**Invesco Fixed Income**

# Global Fixed Income Strategy

Dec. 19, 2018

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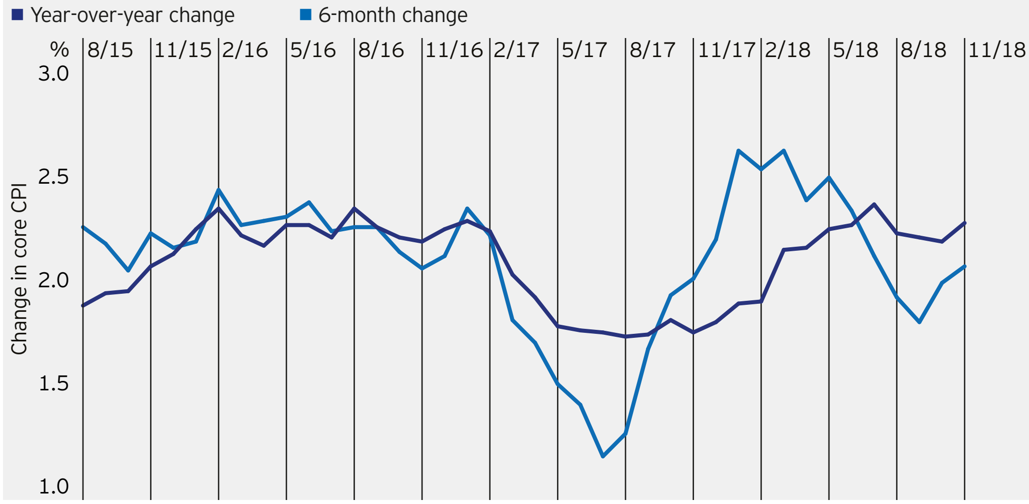
**Global macro strategy**

## Slowing inflation in the US and what to expect next year

At Invesco Fixed Income, we have long forecasted below-consensus 2018 inflation. While we expected 2017's "lowflation" trend to stabilize, we did not think core levels of inflation would accelerate, despite a strong US economy. We have also believed that inflation trends would slow in the second half of this year. Data have corroborated our view over the past six months, and we have seen inflation decelerate. Now we believe this slowing trend is coming to an end and we are about to begin a period of conflicting inflation signals. In 2019, we believe we will enter a complicated period in which core inflation is volatile and difficult to predict. That being said, we believe the US will likely remain in a moderate inflation environment.

**Figure 1: Core inflation slowed in 2018**




Source: Bloomberg L.P., data from Aug. 31, 2015 to Nov. 30, 2018.

**What happened in 2018?**

This year began with an "inflation scare," with many forecasters pointing to significantly rising inflation. However, as we approach the end of 2018, inflation has not meaningfully accelerated. Year-over-year core consumer price inflation peaked at 2.4%[1] in July, and has since fallen to 2.2%[2] as of October. Core personal consumption expenditures (PCE) data, also appear to have reached a near-term peak, reaching 2%[3] in July but retreating to 1.8%[4] as of October. Our view of softening inflation has been based on our analysis of several important components of the consumer price index (CPI) which we believe have been important drivers of inflation in the post-financial crisis period. We have thought that price dynamics of these factors would prevent inflation from rising meaningfully in 2018 – namely, slowing shelter prices driven by an oversupply of rentals, and apparel prices, which we have expected to "mean revert," or return to more typical levels.

Our view has been broadly correct. For example, year-to-date, shelter price inflation has increased by a smaller amount in the past six months compared to the previous six months. Apparel prices, which we expected to mean revert, fell by 5.4% annualized over the past six months, versus a rise of 5% annualized over the previous six months.[5]

**What is likely to happen in 2019?**
We believe assessing inflation trends in 2019 will be significantly more complicated than it has been in 2018. This is because inflation will likely be affected by the crosscurrents of economic trends, labor market factors and trade-related developments. These factors will likely make it difficult to identify underlying inflation trends and the resulting response of the US Federal Reserve (Fed).

In particular, additional US action on tariffs may significantly impact inflation in 2019. A 25% tariff increase on USD200 billion of Chinese goods was originally set to take effect on Jan. 1, 2019, but these tariffs were delayed. If they had taken effect, prices of many different consumer goods would have risen. We estimate that core inflation would have increased by roughly 0.2%. However, we would view this price rise as akin to a tax increase. In our view, it is not correct to view a price rise due to a tax increase in the same way as one due to changes in supply or demand. We believe the Fed would have also viewed such price increases as more "tax-like," and therefore likely to be temporary, however this assessment is uncertain and similar issues may arise in 2019.

When it comes to the labor market, we see little risk that wage pressures will translate meaningfully into price pressures in 2019. Wages have begun to grow at an increasing pace and we expect this trend to continue - we expect wages to grow at 2.9% in 2018 and possibly accelerate to 3.5% in 2019. However, the transmission of wages to realized inflation has been historically slow, and we do not expect a significant impact on core inflation in 2019.

**What mixed inflation signals may mean for markets**
The various crosscurrents affecting inflation will likely make it difficult for policy makers to determine the true inflation trend in 2019. The combination of higher labor prices and increasing goods prices due to tariffs may cause some analysts to over-extrapolate the actual inflation trend, similar to 2018. The risk is that this false positive may cause the Fed to tighten policy more than it otherwise would have. Further tightening of monetary policy would likely lead to higher short-term interest rates, a flatter yield curve and perhaps greater risk of recession beyond 2019 than we currently see.

*James Ong, Senior Macro Strategist*

1 Source: US Bureau of Labor Statistics, Aug. 10, 2018.
2 Source: US Bureau of Labor Statistics, Nov. 14, 2018.
3 Source: US Bureau of Economic Analysis, Sep. 29, 2018.
4 Source: US Bureau of Economic Analysis, Nov. 29, 2018.
5 Source: US Bureau of Labor Statistics, data from Dec. 13, 2017 to Dec. 12, 2018.

# Interest rate outlook

**US: Neutral.** US Treasuries have found support as investors have moderated their growth outlook for 2019. We too believe that peak US growth is behind us. This combined with expectations of elevated US Treasury supply and fewer Fed asset purchases in 2019, drive our near-term outlook for range-bound US interest rates. We expect inflation to firm but remain benign in 2019. This should allow the Fed to progress on its path of policy normalization, although potentially more slowly than in 2018. In the near term, above-potential US growth, continued stimulative fiscal policy and healthy private consumption, (supported by tight labor markets, healthy consumer balance sheets and high consumer confidence levels) could pressure US Treasury yields higher. However, slowing growth in 2019 may cause the Fed to pause.

**Europe: Neutral.** We remain neutral on European interest rates as we seek greater clarity on the Italian budget and prospects for a Brexit deal. Risk-off sentiment due to these uncertainties and weak euro area economic data have weighed on German bund yields. In addition, the recent shift in Fed rhetoric and repricing of US interest rates have rattled the market and led to greater focus on recession risk, driving Group of 10 government yields lower. In Germany, the pace of auto sector recovery and its likely impact on fourth quarter GDP remains under scrutiny. The European Central Bank (ECB) is on track to end net asset purchases in December, despite a downward revision to its growth outlook at the December meeting.

**China: Neutral.** We are neutral on Chinese interest rates due to our expectations about China's monetary and fiscal policies, potential investor behavior and US Treasury yield movements on the back of shifting global market sentiment. We expect Chinese monetary policy to remain accommodative and fiscal easing to play a more active role. In the medium term, we expect liquidity to remain reasonably loose, but investors may cut interest rate positions and add risk via the credit market due to the recently announced series of supportive measures. Lower US Treasury yields, however, could mitigate upward pressure on China's onshore government bond yield curve.

**Japan: Neutral.** Global risk aversion has led to a sharp decline in 10-year Japanese government bond (JGB) yields over the last month. Yields are now approaching levels not seen since before the July Bank of Japan (BoJ) meeting, when the range around the 0% 10-year yield target was widened. We believe there is limited downside potential for yields from here, particularly at shorter maturities, as the BoJ is likely to reduce its asset purchases if yields fall further and some shorter-maturity bonds are now trading at yields close to, or below, funding rates, reducing the incentive to hold them for carry. More generally, we expect JGB yields to continue to be driven by global risk sentiment rather than domestic macro drivers, with no major changes in BoJ policy expected in the near term.

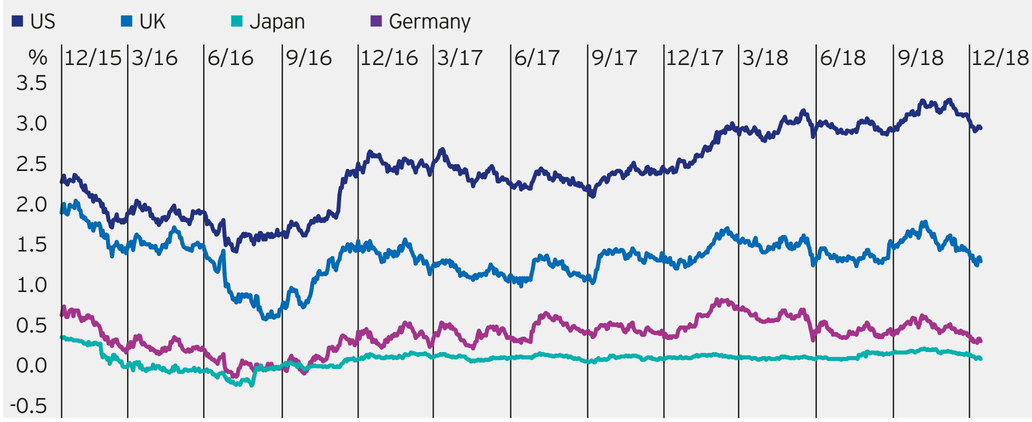
**UK: Neutral.** Brexit-related uncertainty, combined with global risk aversion has caused gilt yields to decline sharply and outperform versus US Treasuries and German bunds. We continue to believe a "no deal" Brexit (UK leaves the European Union (EU) without a transition period and falls back on World Trade Organization trading terms) will be avoided. In this context, we believe gilts look expensive. Relatively resilient GDP growth and accelerating wage growth could cause the Bank of England (BoE) to hike interest rates in the second quarter of 2019, assuming the UK leaves the EU on terms similar to the deal currently proposed. Alternatively, a softer Brexit, or a reversal of Brexit after a potential second referendum, could lead to a bigger bounce in GDP growth and a faster trajectory of BoE rate hikes. However, the market is currently not pricing a full 25 basis point interest rate hike until the first quarter of 2020.

**Canada: Neutral.** The Bank of Canada (BoC) indicated concerns over a slowdown in global growth and ongoing global trade disputes at its December meeting. In addition, the recent drop in the price of Western Canada Select (WCS) crude oil and associated production cuts by the Canadian energy sector require further monitoring. We believe these developments have left the BoC believing it will still need to increase interest rates toward neutral, although the path may be slower than previously communicated. Canadian government bond yields have rallied sharply, but will likely stabilize going forward if risk assets recover.

**Australia: Underweight.** We have moved underweight Australian interest rates. The recent rally in US interest rates has caused a similar rally in Australian rates, and 10-year yields are now at the lows of their recent range. The Reserve Bank of Australia (RBA) kept its policy rate stable in December, although the statement was less upbeat than in November, due to concerns over the housing market and global outlook. We expect it to remain on hold until the second half of 2019. Although third quarter GDP disappointed versus expectations, due to lower than expected household consumption growth as the declining housing market weighs on the consumer, we believe overall growth remains solid. Given its more dovish tone and lower than expected GDP, we expect the RBA to leave interest rates unchanged until the second half of next year.

**India: Neutral.** We have moved from overweight to neutral Indian interest rates, as we believe considerable policy risks may lie ahead. The Reserve Bank of India (RBI) Governor resigned unexpectedly on December 10, apparently due to a disagreement with the government. This development not only has market implications but could also impact future inflation, in our view, if the government chooses an ultra-dovish candidate as the new RBI Governor.

**Figure 1: Global 10-year yields**




Source: Bloomberg L.P., Dec. 14, 2015 to Dec. 14, 2018. Past performance is not indicative of future results.

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# Currency outlook

**USD: Neutral.** We expect the US dollar to trade in a narrow range in the near term due to opposing forces of moderating US growth and global risk-off sentiment and increased volatility. We expect US GDP growth to remain solid in 2019, but taper toward a mid-to-low 2% level. We remain on the sidelines for now, but will likely look to move underweight the US dollar in 2019 as US growth moderates vis-a-vis the rest of the world and the Fed becomes potentially more cautious toward the end of its tightening cycle. In Europe and China, we expect growth to stabilize above-potential in 2019, which could cause investors to shift some assets from the US to other regions, potentially weighing on the US dollar. US budget and current account deficit concerns may also weigh on the US dollar.

**EUR: Neutral.** We remain on the sidelines. Despite more supportive rhetoric from the Fed regarding US monetary policy, a more conciliatory environment around global trade negotiations and Italian politics, and reasonable valuations, the euro has remained stagnant.

**RMB: Neutral.** The trade "truce" between Presidents Xi and Trump after the G20 meeting drove a rally in the renminbi from 6.96 to 6.83 versus the US dollar.[1] We expect US-China trade relations to continue to drive the renminbi's performance versus the US dollar in the near term. Capital controls on outflows remain tight, which should give the central bank (PBoC) room to pursue independent monetary policy. We still view 6.80-6.90 as the likely trading range for the exchange rate, although the strength of the US dollar versus other major currencies will be an important factor. We believe PBoC intervention is likely if the exchange rate moves towards 7.0.

**JPY: Neutral.** Contrary to historical patterns, the yen has failed to appreciate during the current period of heightened global risk aversion. This suggests that Japanese investor appetite for unhedged foreign assets continues to offset flight-to-safety flows and the positive impact of falling oil prices on Japan's balance of payments. We are monitoring flows to ascertain if there might be a broader change in the yen's trend.

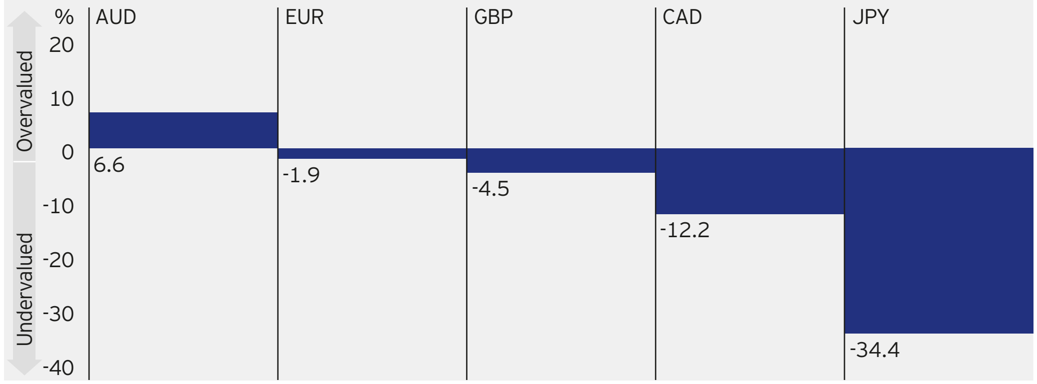
**GBP: Overweight.** Sterling has depreciated due to rising Brexit-related uncertainty. Although a resolution is unlikely before early next year, we believe recent developments have made a "no deal" Brexit outcome less likely. The European Court of Justice (ECJ)'s ruling that the UK can unilaterally revoke its application to leave the EU and changes to the UK parliamentary procedure that give Members of Parliament more power to shape government policy should reduce the threat of a cliff-edge scenario around the March exit date. Prime Minister May's success in the recent Conservative Party leadership confidence vote also means she can focus less on appeasing the hard-core Eurosceptic wing of her party, making a pivot toward a softer form of Brexit or a new referendum easier. Both outcomes would likely be positive for sterling, which, at current levels, does not appear to be placing much probability on either scenario, in our view.

**CAD: Neutral.** The BoC downplayed future interest rate hikes at its December meeting, referencing slower global growth, increased global trade tensions and the recent production cuts by the Canadian energy sector. While the central bank still believes it will be necessary to raise rates toward neutral, it has likely become more data dependent than previously. The Canadian dollar has had a rough couple of months, but we believe it is nearing a level that may attract buyers.

**AUD: Overweight.** The RBA kept its policy rate stable in December, but the statement was slightly more dovish than last month. Third quarter GDP growth was lower than expected but still relatively strong overall. We continue to expect the RBA to keep interest rates unchanged until later next year. While the Australian dollar took a hit following the recent disappointment in GDP growth, we believe overall economic data will continue to be strong and a weaker US dollar should push the Australian dollar higher.

**INR: Neutral.** Rupee volatility resumed in mid-December following a brief rally, which had been driven by lower oil prices and a lower than expected inflation report. We believe the recent surprise resignation of the RBI governor will further increase rupee volatility, despite a somewhat favorable macro backdrop. Therefore, we maintain our neutral stance.

**Figure 1: Valuations of major currencies compared to purchasing power parity (PPP)**




Source: Bloomberg L.P., Dec. 14, 2018.

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1 Source: Bloomberg L.P., Dec. 1, 2018 to Dec. 4, 2018.

This section highlights the key themes driving Invesco Fixed Income's global credit research process and views. Themes are updated based on evolving trends and expectations.

**Global investment themes**

# Global credit themes

## Geographical themes

### Investment grade (IG): Fundamentals diverge, outlook remains favorable, valuations improving amid volatility, technicals improving into year-end

**Rationale**

Amid recent volatility surrounding name-specific credit concerns, we continue to believe broad US corporate credit fundamentals will improve across most sectors heading into 2019. Operating fundamentals remain supportive, and debt levels are expected to decline. In the past several years, many factors encouraged issuers to increase their debt burdens, including low interest rates, tight credit spreads, low organic growth rates and tax policy that restricted the use of overseas retained earnings. Going forward, we believe these factors will reverse, resulting in declining use of debt as organic growth rates normalize, interest rates and spreads increase and companies repatriate substantial overseas cash. We are also noting pressure from shareholders to decrease leverage in response to rising funding costs and tax reform.

Our sector credit outlooks, however, have diverged due to global growth and trade concerns and higher interest rates. We expect certain cyclical sectors, including those sensitive to US housing, to exhibit increasing revenue and earnings volatility. We are closely watching the Fed and the Trump administration for clarity surrounding the neutral rate of interest and potential further trade escalations, which could have an increasingly negative impact on global demand and issuer cost structures. We remain skeptical of rating agencies' allowance of elevated leverage in recent mergers and have become very selective. We note deteriorating economic and credit conditions in China as a risk to global issuers that could lead to increasing volatility in financial conditions.

In terms of technicals, we have seen lower demand from foreign investors as currency hedging costs remain elevated. Repatriation of overseas cash by US corporations, much of which has been invested in short-maturity IG corporates, is putting downward pressure on demand for shorter-term bonds, and is also reducing the supply of new debt. We expect the uptick in US Treasury issuance to shift from US Treasury bills to longer maturities, posing another potential drag on technicals as the Fed migrates toward reversing quantitative easing over time. Fortunately, institutional demand for long-term corporate bonds remains robust.

European credit markets are generally earlier in the credit cycle versus the US and are less levered, though risks from Brexit and political uncertainties in Italy and other countries remain.

**IFI strategy**

We favor US and Europe over the UK and Asia. Key market drivers to monitor include 1) the pace of monetary policy changes from the Fed, ECB, BoJ and BoE, viewed on an aggregate basis for their impact on the US dollar and global credit flows 2) the development of US fiscal and regulatory policy changes and 3) the impact on costs, margins, demand and investment of announced tariffs and the potential for a more destabilizing global trade war.

### High yield (HY): Technicals supportive; geopolitical concerns may present headwind

**Rationale**

High yield credit fundamentals continue to be resilient in both the US and Europe as the macro environment remains largely supportive. However, we continue to monitor fundamentals for signs of slowing earnings growth.

Regarding technicals, we continue to see decreased supply in the high yield market as new issuance activity has come in below historical averages. In the US alone, gross supply has decreased more than 41% on a year-over-year basis and is forecast to remain at subdued levels through year-end.[1] While this has created a tailwind for the high yield asset class, the market has been negatively impacted by recent volatility – caused by ongoing geopolitical concerns, such as US-China trade policy and Italian budget concerns.

**IFI strategy**

We believe the largely positive macro backdrop, solid fundamentals and reduced new issuance levels will be supportive for the high yield credit market through year-end, but this could potentially be offset by market volatility associated with further increases in interest rates and increasing geopolitical concerns. With that said, we believe the high yield market offers some price appreciation potential with attractive coupon carry into year-end.

### Emerging markets (EM): Valuations remain favorable as funding pressures ease

**Rationale**

Valuations in EM sovereign credit remain favorable in both investment grade and high yield segments of the market, in our view. US dollar funding pressure has eased, but until short-term US interest rates are measurably lower, flows back into EM will likely remain limited. This leaves us with a more balanced market technical picture, given the prospect of an active new issue calendar the first quarter of 2019.

Deceleration in Chinese growth has spurred the Chinese government to implement targeted easing measures via monetary and fiscal policy, which should also provide near-term support that offsets trade concerns. Aside from concerns over the rising US dollar and tighter financial conditions, US foreign policy developments necessitate a higher risk premium in EM assets, in our view, but we think current spreads reflect this. Recent stability in the US dollar and steepening in the US yield curve has provided scope for EM credit spreads and currencies to recover, in our view.

**IFI strategy**

We continue to believe the market has overpriced risks to EM stemming from rising US interest rates and a stronger US dollar plus geopolitical concerns. While some EM countries face significant challenges, we do not see context for a broader EM crisis. In addition, fundamentals remain broadly supportive. As such, we continue to favor adding risk in a selective manner, focusing on those countries that are less externally vulnerable or that have solid policy anchors, especially at the lower end of the quality spectrum. An easing in US funding conditions would provide context for adding outright exposure to EM, given the improved valuations.

### US commercial mortgage backed securities (US CMBS): Positioning is key as the commercial real estate cycle progresses

**Rationale**

We expect commercial real estate rent growth and property price appreciation to continue. However, we believe the pace will slow as new commercial real estate supply dampens space absorption. Furthermore, we expect growth in e-commerce to remain a headwind for the retail property sector. On the bright side, lending conditions remain accommodative across property markets despite slightly tighter credit standards and higher interest rates. Additionally, we expect modest new issuance volumes to be absorbed by investors.

**IFI strategy**

Despite continued fundamental strength in the US commercial property sector, we are exercising caution in security selection as the real estate cycle continues to extend and central bank tailwinds have diminished. Given our neutral outlook on spreads, we prefer slightly seasoned credits that benefit from embedded property price appreciation and decreasing spread duration. Additionally, we expect to find opportunities in non-index, single asset/single borrower positions. We also expect to find opportunities in Agency CMBS, given an anticipated increase in near-term supply.

### US residential mortgage backed securities (US RMBS): Fundamentals remain favorable despite downshift in housing activity; compelling value in senior classes

**Rationale**

Though recent housing data reflect a downturn in construction and sales activity, the limited supply of existing homes against the backdrop of a strong labor market underpins our outlook for continued (but slowing) home price appreciation and strong borrower performance. In the residential securities market, positive technicals have recently faded. New issue supply has outweighed demand, driving most transactions to price wide of initial expectations. We generally view the sector as attractively priced, given our limited credit concerns, and we believe opportunities exist across investment grade classes and slightly seasoned non-investment grade Credit Risk Transfer (CRT) securities.

**IFI strategy**

We see better value in single-A through triple-B classes than we have for most of the year, and we favor adding moderate spread duration in slightly seasoned non-investment grade rated government-sponsored enterprise CRT securities as well as triple-B rated Non-Qualified Mortgage, seasoned loan securities and single-family rental bonds. Certain triple-A classes also appear compelling, with short duration profiles that offer limited exposure to higher benchmark rates. We prefer to avoid recently issued non-rated CRT B1s as increased risk layering and a deceleration in home price appreciation could drive elevated spread volatility in these classes.

### US asset backed securities (US ABS): Normalizing fundamentals, good defense against broader market volatility

**Rationale**

Fundamentals remain supportive in most consumer and commercial ABS sectors due to continued rational underwriting, current favorable-to-stable collateral performance trends and our positive near-term economic outlook. As the Fed continues its tightening cycle and the yield curve flattens, shorter-term ABS should remain in high demand, in our view. We remain cautious as volatility in the broader market has increased. However, uncertainty should be supportive of the relatively stable, shorter-duration ABS market.

**IFI strategy**

Relative attractiveness to corporate bonds has diminished for lower-rated esoteric and subordinate class ABS. However, we see some opportunities to invest at wider spreads, focusing at the top of the capital structure on liquid, amortizing benchmark and certain non-benchmark sectors, which typically benefit from additional spread on the steeper, short end of the yield curve. Given current broad market sentiment, we expect tiering to widen. As a result, our focus continues to be on larger, seasoned sponsors.

## Sector themes

### Commodities: Global supply and demand concerns have created commodity volatility

**Rationale**

Commodities have generally benefitted from broad global growth, which has increased global commodity demand. However, tariff-related uncertainties and recent US dollar strength pose near-term risks to the commodity space, coupled with broader concerns about slowing global growth. We still expect corporate and credit fundamentals to remain supportive, given anticipated organic deleveraging driven by earnings growth. While we are actively monitoring commodity demand risks, we believe that shifts in the commodity supply backdrop will continue to be key near-term price drivers. Additionally, certain commodities may benefit from the favorable demand flow-through impact of accelerated Chinese infrastructure investments, driven by credit easing and fiscal stimulus.

**IFI strategy**

We favor aluminum and copper producers, which tend to benefit from better supply/demand dynamics, and given more attractive bond valuations. We like selective exploration and production oil companies located in Latin America as well as certain Russian oil and gas producers. We also remain constructive on selective US midstream companies that are focused on cost of capital optimization and active deleveraging to stabilize or maintain investment grade ratings.

### Consumer story more nuanced globally, watching US fiscal policy influences

**Rationale**

The solid US labor market and consumer confidence are supportive of the consumer sector, but US consumers are more value and delivery conscious, while international retail demand remains uneven. We are watching the European consumer for post-Brexit behavior shifts.

**IFI strategy**

We favor certain US consumer sectors, including leisure, but are negative on department stores and mall-based retailers that lack differentiated products. In EM, we favor consumer sectors on a selective basis. We expect US automotive original equipment manufacturers (OEM) sector fundamentals to weaken, given an adverse trade environment, but we favor the sector on the margin, given our confidence that OEMs will be able to maintain an IG profile. European auto demand is proving resilient, which creates some potential in the European crossover vehicle segment. We are cautious on large European consumer goods companies, based on tight valuations and financial policies that favor equity.

### Post-merger and acquisitions (M&A) deleveraging plays

**Rationale**

M&A activity remains a moderate risk, driven by large cash balances and the need to reposition business portfolios. Certain recent transactions have elevated leverage profiles and seemed inconsistent with historical rating agency methodologies. Therefore, we have become very selective in deal participation.

**IFI strategy**

We prefer to play post-transaction bond issuance which is typically characterized by size, liquidity, concessions and credible plans for deleveraging. We believe an increasingly discriminatory approach to this strategy is warranted due to seemingly more relaxed credit agency ratings during what is potentially the later stages of the credit cycle.

| Technology, media and telecommunication (TMT): Data and connectivity |
|---|
| **Rationale** |
| The TMT landscape continues to evolve as companies contend with cord-cutting trends, the evolution of 5G, and ongoing media sector consolidation. |
| **IFI strategy** |
| We prefer exposure to issuers that build on connectivity – both via spectrum and towers – as well as those that benefit from the secular growth in data. |

## Yield curve themes

| Credit curve positioning impacted by US tax reform |
|---|
| **Rationale** |
| There was an increase in demand for longer-term credit ahead of the September deadline for US corporations to fund their pension plans at 2017 tax levels versus lower 2018 levels. Pension plans are still buying longer-term credit, which has flattened the credit curve. We believe this was likely a temporary shift around the tax deadline and should normalize. Over a longer time frame, IG corporate credit curves have steepened to compensate for the flattening of the US Treasury curve and to entice more investors to move out along the curve. This steepening of the corporate yield curve has stabilized more recently as 30-year bonds are finding an equilibrium level, although at higher levels than earlier in the year. 10-year bond yields have risen to a lesser extent, but are experiencing similar technicals. |
| **IFI strategy** |
| With the credit curve steepening, 30-year bonds are beginning to look attractive from a spread standpoint, in our view. However, we favor the 7 to 10-year part of the curve to take advantage of some of the steepness while maintaining lower volatility compared to the 30-year part of the curve. |

*Tony Wong, Head of Global Research, Joe Portera, CIO High Yield and Multi-Sector Credit, Michael Hyman, CIO Global Investment Grade and Emerging Markets, Mario Clemente, Head of Structured Investments*

1 Source: Bloomberg L.P., Dec. 12, 2018.

This section highlights the views of Invesco Fixed Income's credit analysts across a broad range of fixed income assets managed by Invesco.

**Global credit strategy**

# US housing market slows, but risks to broader economy limited

The US housing market's robust recovery since the global financial crisis is finally showing signs of deceleration. House price appreciation, which has outpaced income growth for several years, has slowed over the last several months and the recent pace of sales in the new and existing markets has failed to keep up with 2017 levels. We believe housing market conditions have downshifted, and factors related to affordability, supply, and the economy will likely steer housing fundamentals in the coming year. While we see challenges to any reacceleration in housing market activity, we nevertheless believe we are entering a period of housing market moderation, with limited risks to the broader economy.

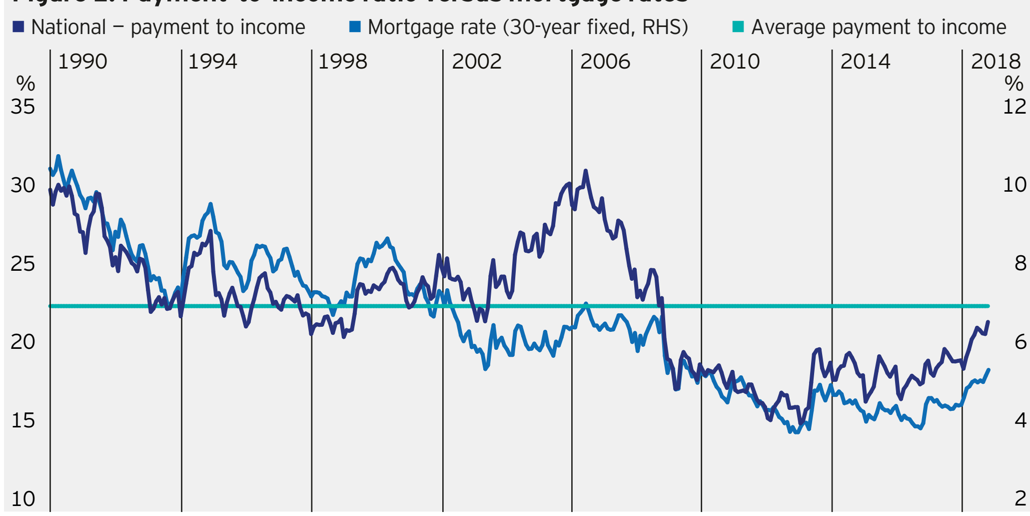
## US economy supportive of housing

The positive economic environment remains generally supportive of housing. Low unemployment, accelerating wage growth, and strong household balance sheets are driving demand for shelter. These factors also reinforce our view that gains in household formation and the transition from renting to home ownership should continue. We also recognize that economic fundamentals may be reaching an inflection point and could become less supportive of housing going forward. However, the financial health of mortgage borrowers, measured by household leverage and the dramatic improvement in credit scores suggest that today's borrower base has much greater financial capacity and creditworthiness to withstand normal economic fluctuations. This improved resiliency reinforces our view that deterioration in borrower credit performance is unlikely to pose a material risk to the general economy if we enter a recessionary period.

## Affordability concerns on the rise

Affordability, as measured by payment-to-income ratios, has shifted from a positive driver of housing to a headwind as strong price gains and increases in mortgage rates have pushed payments higher. Despite sustained price appreciation since 2012, housing has been historically affordable, helped until recently by income gains and low mortgage rates. However, the increase in mortgage rates of over 100 basis points since the summer of 2017 has pushed affordability on a national basis back to long-term averages (Figure 1). Cities which have realized above average house price appreciation, including Seattle, San Jose, Denver and Nashville, now have payment-to-income ratios well above their long-term averages.

**Figure 1: Payment-to-income ratio versus mortgage rates**



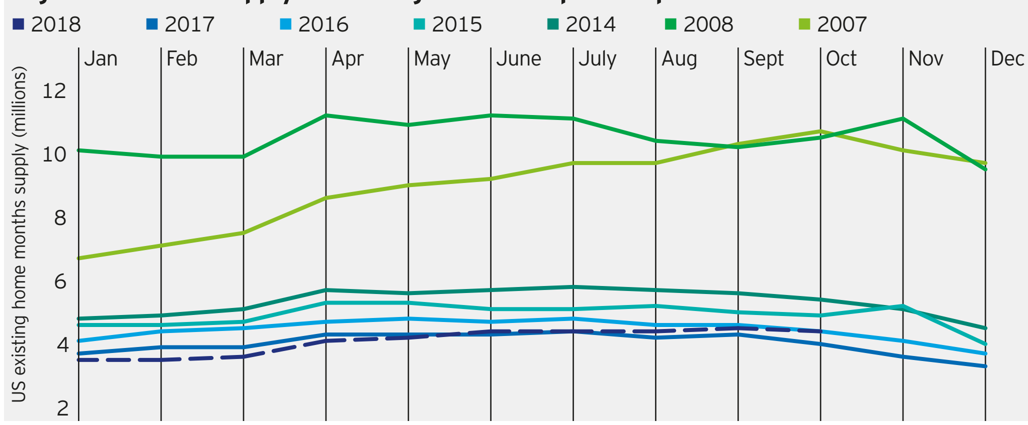

Source: CoreLogic, Bureau of Economic Analysis (BEA), Bloomberg L.P., data from Jan. 1, 1990 to Oct. 1, 2018.

Past levers used to maintain borrower affordability have been greatly curtailed during this housing market cycle. For example, lending products designed to lower a borrower's monthly payment, prevalent during the mid-2000s, now represent only a small fraction of the current origination mix, due to post-crisis legislation. As a result, we think house price appreciation will continue to slow as income growth becomes a stronger influence on prices buyers are willing, or often, able to pay. Cities where house prices have risen more than incomes are likely to experience more dramatic deceleration in house price appreciation.

**Housing supply likely contained**

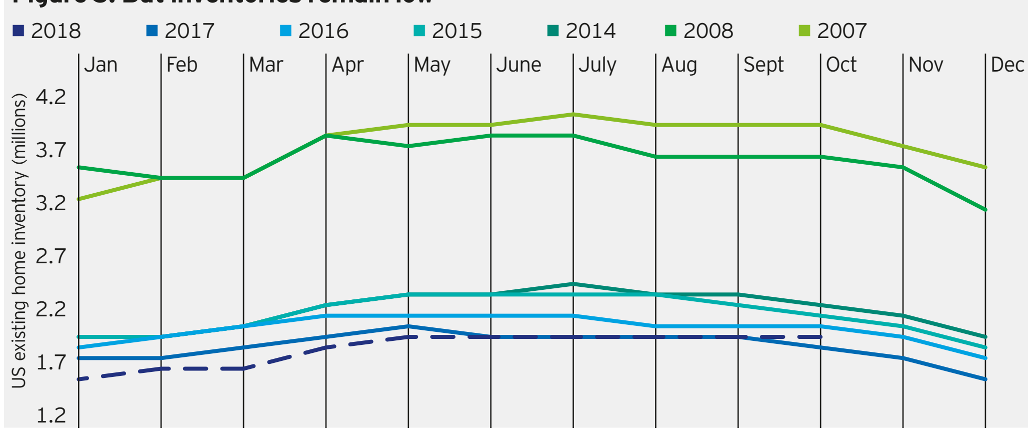
The risk of faster than expected price deceleration due to increased supply seems contained, in our view. We believe the two primary drivers of existing home inventory - owner sales and foreclosures - likely have limited room to expand. While the months supply of existing homes has increased, inventories still remain well below historical levels (Figures 2 and 3). Sales of existing homes will likely remain depressed as owners with historically low mortgage rates are disincentivized to forego their attractive mortgage rate through a voluntary move. While this should depress turnover, one beneficiary may be the home improvement industry, as the incremental cost of a move becomes less attractive versus renovation. Supply due to foreclosures, even in a macroeconomic downturn, is not a material concern, in our view, as conservative lending standards implemented post-crisis have resulted in a strong mortgage borrower base that will likely outperform past periods of housing market stress.

**Figure 2: Months supply of existing homes has picked up**




Source: National Association of Realtors, data from Jan. 2007 to Oct. 2018.

**Figure 3: But inventories remain low**




Source: National Association of Realtors, data from Jan. 2007 to Oct. 2018.

**New construction may face challenges**

Increased supply of new homes has been more dramatic compared to the existing home market, but we think this represents factors unique to new construction. Affordability in new construction is comparatively worse, with historically wide price premiums over existing homes. High input cost inflation related to land, labor, and materials has fed into new home pricing and incentivized builders to concentrate on high-end homes. This has resulted in a mismatch between higher-end supply and strong entry-level demand. While builders have recognized this dynamic, the supply shift toward entry-level homes will likely be slow as costs and inventories are addressed. Despite our positive long-term housing demand outlook, fueled by the continued entry of millennials to the market, we believe near-term challenges in new construction could lead to increased volatility in this area of the market.

**Outlook risks**

Risks to our view of housing are centered around the evolution of interest rates, the economy, and housing supply. Rising interest rates have eroded affordability over the past 12 months, but have recently taken a pause, which could potentially motivate buyers in the short-term. However, a dramatic move higher in rates would likely further erode affordability and pressure prices and sales. If the recent interest rate reversal is a sign of a deteriorating economy, a negative shift in employment could also become a headwind.

We believe the factors discussed above – declining affordability, rising mortgage rates and moderating economic growth impulses - suggest that the housing market is unlikely to continue posting above-trend price increases going forward. However, we also believe that several indicators suggest we are on a path to an orderly normalization and not a damaging unwind. We remain focused on the evolution of housing during this shift and continue to integrate information on the factors highlighted above as we adjust our outlook in the months ahead.

*Aaron Kemp, Senior Analyst, Ray Janssen, Senior Analyst*

**The bottom line**

# Conversation with Invesco Chief Economist, John Greenwood – inflation drivers and expectations

**John Greenwood**
Chief Economist

We were able to catch up with Invesco Chief Economist John Greenwood at IFI's Global Investors' summit on the underlying forces behind inflation and why he thinks an inflation "break-out" is not likely in the US or globally any time soon.

**Q: With high volumes of debt in the economy and US President Trump adding to the debt with a larger budget deficit, should we expect an outbreak of inflation?**
**A:** Many people believe that fiscal expansion or an increase in the budget deficit causes inflation, but as with other popular beliefs this one is entirely false.

Fundamentally there are only three ways to finance a budget deficit – by taxation, by borrowing or by printing the money. First, if the additional government spending is financed by taxation, then the private sector will have less to spend; increased public spending will offset reduced private spending. But clearly President Trump is not increasing taxes!

Second, if the increased government spending is financed by borrowing, then the private sector will be "crowded out" by the increased government borrowing. With President Trump expanding the deficit by USD200 billion per year, the private sector will find that there are about USD200 billion per year fewer funds available to borrow. In this case there is simply a switch from private sector borrowing to public sector borrowing, but no change in the total amount of spending.

The third option is for the central bank to allow or encourage faster money growth, which will boost total spending, including government spending. Only then – if the faster growth of money and credit is sustained — will inflation rise. Currently, however, the Fed has been keeping broad money growth (M2 or wider definitions) low and stable at around 4% per year, which implies there is minimal risk of an inflation upsurge.

**Q: Will the tight labor market (i.e. the Phillips curve) cause wages to rise, thereby triggering price inflation?**
**A:** A tight labor market — as indicated by the 3.7% US unemployment rate — is often thought to be a potential source of inflation resulting from upward pressure on wages. Economists use the "Phillips curve" to argue that when the unemployment rate falls below the "natural" rate, wages have generally risen, and in turn inflation.

The problem with this idea is that while it has worked sometimes in the past, it has not worked during the last three business cycles. In the words of William Dudley, the recently retired President of the Federal Reserve Bank of New York, "the Phillips curve is as flat as the plains of Kansas". The concept only worked when money growth was rapid, giving rise to overheating and inflation. In other words, higher wages were just one of the symptoms of higher spending, in turn due to faster money growth. But in recent years, money growth has been low and stable, with the result that the economy is not overheating. Indeed, if we look at Germany, Japan or Israel the unemployment rates are also at record lows and yet these economies are not seeing wage or price inflation in any significant degree. The common feature of all these economies is low money growth.

**Q: Have technology and globalization been responsible for keeping inflation subdued?**
**A:** No. Technological changes do bring lower prices, but only lower prices for some items, not for all goods and services. Lower prices for, say, cell phones or TVs, means that consumers who buy these items now have more money left over to buy other things – meals at restaurants, gym memberships, or more travel. The result is that these prices will be bid up because more money in aggregate is competing for the same limited resources. Ultimately, CPI is a weighted average of goods and service prices. If consumers need to spend less on IT products or less on goods made abroad, then they will have more funds available to bid up service prices in CPI relative to goods prices.

**Q: So you have told us what is not responsible for inflation. What then is responsible for the low inflation? And will things stay that way?**
**A:** In the words of Milton Friedman, "Inflation is always and everywhere a monetary phenomenon". This means that inflation can only occur when it is preceded by a sustained increase in the rate of growth of the broad quantity of money held by the public at large.

Unpacking that statement, it means first that there is a considerable lag between increases in the quantity of broad money and any rise in the inflation rate – typically about two years. It also means that even if US M2 growth were to accelerate over the next six months, inflation might not become a problem for another two years.

Second, unless the increase in broad money growth was sustained for at least six months or longer, there would be little impact on inflation.

Third, it means that the broad quantity of money is what matters, not M1 or even quantitative easing (QE) – the big increase in central bank balance sheets, or the monetary base, due to asset purchases in recent years. For example, despite large QE purchase programs in the US, Japan and the eurozone, inflation rates have remained subdued because broad money (M2 or M3) has grown at low rates in all three economies.

Looking forward, as long as broad money growth remains subdued (4% per year or less) the risk of a sustained upswing in inflation in the US, eurozone or Japan is negligible. In turn, that means interest rates and spending growth will remain low.

**Q: Could you explain the underlying transmission mechanism of inflation?**
**A:** Inflation results from too much money chasing too few goods (or assets or services). Excess money is jointly created by central banks and commercial banks together. New bank loans on the asset side create new deposits on the liability side, and deposits are the largest component of money.

Finding themselves with excess money balances, consumers and businesses will attempt to spend the excess by trying to reduce their balances to a normal level. But since they cannot, collectively or individually, reduce the amount of money outstanding, prices will ultimately be bid up – first in the asset markets, later in the markets for goods and services.

As spending increases, the economy will come closer to its "potential" growth rate, and as labor markets tighten wages will typically increase. However, these are symptoms of a strong economy driven by faster money growth, not independent causes of inflation. Causation runs from excess money (A) through low unemployment (B) to higher inflation (C), generating an inverse correlation between B and C (this is the Phillips curve).

In today's world, however, labor markets are tight after a decade of moderate growth. But because there has not been excess money growth, inflation is not the threat that it once was when unemployment was this low on previous occasions. Without A there can be no C. Past episodes of correlation do not imply causation.

**Please read the investment risk section at the end of this publication.**

## Fixed income market monitor

| | Coupon (%) | Yield to worst (%) | 1 month change in YTW | Option-adjusted spread: Current | 1 month change in spread | 10 year range min | 10 year range max | Returns: 1 mth (%) | 3 mth (%) | YTD (%) | 12 mth (%) |
|---|---|---|---|---|---|---|---|---|---|---|---|
| Global Aggregate (USD hedged) | 2.69 | 2.19 | -0.03 | 54 | 4 | 23 | 156 | 0.49 | -0.09 | 0.31 | 0.54 |
| U.S. Aggregate | 3.19 | 3.54 | -0.05 | 50 | 5 | 32 | 258 | 0.60 | -0.84 | -1.79 | -1.34 |
| U.S. Mortgage-backed | 3.59 | 3.65 | -0.10 | 35 | 1 | -16 | 181 | 0.90 | -0.35 | -0.81 | -0.49 |
| Global Inv Grade Corporate (USD hedged) | 3.50 | 3.49 | 0.11 | 143 | 19 | 55 | 515 | -0.25 | -1.38 | -2.15 | -1.54 |
| U.S. Investment Grade Corporate | 4.00 | 4.37 | 0.09 | 137 | 20 | 76 | 618 | -0.17 | -1.98 | -3.92 | -3.04 |
| Emerging Market USD Sovereign | n/a | 6.98 | 0.16 | 395 | 29 | 157 | 906 | -0.42 | -1.10 | -5.53 | -4.84 |
| Emerging Market Corporate | n/a | 6.22 | 0.15 | 327 | 27 | 120 | 1,032 | -0.16 | 0.18 | -2.35 | -2.04 |
| Global High Yield Corporate (USD hedged) | 5.97 | 6.92 | 0.44 | 449 | 52 | 231 | 1,845 | -0.98 | -1.71 | -0.52 | -0.23 |
| U.S. High Yield Corporate | 6.37 | 7.22 | 0.36 | 418 | 47 | 233 | 1,971 | -0.86 | -1.90 | 0.06 | 0.36 |
| Bank Loans | 5.95 | 6.15 | 0.19 | n/a | n/a | n/a | n/a | -0.82 | -0.13 | 3.51 | 3.91 |
| Municipal Bond | 4.68 | 2.87 | -0.14 | n/a | n/a | n/a | n/a | 1.11 | -0.17 | 0.08 | 1.13 |
| High Yield Municipal Bond | 5.13 | 5.10 | -0.02 | n/a | n/a | n/a | n/a | 0.70 | -0.95 | 3.86 | 5.21 |

## Treasury market monitor

| | Coupon (%) | Yield to worst (%) | 1 month change in YTW | Returns in local currency: 1 mth (%) | 3 mth (%) | YTD (%) | 12 mth (%) |
|---|---|---|---|---|---|---|---|
| United States | 2.36 | 2.93 | -0.10 | 0.89 | -0.53 | -1.27 | -0.96 |
| Canada | 2.30 | 2.23 | -0.17 | 1.29 | -0.05 | 0.59 | -0.06 |
| United Kingdom | 3.35 | 1.46 | 0.04 | -1.28 | -1.92 | -1.89 | -0.31 |
| Germany | 1.80 | -0.03 | -0.04 | 0.42 | 0.18 | 1.82 | 1.31 |
| Italy | 3.24 | 2.41 | -0.27 | 1.55 | 1.92 | -4.30 | -5.88 |
| Japan | 0.98 | 0.14 | -0.03 | 0.44 | 0.34 | 0.19 | 0.27 |
| China | 3.53 | 3.24 | -0.18 | 1.49 | 2.76 | 7.51 | 7.89 |
| EM Local Currency Governments | n/a | n/a | n/a | 1.72 | 2.61 | 1.88 | 3.04 |

## FX market monitor[1]

| | Current | 10 year range: min | max | Returns: 1 mth (%) | 3 mth (%) | YTD (%) | 12 mth (%) |
|---|---|---|---|---|---|---|---|
| EURUSD | 1.13 | 1.04 | 1.51 | 0.04 | -2.46 | -5.73 | -4.93 |
| USDJPY | 113.57 | 75.82 | 125.63 | -0.46 | -2.14 | -0.70 | -0.83 |
| GBPUSD | 1.27 | 1.20 | 1.85 | -0.13 | -1.63 | -5.65 | -5.74 |
| USDCNY | 6.96 | 6.04 | 6.96 | 0.24 | -1.83 | -6.42 | -5.10 |
| USDCHF | 1.00 | 0.72 | 1.23 | 0.99 | -2.96 | -2.40 | -1.50 |
| AUDUSD | 0.73 | 0.60 | 1.10 | 3.29 | 1.63 | -6.44 | -3.44 |
| CADUSD | 0.75 | 0.69 | 1.06 | -1.01 | -1.88 | -5.43 | -2.98 |
| EURJPY[2] | 128.44 | 94.31 | 157.95 | -0.54 | 0.33 | 5.32 | 4.30 |
| EURGBP[2] | 0.89 | 0.69 | 0.98 | -0.15 | 0.88 | 0.07 | -0.82 |

Sources: Bloomberg Barclays, J.P. Morgan, as of Nov. 30, 2018. Credit Suisse Leveraged Loan data as of Nov. 30, 2018. Within the Treasury monitor, United States is represented by Bloomberg Barclays US Treasury Index; Canada is represented by Bloomberg Barclays Global Treasury Canada Index; United Kingdom is represented by Bloomberg Barclays Sterling Gilts Index; Germany is represented by Bloomberg Barclays Global Treasury Germany Index; Italy is represented by Bloomberg Barclays Global Treasury Italy Index; Japan is represented by Bloomberg Barclays Global Treasury Japan Index; China is represented by Bloomberg Barclays China Aggregate Treasuries Index; EM Local Currency Governments is represented by J.P. Morgan GBI_EM Broad Diversified Index. In the Fixed Income Monitor, Global Aggregate is represented by Bloomberg Barclays Global Aggregate (US$ Hedged) Index; US Aggregate is represented by Bloomberg Barclays US Aggregate Index; US Mortgage-backed is represented by Bloomberg Barclays US Mortgaged-backed Index; Global Investment Grade Corporate is represented by Bloomberg Barclays Global Aggregate Corporate (US$ hedged) Index; U.S. Investment Grade Corporate is represented by Bloomberg Barclays Aggregate Corporate Index; Emerging Market USD Sovereign is represented by the J.P. Morgan EMBI Global Diversified Index; Emerging Market Corporate is represented by J.P. Morgan CEMBI Broad Diversified Index; Global High Yield Corporate is represented by the Bloomberg Barclays Global High Yield Corporate (US$ hedged) Index; U.S. High yield Corporate is represented by Bloomberg Barclays U.S. Corporate High Yield Index; Bank Loans is represented by the Credit Suisse Leveraged Loan Index; Municipal Bond is represented by Bloomberg Barclays Municipal Bond Index; High Yield Municipal Bond is represented by Bloomberg Barclays Municipal Bond High Yield Index. Yield to Worst (YTW) is the lowest expected yield calculation given maturity and call features. Option Adjusted Spread (OAS) is the yield difference relative to similar maturity Treasuries that incorporates call, put, sinking fund or paydown features of a bond. Past performance cannot guarantee future results. An investment cannot be made directly in an index. Returns less than one year are cumulative.

1 Positive number represents the currency appreciated against USD, negative number represents currency depreciated against USD.
2 Positive number represents the currency appreciated against EUR, negative number represents currency depreciated against EUR.

**Invoesco Fixed Income**

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### Recent IFI publications

1. **IFI Global Investors' Summit November 2018 Macro Overview,** December 2018, Rob Waldner, Chief Strategist, Head of Multi-Sector Portfolio Management, Tony Wong, Head of Global Research and Credit Strategy
2. **IFI Global Investors' Summit May 2018 Macro Overview,** June 2018, Rob Waldner, Chief Strategist, Head of Multi-Sector Portfolio Management, Tony Wong, Head of Global Research and Credit Strategy
3. **Responsible investing in focus: Emerging market bonds,** May 2018, Julie Salsbery, Senior Client Portfolio Manager and Shane Gallagher, Associate Client Portfolio Manager
4. **Do demographics explain structural inflation?** May 2018, Ray Janssen, Senior Analyst
5. **Why should investors consider credit factors in fixed income?** April 2018, Jay Raol, Ph.D., Director of Invesco Fixed Income Quantitative Research and Shawn Pope, Macro Quantitative Analyst, Invesco Fixed Income

## Invesco Fixed Income

# Global perspective and deep local market knowledge

### Global presence

- Regional hubs in Atlanta, London and Hong Kong
- IFI is in ten locations with additional Invesco colleagues in two
- USD311.1 billion in assets under management

### Experienced team

- 173 investment professionals
- Averaging 19 years of industry experience
- Deep macro and credit research
- Focused and accountable portfolio management

### Global locations


Source: Invesco. For illustrative purposes only.

### Invesco Fixed Income teams

| | Team members | Average years with Invesco | Average years in industry |
|---|---|---|---|
| Portfolio management and trading | 73 | 12 | 21 |
| Global research | 100 | 9 | 16 |
| Total investment professionals | 173 | 10 | 19 |
| Business professionals | 53 | 12 | 19 |
| Total fixed income employees | 226 | 11 | 19 |

Source: Invesco.

As of June 30, 2018. Subject to change without notice.
Investment specific experience for investment professionals.

## Investment risks

The value of investments and any income will fluctuate (this may partly be the result of exchange rate fluctuations) and investors may not get back the full amount invested. Past performance is not a guide to future returns.
Fixed-income investments are subject to credit risk of the issuer and the effects of changing interest rates. Interest rate risk refers to the risk that bond prices generally fall as interest rates rise and vice versa. An issuer may be unable to meet interest and/or principal payments, thereby causing its instruments to decrease in value and lowering the issuer's credit rating. The values of junk bonds fluctuate more than those of high quality bonds and can decline significantly over short time periods.
The risks of investing in securities of foreign issuers, including emerging market issuers, can include fluctuations in foreign currencies, political and economic instability, and foreign taxation issues.
The performance of an investment concentrated in issuers of a certain region or country is expected to be closely tied to conditions within that region and to be more volatile than more geographically diversified investments.
Mortgage- and asset-backed securities, which are subject to call (prepayment) risk, reinvestment risk and extension risk. These securities are also susceptible to an unexpectedly high rate of defaults on the mortgages held by a mortgage pool, which may adversely affect their value. The risk of such defaults depends on the quality of the mortgages underlying such security, the credit quality of its issuer or guarantor, and the nature and structure of its credit support.
Asset-backed securities are subject to prepayment or call risk, which is the risk that the borrower's payments may be received earlier or later than expected. Commodities may subject an investor to greater volatility than traditional securities such as stocks and bonds and can fluctuate significantly based on weather, political, tax, and other regulatory and market developments.

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