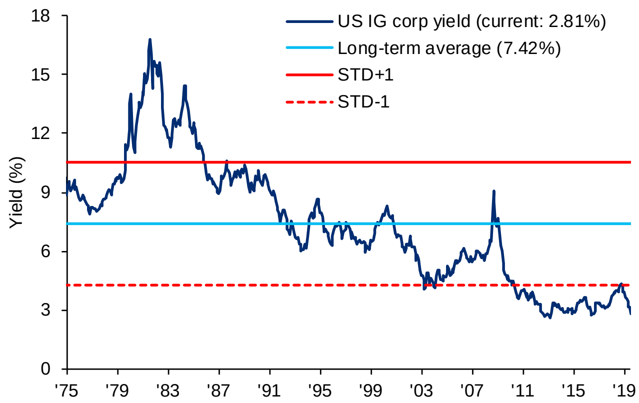


Source: Bloomberg.

Figures as of September 3, 2019. Note: STD+1= Plus one standard deviation from the average, STD-1= Minus one standard deviation from the average. Past performance is no guarantee of future returns. Real results may vary.

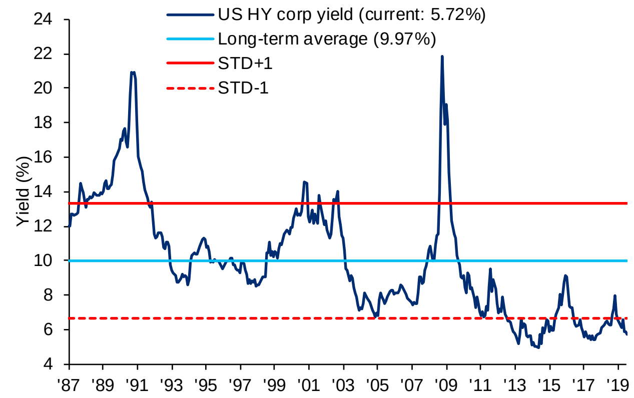
Long-term historical corporate bond yields

Figure 32. US investment grade corporate yield



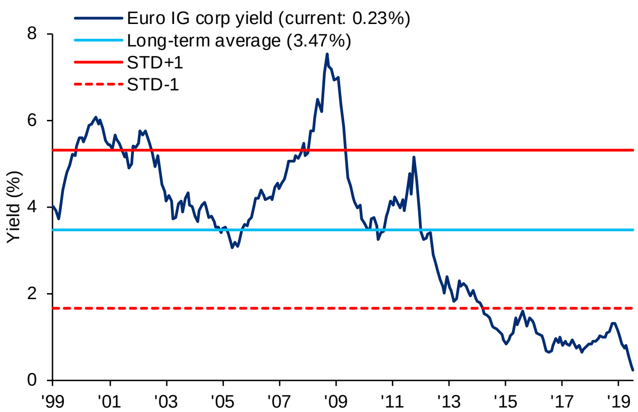
Source: Bloomberg Barclays Indices.

Figure 33. US high yield corporate yield



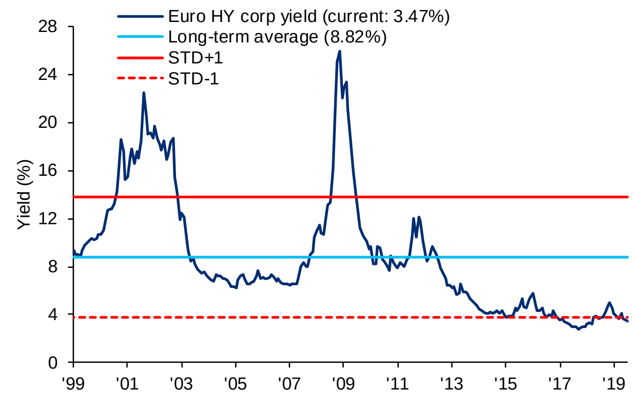
Source: Bloomberg Barclays Indices.

Figure 34. European investment grade corporate yield



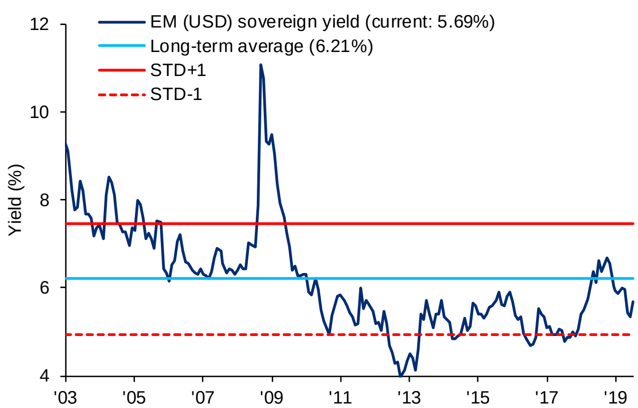
Source: Bloomberg Barclays Indices.

Figure 35. European high yield corporate yield



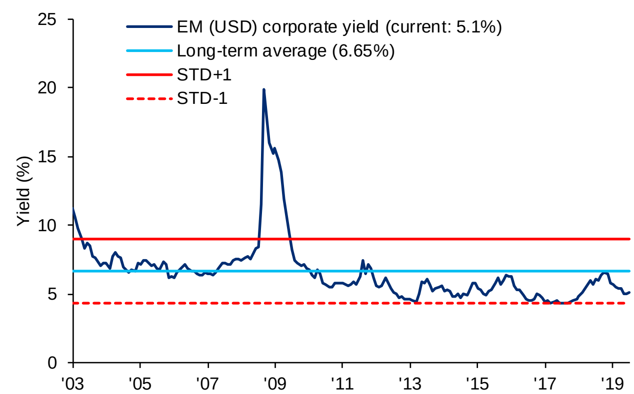
Source: Bloomberg Barclays Indices.

Figure 36. EM (USD) sovereign yield



Source: Bloomberg Barclays Indices.

Figure 37. EM (USD) corporate yield

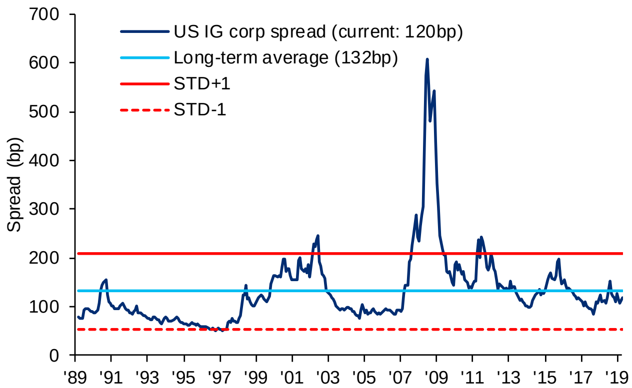


Source: Bloomberg Barclays Indices.

Figures as of September 3, 2019. Note: STD+1= Plus one standard deviation from the average, STD-1= Minus one standard deviation from the average. Past performance is no guarantee of future returns. Real results may vary.

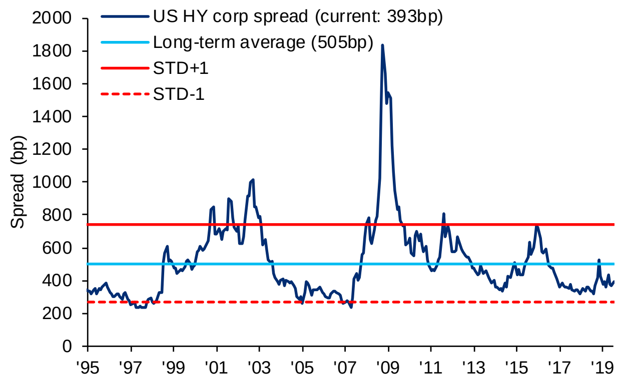
Long-term historical corporate bond spreads

Figure 38. US investment grade corporate spread



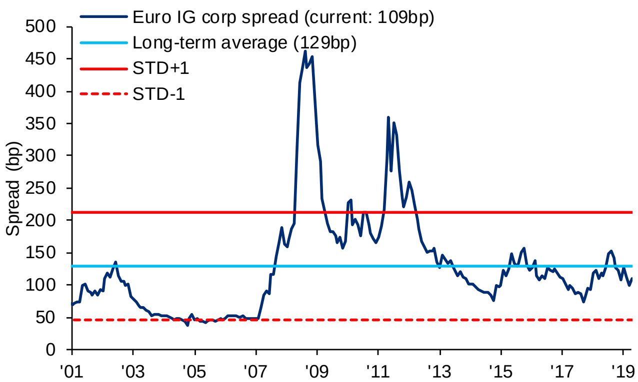
Source: Bloomberg Barclays Indices.

Figure 39. US high yield corporate spread



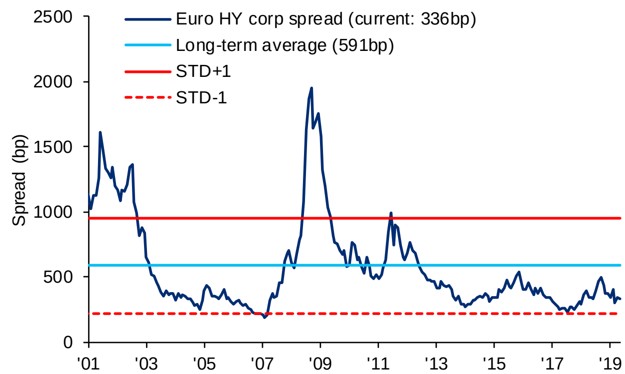
Source: Bloomberg Barclays Indices.

Figure 40. European investment grade corporate spread



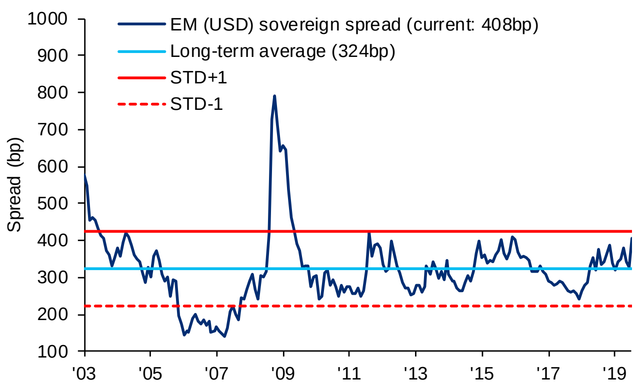
Source: Bloomberg Barclays Indices.

Figure 41. European high yield corporate spread



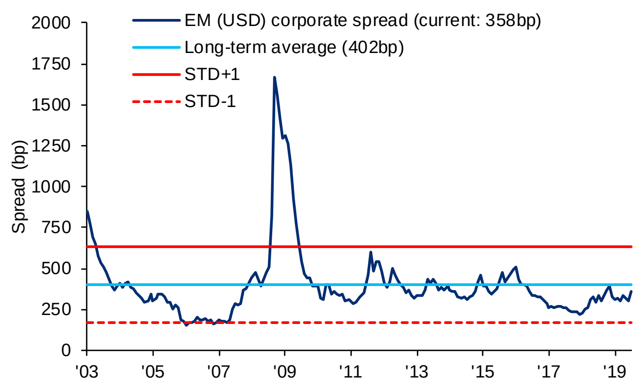
Source: Bloomberg Barclays Indices.

Figure 42. EM (USD) sovereign spread



Source: Bloomberg Barclays Indices.

Figure 43. EM (USD) corporate spread

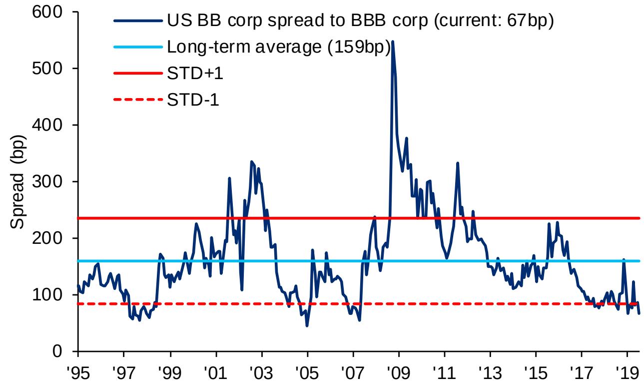


Source: Bloomberg Barclays Indices.

Figures as of September 3, 2019. Note: STD+1= Plus one standard deviation from the average, STD-1= Minus one standard deviation from the average. Past performance is no guarantee of future returns. Real results may vary.

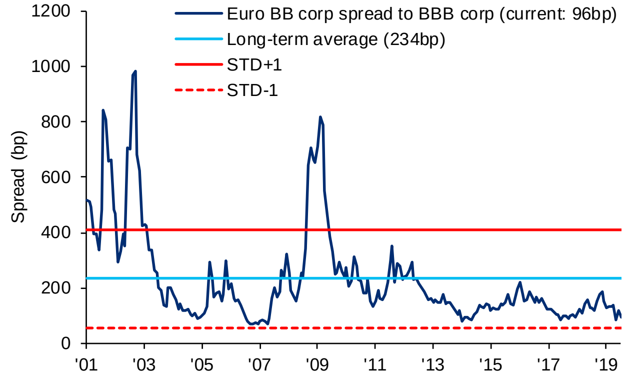
Long-term historical corporate bond spread comparisons

Figure 44. US BB corp spread to BBB corp



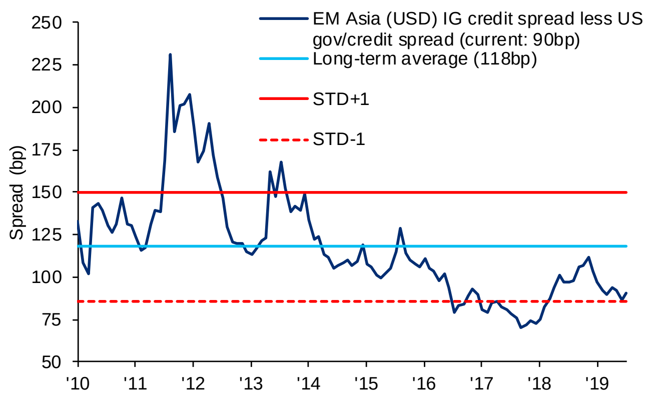
Source: Bloomberg Barclays Indices.

Figure 45. Euro BB corp spread to BBB corp



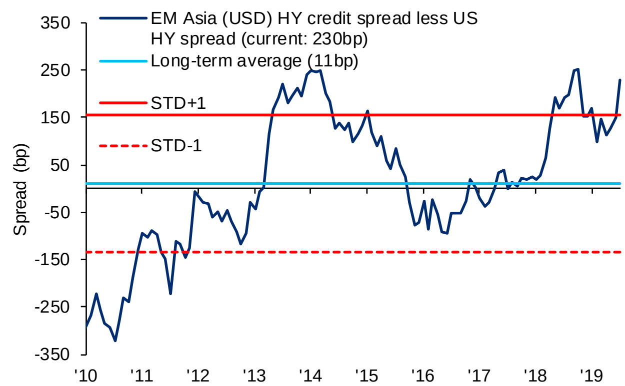
Source: Bloomberg Barclays Indices.

Figure 46. EM Asia (USD) IG credit spread to US Gov/Credit



Source: Bloomberg Barclays Indices.

Figure 47. EM Asia (USD) HY credit spread to US HY

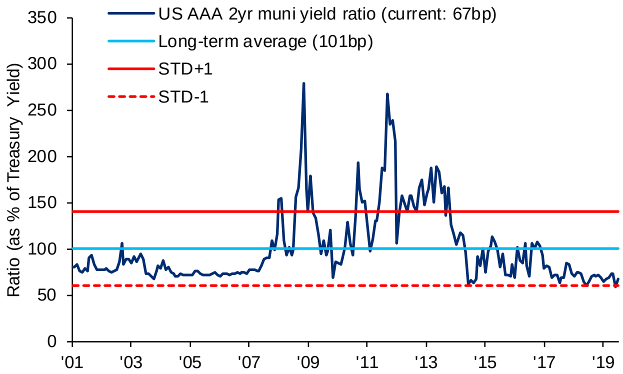


Source: Bloomberg Barclays Indices.

Figures as of September 3, 2019. Note: STD+1= Plus one standard deviation from the average, STD-1= Minus one standard deviation from the average. Past performance is no guarantee of future returns. Real results may vary.

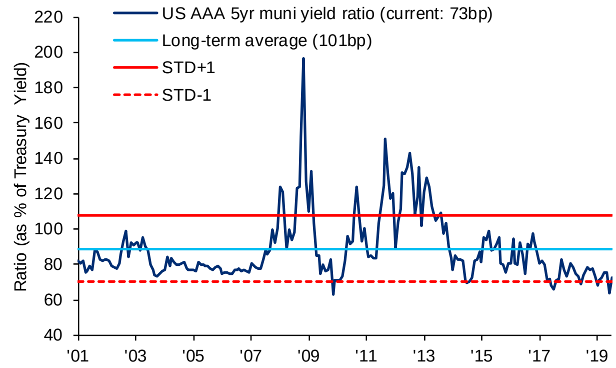
Long-term historical municipal bond yield ratios vs US Treasuries

Figure 48. US AAA-rated 2yr muni yield ratio



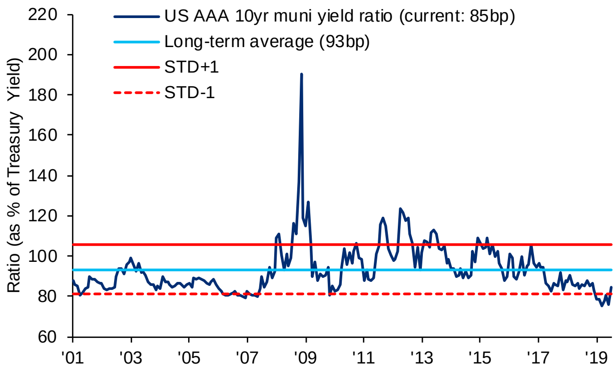
Source: Bloomberg.

Figure 49. US AAA-rated 5yr muni yield ratio



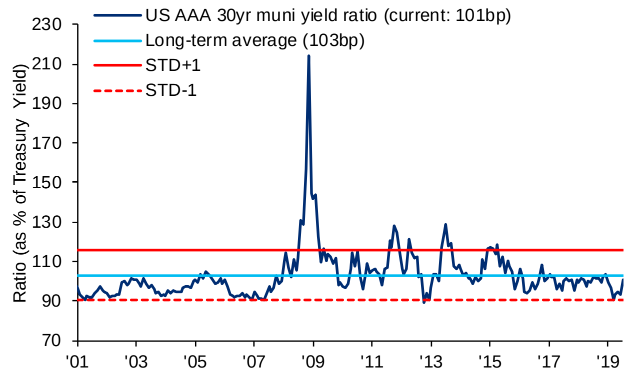
Source: Bloomberg.

Figure 50. US AAA-rated 10yr muni yield ratio



Source: Bloomberg.

Figure 51. US AAA-rated 30yr muni yield ratio



Source: Bloomberg.

Figures as September 3, 2019. Note: STD+1= Plus one standard deviation from the average, STD-1= Minus one standard deviation from the average. Past performance is no guarantee of future returns. Real results may vary.

Fixed income market returns

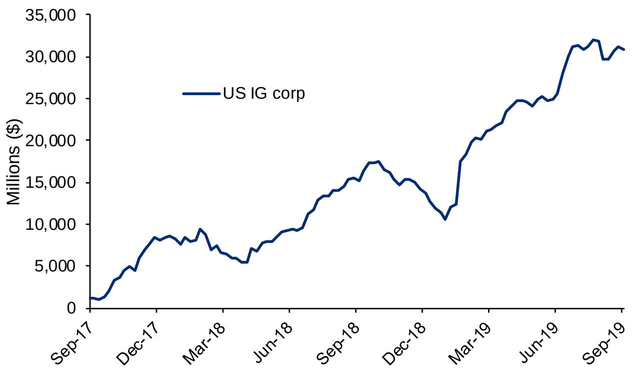
Figure 52. Fixed Income index returns (local currency, %)

Index	YTD	Last 12m	Last 3m	Last 1m	Yield	Duration
Broad Aggregate Indices						
Global Agg (local currency)	7.6	8.9	2.9	0.3		
US Agg Bond	8.1	9.8	3.0	0.3	2.31	5.79
European Agg	7.9	8.4	3.4	0.4	-0.01	7.29
Developed Sovereign Debt						
Global (local currency)	7.4	9.1	3.0	0.3	0.71	8.60
US Treasury	7.3	9.7	2.9	0.3	1.58	6.68
US Agency	5.8	7.7	2.2	0.3	1.90	4.08
German Bunds	6.1	7.6	2.6	-0.4	-0.75	8.36
UK Gilts	10.6	11.8	4.3	0.6	0.70	14.33
Japan JGBs	3.9	5.2	1.1	-0.4	-0.16	11.50
Portugal	9.5	11.0	2.1	0.0	7.71	2.82
Italy	12.6	14.7	8.6	5.2	0.75	7.32
Ireland	7.4	7.6	2.2	-0.4	-0.17	8.94
Spain	9.8	10.4	2.7	-0.1	0.00	8.37
Inflation-linked Sovereign Debt						
Global I-Linked (local currency)	10.3	10.8	3.3	0.4	-1.10	12.63
US I-Linked	7.8	6.9	2.4	-0.2	1.89	4.74
US Municipals						
US Municipals	7.1	8.6	2.2	0.1	1.75	5.23
Emerging Markets						
EM (Hard Currency) Sovereign	11.6	13.7	2.8	-1.1	5.65	7.74
EM LatAm	8.8	10.2	-1.1	-4.3	7.52	8.78
EM Asia	15.0	16.9	5.3	1.9	3.40	7.77
EM EMEA	13.7	16.4	5.4	1.0	4.65	7.24
EM (Local) Govt, hedged USD	7.7	11.0	3.7	0.1	3.93	6.87
EM LatAm	8.2	12.3	2.8	-0.1	6.47	4.78
EM Asia	5.8	10.0	3.1	0.2	3.61	7.46
EM EMEA	6.6	10.4	3.3	0.2	5.73	5.32
Securitized debt						
US MBS	5.3	7.4	1.7	0.3	2.49	2.78
US CMBS	8.4	10.3	2.7	-0.1	2.34	5.29
US ABS	4.0	5.4	1.2	0.1	2.03	2.18
High Grade Corporate Debt						
USD Corporates	12.4	12.4	4.4	0.4	2.98	7.81
EUR Corporates	6.8	6.2	2.3	-0.3	0.38	5.24
GBP Corporates	10.1	9.5	3.3	-0.2	2.15	8.44
High Yield Corporate Debt						
USD High Yield	11.5	7.1	2.4	1.5	5.60	3.06
EUR High Yield	9.6	5.8	3.1	1.2	3.47	4.13
Asia (USD)High Yield	9.7	9.6	1.0	0.1	7.71	2.82
S&P/LSTA Leveraged Loan	6.5	3.4	0.7	0.1		
Hybrid debt						
S&P US Variable Rate Preferred Index (F2F)	14.2	8.6	3.7	1.0		
S&P US Fixed Rate Preferred Index	14.1	7.5	3.2	1.0		

Source: The Yield Book, Bloomberg Barclays Indices, S&P as of September 12, 2019. Past performance is no guarantee of future results. Real results may vary.

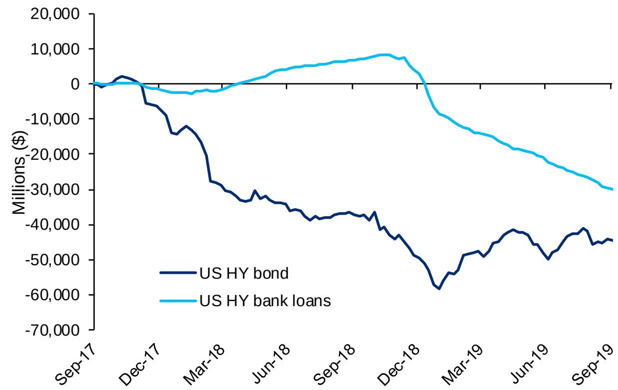
Bond fund cumulative weekly flows

Figure 53. Cumulative fund flows – US IG corp



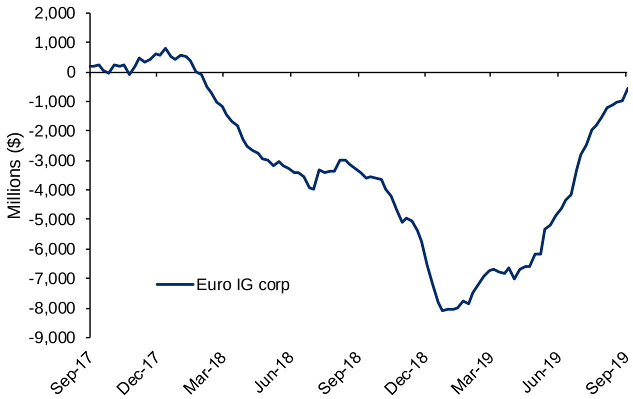
Source: EPFR.

Figure 54. Cumulative fund flows – US HY bond vs loans



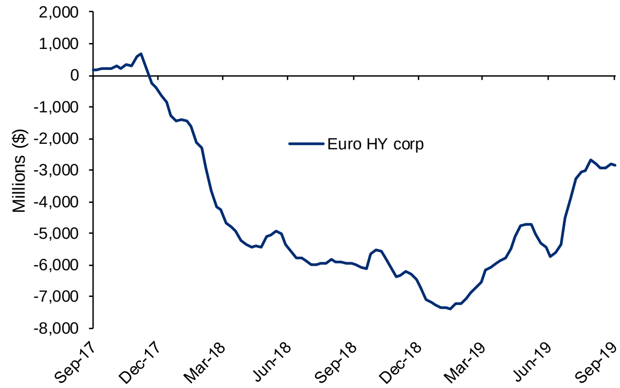
Source: EPFR.

Figure 55. Cumulative fund flows – Euro IG corp



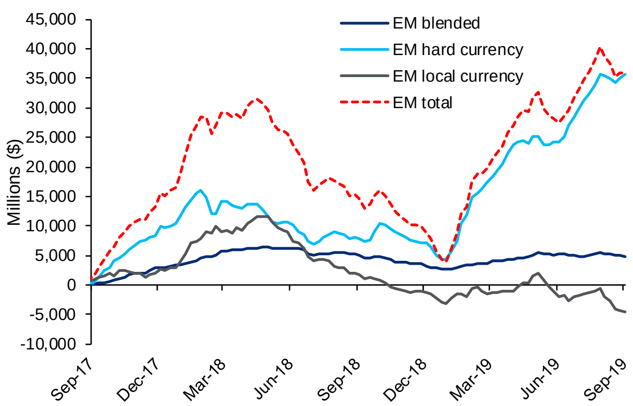
Source: EPFR.

Figure 56. Cumulative fund flows – Euro HY corp



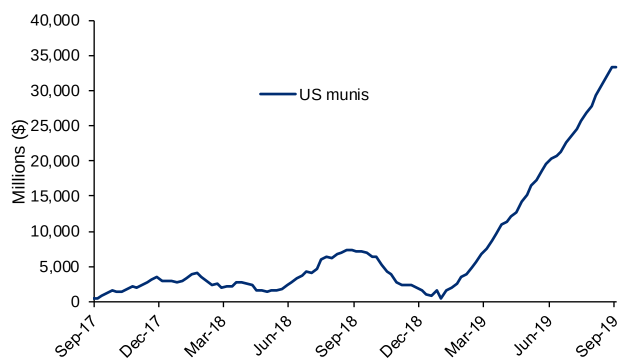
Source: EPFR.

Figure 57. Cumulative fund flows – EM, by currency



Source: EPFR.

Figure 58. Cumulative fund flows – US munis



Source: EPFR.

Figures as of September 4, 2019.

Notes

Notes

Notes

Notes

Market definitions

Asset classes	Benchmarked against
Global equities	MSCI All Country World Index, which represents 48 developed and emerging equity markets. Index components are weighted by market capitalization.
Global bonds	Bloomberg Barclays Multiverse (Hedged) Index, which contains the government -related portion of the Multiverse Index, and accounts for approximately 14% of the larger index.
Hedge funds	HFRX Global Hedge Fund Index, which is designed to be representative of the overall composition of the hedge fund universe. It comprises all eligible hedge fund strategies; including but not limited to convertible arbitrage, distressed securities, equity hedge, equity market neutral, event driven, macro, merger arbitrage and relative value arbitrage. The strategies are asset-weighted based on the distribution of assets in the hedge fund industry.
Commodities	Dow Jones-UBS Commodity Index, which is composed of futures contracts on physical commodities traded on US exchanges, with the exception of aluminium, nickel and zinc, which trade on the London Metal Exchange (LME). The major commodity sectors are represented including energy, petroleum, precious metals, industrial metals, grains, livestock, softs, agriculture and ex-energy.

Equities	
Developed market large cap	MSCI World Large Cap Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure the equity market performance of the large cap stocks in 23 developed markets. Large cap is defined as stocks representing roughly 70% of each market's capitalization.
US	Standard & Poor's 500 Index, which is a capitalization -weighted index that includes a representative sample of 500 leading companies in leading industries of the US economy. Although the S&P 500 focuses on the large cap segment of the market, with over 80% coverage of US equities, it is also an ideal proxy for the total market.
Europe ex UK	MSCI Europe ex UK Large Cap Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure large cap stock performance in each of Europe's developed markets, except for the UK.
UK	MSCI UK Large Cap Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure large cap stock performance in the UK.
Japan	MSCI Japan Large Cap Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure large cap stock performance in Japan.
Asia Pacific ex Japan	MSCI Asia Pacific ex Japan Large Cap Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure the performance of large cap stocks in Australia, Hong Kong, New Zealand and Singapore.
Developed market small and mid-cap	MSCI World Small Cap Index, which is a capitalization-weighted index that measures small cap stock performance in 23 developed equity markets.
Emerging market	MSCI Emerging Markets Index, which is free-float adjusted and weighted by market capitalization. The index is designed to measure equity market performance of 22 emerging markets.

Bonds	
Global Aggregate Index	Bloomberg Barclays Global Aggregate Index is a flagship measure of global investment grade debt from twenty-four local currency markets. This multi-currency benchmark includes treasury, government-related, corporate and securitized fixed-rate bonds from both developed and emerging markets issuers.
US Aggregate Bond Index	Bloomberg Barclays US Aggregate Bond Index is a broad-based flagship benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate and hybrid ARM pass-throughs), ABS and CMBS (agency and non-agency).
Pan-European Aggregate Index	Bloomberg Barclays Pan-European Aggregate Index tracks fixed-rate, investment-grade securities issued in the following European currencies: Euro, British pounds, Norwegian krone, Danish krone, Swedish krona, Czech koruna, Hungarian forint, Polish zloty, and Slovakian koruna. Inclusion is based on the currency of the issue, and not the domicile of the issuer. The principal asset classes in the index are Treasuries, Government-Related, Corporate and Securitised, which include Pfandbriefe, other covered bonds and asset-backed securities.
Developed sovereign	Citi World Government Bond Index (WGBI), which consists of the major global investment grade government bond markets and is composed of sovereign debt, denominated in the domestic currency. To join the WGBI, the market must satisfy size, credit and barriers-to-entry requirements. In order to ensure that the WGBI remains an investment grade benchmark, a minimum credit quality of BBB–/Baa3 by either S&P or Moody's is imposed. The index is rebalanced monthly.
Emerging sovereign	Citi Emerging Market Sovereign Bond Index (ESBI), which includes Brady bonds and US dollar -denominated emerging market sovereign debt issued in the global, Yankee and Eurodollar markets, excluding loans. It is composed of debt in Africa, Asia, Europe and Latin America. We classify an emerging market as a sovereign with a maximum foreign debt rating of BBB+/Baa1 by S&P or Moody's. Defaulted issues are excluded.
Inflation-Linked	Citi World Inflation-Linked Securities Index (WorldILSI) coverage includes the United States, Japan, France, Germany, Greece, Italy, Sweden, and the United Kingdom. It measures the returns of the inflation-linked bonds with fixed-rate coupon payments that are linked to an inflation index.
Supranationals	Citi World Broad Investment Grade Index (WBIG)—Government Related, which is a subsector of the WBIG. The index includes fixed rate investment grade agency, supranational and regional government debt, denominated in the domestic currency. The index is rebalanced monthly.

Securitized	Citi World Broad Investment Grade Index (WBIG)—Securitized, which is a subsector of the WBIG. The index includes global investment grade collateralized debt denominated in the domestic currency, including mortgage - backed securities, covered bonds (Pfandbriefe) and asset -backed securities. The index is rebalanced monthly.
Corporate investment grade	Citi World Broad Investment Grade Index (WBIG)—Corporate, which is a subsector of the WBIG. The index includes fixed rate global investment grade corporate debt within the finance, industrial and utility sectors, denominated in the domestic currency. The index is rebalanced monthly.
Mortgage Backed Security	Mortgage Backed Security (MBS) is a type of asset-backed security that is secured by a mortgage or collection of mortgages. The mortgages are sold to a group of individuals (a government agency or investment bank) that securitizes, or packages, the loans together into a security that investors can buy
Corporate high yield	Bloomberg Barclays Global High Yield Index is a multi-currency flagship measure of the global high yield debt market. The index represents the union of the US High Yield, the Pan-European High Yield, and Emerging Markets (EM) Hard Currency High Yield Indices.
Municipal	Bloomberg Barclays Municipal Bond Index is a broad-based benchmark that measures the investment grade, US dollar-denominated, fixed tax-exempt bond market. The index includes state and local general obligation, revenue, insured, and pre-refunded bonds
Preferred/Hybrid	Bank of America (BofA) Merrill Lynch Fixed Rate Preferred Securities Index tracks the performance of fixed rate US dollar denominated preferred securities issued in the US domestic market.
European Contingent Convertible	Credit Suisse European Contingent Convertible Index tracks bonds known as “CoCos”. The term CoCo is used to describe a new type of convertible bond that is automatically converted into a predetermined amount of shares when a predefined trigger is breached. Since this type of bond is transformed into equity upon conversion, it would be available for further loss absorption and therefore satisfies regulatory requirements of hybrid capital instruments.

CDS

CDX North America Inv Grade	Markit CDX North American Investment Grade Index consists of CDS levels for the most liquid north American entities with investment grade credit ratings.
CDX North America High Yield	Markit CDX North American High Yield Index consists of CDS levels for the most liquid north American entities with high yield credit ratings.
CDX North America High Vol	Markit CDX North American Investment Grade High Volatility Index consists of CDS levels for the most liquid north American entities with investment grade credit ratings and higher volatility.
Markit MCDX Municipal Index	The Markit MCDX index is a credit index consisting of municipal single name CDS.
iTraxx Europe Index Inv Grade	The benchmark Markit iTraxx Europe index comprises CDS levels of 125 equally-weighted European names.
iTraxx Europe Crossover Index	The Markit iTraxx Crossover index comprises CDS levels for the 75 most liquid sub-investment grade entities.
iTraxx Europe Senior Financial	The Markit iTraxx Europe Senior Financials Index consists of twenty-five (25) financial entities from the Markit iTraxx Europe index referencing senior debt.
iTraxx SOVX Western Europe	The Markit iTRaxx SovX Western Europe index consists of 15 equally weighted Western European sovereign CDS constituents.
iTraxx Japan Inv Grade	The Markit iTraxx Japan Investment Grade Index consists of fifty (50) of the most liquid Japanese entities with investment grade credit ratings as published by Markit
iTraxx Asia ex-Japan Inv Grade	The Markit iTraxx Asia ex-Japan Investment Grade Index consists of forty (40) of the most liquid Asian entities with investment grade credit ratings as published by Markit
CDX Emerging Markets	The Markit CDX Emerging Markets Index is composed of 14 sovereign CDS issuers. All entities are domiciled in three regions: (i) Latin America, (ii) Eastern Europe, the Middle East and Africa, and (iii) Asia.

Other miscellaneous definitions

Citi Economic Surprise Index	The Citigroup Economic Surprise Index are objective and quantitative measures of economic news, covering all G10 economies. They are defined as weighted historical standard deviations of data surprises (actual releases vs Bloomberg survey median).
S&P/LSTA Leveraged Loan Index	The S&P/LSTA (Loan Syndication and Trading Association) Leveraged Loan Index is a rules based index that tracks the investable senior loan market.
European Additional Tier 1	European Additional Tier 1 capital (or Contingent Convertibles or CoCo's) are subordinated securities that qualify as Tier 1 capital under Basel III capital requirements.
LIBOR	The London Interbank Offered Rate (LIBOR is the average of interest rates estimated by each of the leading banks in London that it would be charged were it to borrow from other banks. Libor rates are calculated for 5 currencies, including Euros, and 7 borrowing periods ranging from overnight to one year and are published each business day
Barbell strategies	Barbell strategies incorporate weighing two distinctively different investments in order to mitigate potential market risk
AMT Bond	Alternative Minimum Tax (AMT) bond is a private activity municipal bond whose interest is treated as a preference item for purposes of computing the alternative minimum tax imposed on individuals and corporations.
Variable rate demand note (VRDN)	Longer-term municipal securities that feature both a periodic coupon reset and a demand feature that allows an investor to periodically tender, or put, the securities at par plus accrued interest.

Covenant-Lite loan	Loan agreement that has fewer covenants to protect the lender and fewer restrictions on the borrower regarding payment terms, income requirements and collateral. Conversely a covenant heavy loan has more covenants.
Fixed to Float Preferred (F2F) securities	Are junior subordinated structures that carry a fixed coupon for a specified period of time. If not redeemed by the issuer at that time, coupon payments would then float at a spread, determined at issuance, over a specified benchmark — typically three-month LIBOR.
Bond Connect	Bond Connect is a new mutual market access scheme that allows investors from mainland China and overseas to trade in each other's respective bond market
Runoff Cap	According to the US Federal Reserve, holdings of Treasuries, agency debt and agency mortgage-backed securities will be allowed to mature (or run-off) up to a pre-determined amount. This amount is considered a "cap". Any amount of matured debt that exceeds this cap, will be reinvested back into their respective market.
G7	Group of 7 (G7) is a group consisting of Canada, France, Germany, Italy, Japan, the United Kingdom and the United States.
EuroCOIN	Is a coincident indicator of the euro area business cycle that provides an estimate of monthly growth of euro area GDP after the removal of measurement errors, seasonal, and other short run fluctuations.
Merrill Lynch Option Volatility Expectations	Merrill Lynch Option Volatility Expectations or MOVE is an index measure of Treasury yield volatility.
Asset Backed Security (ABS)	A security whose income payments and hence value are derived from and collateralized (or "backed") by a specified pool of underlying assets such as consumer credit card debt or auto loans.
Investment Grade Corporate bonds (IG)	Investment grade corporate bonds are bonds with a credit rating equal to or above BBB- (S&P) or Baa3 (Moody's), and are debt securities issued by a corporation and sold to investors. The backing for the bond is usually the payment ability of the company, which is typically money to be earned from future operations.
High Yield Corporate Bonds (HY)	High yield corporate bonds are bonds with a credit rating less than BBB- (S&P) or Baa3 (Moody's), and are debt securities issued by a corporation and sold to investors. The backing for the bond is usually the payment ability of the company, which is typically money to be earned from future operations.
Commercial Mortgage Backed Securities	Commercial mortgage-backed securities (CMBS) are a type of mortgage-backed security that is secured by mortgages on commercial properties, instead of residential real estate.
Collateralized loan obligation (CLO)	A form of securitization where payments from multiple middle sized and large business loans are pooled together and passed on to different classes of owners in various tranches. A CLO is a type of collateralized debt obligation.

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Bond rating equivalence

Alpha and/or numeric symbols used to give indications of relative credit quality. In the municipal market, these designations are published by the rating services. Internal ratings are also used by other market participants to indicate credit quality.

Bond credit quality ratings	Rating agencies		
Credit risk	**Moody's[1]**	**Standard and Poor's[2]**	**Fitch Ratings[2]**
Investment Grade			
Highest quality	Aaa	AAA	AAA
High quality (very strong)	Aa	AA	AA
Upper medium grade (Strong)	A	A	A
Medium grade	Baa	BBB	BBB
Not Investment Grade			
Lower medium grade (somewhat speculative)	Ba	BB	BB
Low grade (speculative)	B	B	B
Poor quality (may default)	Caa	CCC	CCC
Most speculative	Ca	CC	CC
No interest being paid or bankruptcy petition filed	C	D	C
In default	C	D	D

1 The ratings from Aa to Ca by Moody's may be modified by the addition of a 1, 2, or 3 to show relative standing within the category.
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Additionally, the underlying collateral supporting non-Agency MBS may default on principal and interest payments. In certain cases, this could cause the income stream of the security to decline and result in loss of principal. Further, an insufficient level of credit support may result in a downgrade of a mortgage bond's credit rating and lead to a higher probability of principal loss and increased price volatility. Investments in subordinated MBS involve greater credit risk of default than the senior classes of the same issue. Default risk may be pronounced in cases where the MBS security is secured by, or evidencing an interest in, a relatively small or less diverse pool of underlying mortgage loans.

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