Bond Compass
Navigating the Turbulence

Q4 2019

04. Investor Sentiment — Flows and Holdings

10. PriceStats®

13. Interview with a Portfolio Manager

17. Q4 Investment Outlook

21. Panel Discussion — Politics, Portfolios and the Place of ETFs

STATE STREET GLOBAL ADVISORS SPDR®
$393
billion in indexed fixed income assets

The Scale to Specialize

- State Street Global Advisors’ global scale enables our portfolio managers, traders and investment strategists to be sector specialists and based in their geographic markets
- Our dedicated capital markets teams provide 24-hour coverage across global markets, offering enhanced liquidity and cost-efficient* trading strategies
- Entrusted with $393 billion in indexed fixed income assets, managing 30+ currencies across 40 different countries**

23
years of bond index investing experience

Proven Track Record

- 23 years of bond index investing — our first fixed income index fund launched in 1996
- Manage more than 100 fixed income index strategies, providing choice for investors
- More than 100 fixed income professionals dedicated to conducting research, managing risks and costs, and supporting our clients

100+
fixed income index strategies

Innovative Solutions for Bond Investors

- Comprehensive range of cost-effective* ETFs
- Offering access to government and corporate bonds across the yield curve, using a consistent index methodology

* Frequent trading of ETFs could significantly increase commissions and other costs such that they may offset any savings from low fees or costs.
** State Street Global Markets, as of 30 June 2019.
Contents

04 **Investor Sentiment — Flows and Holdings**

A snapshot of global fixed income flows, holdings and valuations, based on data provided by State Street Global Markets.

10 **PriceStats®**

Quarterly measure of inflation based on prices from millions of items sold by online retailers, helping investors anticipate and evaluate the impact of inflation.

13 **Interview with a Portfolio Manager**

Diane Gibb, portfolio manager at State Street Global Advisors, discusses how T-Bills fit into investor portfolios, and why ETFs are an effective way to access the exposure.

17 **Q4 Investment Outlook**

State Street Global Advisors has identified the key considerations for investors in the coming quarter, and how markets can be navigated using SPDR ETFs.

21 **Panel Discussion**

Our panel of experts discuss the confluence of politics and central banks, portfolio positioning in the current yield environment, and the role of fixed income ETFs in the broader asset management industry.
Investor Sentiment — Flows and Holdings

A snapshot of global fixed income flows, holdings and valuations, based on data provided by State Street Global Markets.*

* The fixed income flows and holdings indicators produced by State Street Global Markets, the investment, research and trading division of State Street Corporation, are based on aggregated and anonymized custody data provided to it by State Street, in its role as custodian. State Street Global Advisors does not have access to the underlying custody data used to produce the indicators.
State Street Global Markets builds indicators of aggregated long-term investor behaviour in fixed income markets from a substantial subset of $10 trillion worth of fixed income assets under custody and administration at State Street.²

This captures behavioural trends across tens of thousands of portfolios and is estimated to capture just over 10% of outstanding fixed income securities globally.

Analysis

Demand for US Treasuries surged to a near five-year high across Q3. Although much of the US economic data across the quarter was relatively robust, especially core inflation, broader macroeconomic weakness in light of the trade war led to the US Federal Reserve’s (Fed’s) dramatically dovish turn in rhetoric.

The Fed went to some lengths to describe the change in its rate stance as a precautionary measure, but the length of the current cycle and curve inversion have markets worried about recession. Weak sentiment data at the beginning of Q4 has furthered these concerns. If, however, investors were expecting recession, we would anticipate seeing much weaker demand for high yield corporate bonds. Instead, demand for high yield bonds remains close to its five-year median level, and demand for investment grade is much stronger. So far, this appears consistent with a slowdown, not a recession.

There is a similar message from fixed income behaviour outside of the US. The European Central Bank’s (ECB’s) return to QE has been anticipated for the better part of six months, and its delivery did not disappoint. Demand for Italian government debt, a consistent theme in previous editions of Bond Compass, remains strong this quarter. Finally, for all the optimism and pessimism that ebbed and flowed around the trade war this summer, it is notable that demand for emerging market debt (EMD) has recovered back to median levels. As with the US corporate bond flows, this is not the behaviour we would associate with the onset of a global recession.

² Source: State Street Global Markets, as of 30 September 2019.
Weakest flow/lowest holding over the last five years

<table>
<thead>
<tr>
<th>Region</th>
<th>0%</th>
<th>10%</th>
<th>20%</th>
<th>30%</th>
<th>40%</th>
<th>50%</th>
<th>60%</th>
<th>70%</th>
<th>80%</th>
<th>90%</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>US Sov.</td>
<td>16</td>
<td>43</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>97</td>
</tr>
<tr>
<td>US TIPS</td>
<td></td>
<td></td>
<td>66</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>US Treasury 1 to 3</td>
<td>4</td>
<td></td>
<td>39</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>US Treasury 3 to 5</td>
<td>7</td>
<td></td>
<td>34</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>US Treasury 5 to 7</td>
<td>44</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>US Treasury 7 to 10</td>
<td>27</td>
<td></td>
<td></td>
<td></td>
<td>59</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>US Treasury 10+</td>
<td>57</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>Euro Sov</td>
<td>17</td>
<td></td>
<td>37</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>Euro Govt 1 to 3</td>
<td>37</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>Euro Govt 3 to 5</td>
<td>32</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>Euro Govt 5 to 7</td>
<td>38</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>Euro Govt 7 to 10</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>Euro Govt 10+</td>
<td>40</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>Italy</td>
<td>6</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>Germany</td>
<td>15</td>
<td>23</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>France</td>
<td>3</td>
<td>10</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>Spain</td>
<td>6</td>
<td>15</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>UK</td>
<td>19</td>
<td>52</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>EM</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>Euro Corp</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>US HY</td>
<td>66</td>
<td>81</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>US IG</td>
<td>85</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
<tr>
<td>US MBS</td>
<td>92</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>79</td>
</tr>
</tbody>
</table>

Source: State Street Global Markets, as of 30 September 2019. Flows and holdings are as of date indicated. They should not be relied thereafter. *As at quarter end.
US Treasuries: The Canary Sends Its Signal

The Treasury market has acted like the canary in the coal mine all year, and in Q3 it sent the strongest signal that significant economic concerns exist. Of note was the decline in 10-year Treasury yields to their lowest levels since 2016. This was somewhat precipitated by the first Fed rate cut in over a decade, which was met with greater recessionary concerns as the 2s10s curve inverted for the first time since the Global Financial Crisis.

Trade developments were behind much of this dour view and turned more optimistic near the end of the quarter. Yields subsequently retraced two-thirds of their mid-summer downward move, while the curve re-steepened back into positive territory. But as we have learned all year, trade dynamics are fluid. Today, yields are testing the summer lows, and the curve is gravitating between a steepening and flattening bias.

Investors have been steadfast in their positive view of Treasuries. However, while buying has approached the strongest levels we have seen over the past five years, positioning is still underweight. The combination of these two dynamics means that there may be more upside for US rates investors. It is also interesting to note the disparate flows based on maturity buckets. The strongest flows remain in the short end of the curve out to five years, while weaker flows, and even selling, have emerged in the belly out to the long end. This ultimately reflects a steepening curve bias, which could be anticipating further rate cuts by the Fed to stave off recession.

US Corporates: Gains Amid Investor Selectivity

US corporate bonds have been one of the better-performing asset classes this year. Total returns for the investment grade sector topped 11% through the first nine months, marking the strongest gains in a decade. Investor selectivity has been evident during this period, however, as high yield bonds have only posted a 7% return — not bad, but it certainly shows investor hesitancy to add credit risk in the reach for yield.

The primary market has reflected this dynamic as well, with higher grade issuance at near-record levels and junk sales closer to recent averages. Given that negative-yielding debt has quickly crept into the corporate market, peaking at more than $1 trillion this summer, the positive yield and spread offered by US corporates has been evident in investor behaviour.

Flows into the investment grade and high yield markets were positive during the summer months. This was in keeping with the gradual improvement seen in economic data, at least up until October. The question for Q4 will be whether this demand will be sustained in the face of further evidence that the US economy is slowing more quickly. For the moment, the best we can say is that investor attitudes toward corporate and even high yield debt are not consistent with positioning for an imminent recession.

Source: State Street Global Markets, Bloomberg Finance L.P., as of 30 September 2019. Flows and holdings are as of the date indicated. They should not be relied on thereafter.
Eurozone Sovereigns: The Struggle is Real

In Europe, investors are increasingly struggling to find bonds with positive yields. As a result, the go-to trade for much of this year has been for investors to systematically reduce their underweight in Italian government bonds. This has occurred in spite of weakness in Italian economic data, political risk and an ongoing budget dispute with the EU. The lure of positive yields and the potential for ECB buying have outweighed all of these risks.

Now that ECB buying is here, though, we note that demand for Italian debt is finally beginning to moderate. Over the quarter, demand for Italian treasury bonds (BTPs) was still strong, in the 75th percentile of past flows. However, this was the slowest inflow since April. And the demand over the past 20 days shows that investors were actually net sellers of BTPs for the first time since February. This may just be an aberration in what has been a robust multi-month trend, but as the new coalition attempts to finalise its 2020 budget, the wobble in the flows is a reminder that investor sentiment can go in both directions.

Elsewhere in European markets, it is notable that demand for corporate debt remains strong in the face of growing evidence of recession. Meanwhile, long-term investors continue to shun Gilts. Given the possibility of a springback in yields in the event of a delay — or even the remote possibility of a deal — it appears they are not being used to hedge no-deal risk.
EMD: Cause for Reflection, and Optimism

For all the potential pessimism about growth embedded in the robust nature of aggregate fixed income flows this quarter, the resilience of demand for local currency emerging market debt (EMD) suggests some pause for thought. If the US and global economies were about to be tipped into recession by another negative twist in the trade war and possibly Brexit, we would expect investors to sell their holdings of EMD once again.

The fact that they are not selling EMD is cause for optimism. Indeed, the most recent flows for September were actually more positive than for the quarter as a whole. This could be explained by optimism ahead of October’s trade talks and by the favourable trends in EM inflation, as noted in our PriceStats® indicators (see page 12). This is producing a combination of high and falling rates and, in some cases, relatively stable currencies that prove attractive to long-term investors. Over the quarter, local currency bonds from Chile, Indonesia, Malaysia, Mexico, Peru and Thailand all saw above-average inflows.

Source: State Street Global Markets, Bloomberg Finance L.P., as of 30 September 2019. Flows and holdings are as of the date indicated. They should not be relied on thereafter.
Quarterly measure of inflation based on prices from millions of items sold by online retailers, helping investors anticipate and evaluate the impact of inflation.
PriceStats® provides high-frequency measures of inflation and real exchange rates drawn from prices on millions of items sold by online retailers. This real-time pulse of global economic trends helps investors anticipate and evaluate the impact of inflation, including the impact on monetary policy and the degree of exchange rate misalignments.

This information is available on a daily basis from State Street Global Markets: globalmarkets.statestreet.com.

US: Unfriendly Inflation Trend

Headline inflation remained conveniently benign across Q3. If anything, the trend in online data has been softer than the official data. This is not surprising, as research shows that online data can sometimes be more sensitive to moves in both energy prices and exchange rate trends.

Beyond the headlines, the inflation trend is somewhat less friendly. The decline in annual inflation owes much to weaker food and energy prices. Already apparent in most measures of core inflation in the past four months, this will become even more clear in headline inflation in Q4 as last year’s collapse in energy prices drops out of the annual inflation calculation. Headline will soon join core inflation above 2%, and while this alone will not stop the Fed easing cycle, it does signal that the Fed's inflation pass is soon to be over.

Source: State Street Global Markets, as of 30 September 2019.
Eurozone: Inflation Low but Stable

Online inflation across the eurozone has been weaker than the official data for almost a year. However, the release of the flash estimate for September suggests the series has finally converged on an annual inflation rate of 0.9%. This is far too low for comfort for the ECB, but they can at least take some consolation that the downtrend in online data appears to have stabilised. With core inflation also stuck around 1%, the implication is that the disinflation trend should now stabilise and that, for the moment at least, we are not headed into a recessionary and deflationary spiral.

![PriceStats® Daily Eurozone Inflation Index](image)

Source: State Street Global Markets, as of 30 September 2019.

Emerging Markets: Sharp Decline in Q3

With the trade war rumbling on (at the time of writing) and signs of weaker global growth spreading even to the US, this is potentially an unfavourable environment for emerging market (EM) assets. However, at least inflation is not a worry — quite the opposite, in fact. Online inflation measures in a number of large EM economies, especially Brazil and Turkey, fell sharply in Q3. This is likely to hit a trough in Q4 as last year’s collapse in energy prices drops out of the calculations. Nevertheless, in a number of cases this inflation trend will support ongoing and aggressive easing from EM central banks.

![PriceStats® Daily EM Inflation Index](image)

Source: State Street Global Markets, as of 30 September 2019.
Interview with a Portfolio Manager

Diane Gibb, portfolio manager at State Street Global Advisors, discusses how T-Bills fit into investor portfolios, and why ETFs are an effective way to access the exposure.
Interview with Diane Gibb
SPDR Bloomberg Barclays 1–3 Month T-Bill UCITS ETF

About the Portfolio Manager

Location
London

Industry experience
35 years

First industry role
Sterling Short Duration Portfolio Manager

First song purchased
Until You Come Back to Me, Aretha Franklin

About the Fund

<table>
<thead>
<tr>
<th>SPDR Bloomberg Barclays 1–3 Month T-Bill UCITS ETF</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>IncomeTreatment</strong></td>
<td><strong>Accumulating</strong></td>
</tr>
<tr>
<td>Inception Date</td>
<td>17 July 2019</td>
</tr>
<tr>
<td>TER</td>
<td>0.10%</td>
</tr>
<tr>
<td>AUM</td>
<td>$6.84 million</td>
</tr>
<tr>
<td>Bloomberg Ticker</td>
<td>ZPR1 GY</td>
</tr>
<tr>
<td>Trading Currency</td>
<td>USD</td>
</tr>
</tbody>
</table>

Source: All data sourced from State Street Global Advisors and Bloomberg Finance L.P., as at 30 September 2019. Some of the products are not available to investors in certain jurisdictions. Please contact your relationship manager in regards to availability.
What experience does State Street Global Advisors have managing this type of ETF exposure?

State Street Global Advisors has managed US Treasury Bill (T-Bill) exposure in an ETF since 2007. During this period we have navigated varying market environments from the Global Financial Crisis, the last US recession and the subsequent longest US economic expansion on record.

SPDR is a leading ETF provider in the US T-Bill market. The SPDR Bloomberg Barclays 1–3 Month T-Bill UCITS ETF (ZPR1 GY)* mirrors the strategy of a $8.9 billion** ETF offered by State Street Global Advisors in the US and targets the T-Bill market by tracking the Bloomberg Barclays U.S. Treasury Bills 1–3 Month Index.

How are investors using US T-Bill ETFs within their portfolios?

A slowing global economy, combined with continued uncertainty surrounding US-China trade negotiations, has led to bouts of increased market volatility. US government T-Bills are often seen as a place to invest in such times of market uncertainty.

This ‘flight to safety’ has been evident in daily US T-Bill ETF flows, which saw increased inflows during recent periods of negative market sentiment, particularly in May and August. For those reluctant to invest in equities or riskier fixed income markets at current levels, US T-Bills can provide an alternative option that allows for a more selective approach in terms of asset allocation timing.

According to our colleagues in State Street Global Markets, institutional investor cash levels are also on the rise. Their data reveals an increase in May and, subsequently, a steady increase since mid-July. US T-Bills are less sensitive to interest rate risk due to their ultra short duration and, therefore, can be used to help investors with cash and liquidity management. The current yield to maturity of the SPDR Bloomberg Barclays 1–3 Month T-Bill UCITS ETF is 1.92%, which is attractive considering the 10-year US Treasury yield is 1.80% (as of 18 September).

*Some of the products are not available to investors in certain jurisdictions. Please contact your relationship manager in regards to availability.

**As of 14 October 2019.
Why would someone use an ETF for this exposure when the underlying market is liquid, cheap and easy to access?

ETFs are an alternative means of gaining exposure to the US T-Bill market. The liquidity that ETFs provide actually complements the underlying market, especially for some investors who may not necessarily have experience in trading US T-Bills or want to simplify access further.

For example, bond ETFs do not mature. Individual treasury bills have a fixed, unchanging date at which they mature and investors receive their principal in cash unless the position is sold beforehand. Bond ETFs, however, maintain a relatively constant maturity, which is the weighted average of the maturities of all the treasury bills in the ETF.

The SPDR Bloomberg Barclays 1–3 Month T-Bill UCITS ETF is an accumulating fund which invests in T-Bills that have maturities ranging between 1 to 3 months. As a result, bonds are bought and sold by State Street Global Advisors to keep the ETF’s maturity in line with the underlying index. This monitoring and trading process is effectively outsourced to State Street Global Advisors, which would otherwise need to be performed by the investor if they were directly invested in the underlying market.

For infrequently traded credit securities in an ETF, to what extent would market stress in the underlying bonds contribute to the ETF being harder/more expensive to trade?

As the investment objective of an ETF is to replicate its benchmark, index inclusion criteria are an important consideration. The inclusion criteria of a well-constructed index are typically designed to exclude illiquid securities. This can be achieved by including a minimum issuance size or excluding specific bond types, for example.

The inclusion criteria of the Bloomberg Barclays Euro Aggregate Index are designed to provide diversification via a large number of constituents, and this helps to mitigate liquidity issues caused by large trade orders. However, no index provider can guarantee that less liquid bonds will not become constituents of their indices.

A well-constructed inclusion criterion provides an initial barrier to entry but the portfolio management technique of stratified sampling can also be used, particularly for credit exposures. Working in partnership with our traders, State Street Global Advisors' portfolio managers can avoid purchasing less liquid securities by trading securities with similar characteristics and contribution to risk.

In any case, less liquid securities do not necessarily mean they are harder to execute or will incur greater trading costs. Faced with such a scenario, orders are unlikely to be shown to multiple counterparts, especially when trading in large size in illiquid markets. Where necessary, the most appropriate dealer is determined through market insight from our trading desks. Our traders will work orders for illiquid securities and for large positions but control the process to understand market impact rather than leave a broker with discretion over the order.
State Street Global Advisors has identified the key considerations for investors in the coming quarter, and how markets can be navigated using SPDR ETFs.
This year, a series of geopolitical shocks have hit business sentiment in an already aged expansion. However, these shocks have been tempered by an almost universal adoption of easier monetary and fiscal policies. On the US-China trade front, tensions have ratcheted up during the past few months. And in politics, turmoil persists in the US and UK.

Meanwhile, disappointing data, particularly in Europe, has softened growth prospects. After a material downgrade to growth in the euro area and UK, economists expect global GDP to expand below trend, at c. 2.2–2.3% annualised in the fourth quarter. A stall in global profit growth, due to margin compression over the past year, amplifies the downside risks. Keeping dry powder could be a solution for uneasy times.

**Investment Theme #1**

**Stay Liquid**

<table>
<thead>
<tr>
<th>Funds in Focus</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPDR Bloomberg Barclays 1–3 Month T-Bill UCITS ETF</td>
</tr>
<tr>
<td>SPDR Bloomberg Barclays 1–3 Year U.S. Treasury Bond UCITS ETF</td>
</tr>
<tr>
<td>SPDR Bloomberg Barclays 1–3 Year Euro Treasury UCITS ETF</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>How Can Investors Navigate This Theme?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Stay nimble in liquid instruments. While euro short bonds and bills are very negative, the US market enjoys both positive and higher yields. Outside of the repo market travails, the 1–3 month T-Bills appear to be a viable option for USD portfolios and those investors who view the dollar as well anchored at their current level for the medium term.</td>
</tr>
</tbody>
</table>

In the EUR and GBP space, we see opportunity in using short-dated government bond exposure. This approach would allow an investor to potentially benefit from the further steepening of the front end of the curve for Gilts (as the Bank of England advertised possible early rate cuts) and support from the ECB action in EUR, whilst also storing a bit of dry powder to buy on dips.

Source: State Street Global Advisors, Bloomberg Finance L.P., as of 27 September 2019. LQA (or Liquidity score) is measured on a scale of 1 to 100 (100 being the most liquid) that summarizes the relative liquidity of an instrument in the covered universe. Liquidity in this sense is the ability to sell a security at the lowest cost for a comparable range of volumes. This data is indicative as of the date stated and is subject to change with market conditions.

Some of the products are not available to investors in certain jurisdictions. Please contact your relationship manager in regards to availability.
Investment Theme #2
Find the Balance Between Sub-Trend Growth and Recession

Market expectations in 2019 have shifted from Fed tightening to easing and, potentially, to ample loosening at light speed. Last week, the OECD lowered its 2019 forecast for global growth from 3.2% to 2.9% and 3.4% to 3.0% in 2020. This deteriorating backdrop has led bond yields across G6 countries to fall dramatically, and they could remain anchored at these levels with further accommodation on the horizon as, according to the OECD, “the effectiveness of monetary policy could be enhanced by stronger fiscal and structural policy support”.

In this environment, and despite two hawkish cuts from the Fed, the market expects further moves. While ECB actions may become more politicised after Mario Draghi’s latest actions and the recent departures at the board of the eurozone institution, continued easing will happen. Indeed, negative rates in the eurozone are expected to last for a prolonged period of time with the market anticipating, potentially, three more years of ultra-low yields. In the meantime, Brexit uncertainties remain, and the 31 October deadline (in place at the time of writing) still looms large. Thus, the MPC of the Bank of England stands ready to act.

Yield to Worst Exposure of Indices by Maturity Buckets

<table>
<thead>
<tr>
<th>Yield to Worst in %</th>
<th>Total</th>
<th>1–3 Yrs</th>
<th>3–5 Yrs</th>
<th>5–7 Yrs</th>
<th>7–10 yrs</th>
<th>10–20 yrs</th>
<th>&gt; 20 Yrs</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bloomberg Barclays Intermediate Corporate Index</td>
<td>2.52</td>
<td>2.20</td>
<td>2.41</td>
<td>2.65</td>
<td>2.92</td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>Bloomberg Barclays EuroCorporate Index</td>
<td>0.38</td>
<td>-0.01</td>
<td>0.27</td>
<td>0.48</td>
<td>0.65</td>
<td>0.88</td>
<td>1.84</td>
</tr>
<tr>
<td>Bloomberg Barclays Sterling Corporate Index</td>
<td>2.03</td>
<td>1.37</td>
<td>1.65</td>
<td>2.00</td>
<td>2.04</td>
<td>2.26</td>
<td>2.54</td>
</tr>
<tr>
<td>Bloomberg Barclays U.S. Treasury: 7–10 Year Index</td>
<td>1.65</td>
<td>–</td>
<td>–</td>
<td>–</td>
<td>1.65</td>
<td>–</td>
<td>–</td>
</tr>
</tbody>
</table>


How Can Investors Navigate This Theme?

Consider intermediate credit and Treasuries to play the curve steepening. As the market is mostly split between a slowdown and a recession scenario, a potential strategy is to keep some level of duration and quality in the portfolio. Should the curves further steepen as central banks follow the expected rate path, short and intermediate corporate bonds in USD could benefit.

In the EUR and GBP spaces, where real yield is mostly negative, investment grade corporate exposures can help mitigate some of the impact. If the negative scenario does not amplify and Brexit does not end up in a no-deal scenario, EUR and GBP corporate bond spreads could stay within their recent ranges of 100–110bps and 140–150bps, respectively, for all maturity indices.

In a more adverse scenario, US Treasuries could potentially provide a safe haven, and 7–10 year maturity bonds, with duration of 6.9 and yield to maturity of 1.8%, are an interesting yield versus duration trade-off for performance. We have also seen some appetite from institutional investors over the third quarter (see section 1).

Some of the products are not available to investors in certain jurisdictions. Please contact your relationship manager in regards to availability.
Investment Theme #3
Look for Carry and Positive Real Yield

Near-term risks in the China-US trade dispute make equity positions in emerging markets (EM) more challenging to hold. As such, we often see investors preferring EM bonds. Flows in ETFs have shown that preference year to date, and the positioning of long-term investors may also become more positive.

Continuing from last quarter is the ongoing trend that, on balance, we expect EM central banks to cut rates. Meanwhile, the recent readiness of the Fed to act, via rate cuts, has not dramatically lowered the USD. This leaves further potential upside from EM currencies if USD weakening develops. With inflation lower and growth trajectories set to converge gradually, nominal bonds issued by sovereign EM issuers, in local currency, could have the potential to generate positive real performance.

Last, investor flows into EM debt tend to trail the change in real yield differential between emerging and developed markets. Meanwhile, institutional investors are still underweight the sector but the need for yield could help make the case for more EM debt in long-term allocations.

EM-DM Real Yield Differential 12m Lead vs. EM Bond Flows

Source: State Street Global Advisors, Morningstar Direct, Bloomberg Finance L.P., as of 30 August 2019. Flows are as of the date indicated, are subject to change, and should not be relied upon as current thereafter.

Fund in Focus
SPDR Bloomberg Barclays Emerging Markets Local Bond UCITS ETF

How Can Investors Navigate This Theme?
Go local and hard. The benchmarks are becoming more diversified, China has started to enter certain indices (such as Bloomberg Barclays), and the convergence of growth trajectories could benefit these markets as yields become lower and currencies potentially appreciate versus the USD.

Nominal bond exposure across EM sovereigns comes from close to two dozen countries, with a yield of 4.5% and duration of 6.6. It can provide the benefits of further easing across EM, as central banks have cut rates more aggressively recently. These higher yields offer an interesting degree of carry. CNY-denominated government bonds are gradually being integrated in the index (3% now), adding diversification. In USD, one approach could be to focus on short-dated EM sovereign bonds. An index with yield of 4.3% and duration of 2.3 may provide compelling real yield without undue duration spread risk.

Some of the products are not available to investors in certain jurisdictions. Please contact your relationship manager in regards to availability.
Our panel of experts discuss the confluence of politics and central banks, portfolio positioning in the current yield environment, and the role of fixed income ETFs in the broader asset management industry.
Section 1: Politics and Central Bank Actions

Richard Lacaille  
Global CIO, State Street Global Advisors

For central banks, what is the trade-off between political risk and independence? How will this evolve, and is it really an issue?

William Hobbs  
CIO, Barclays Investment Solutions

It’s a fascinating topic but the point we make to our clients is that a battle between politicians and central bankers is not a new thing. President Lyndon Johnson hauled the then central bank chair down to his ranch, shoving him around the room so he would cut interest rates and print money because ‘his boys were dying in the mud every day over in Vietnam’.

It’s also interesting that Bill Dudley [former President of the Federal Reserve Bank of New York] recently suggested that central banks could have a ‘meta responsibility’. This interpretation of their mandate is that, if the biggest threat to their inflation mandate is the president, then they have to override him. That seems too extreme for us, but it is an interesting debate. In this economic cycle, central bank policy has evolved and reduced the bond markets to a sort of policing role for the world’s governments. Previously, political dysfunction was rewarded with higher interest rates; that doesn’t seem to be the case at the moment. We hope that the central banks will remain independent.

Frederick Mellors  
CIO, Head of Fixed Income Strategy and Cross Asset, UBS Wealth Management

Agreed. It’s not the first time that a US president has put pressure on the Chair of the Federal Reserve. In the Bush, Clinton and Obama presidencies, the focus was on exerting influence through back channels. However, Trump clearly doesn’t operate in this way. The market seems to be ignoring his pressure, potentially because there’s no credibility behind it given the Fed’s independence and the role of Congress.

The key question is whether Trump gets re-elected, whether he’s able to fill the two current vacancies on the Fed and therefore not extend Jerome Powell’s tenure. Ultimately, central bank credibility is very important — they have ensured inflation stability for the last two decades — and it’s likely that with both the Fed and ECB that there’ll be both opportunities and volatility over the next few years.

Richard Lacaille  
The US-China trade war is an example of where the Fed may need to make political judgements and processes. Does this make their job harder, in terms of being independent?
Richard Lacaille
Fixed Income Research Team, Coutts

In so far as trying to second guess who or what is next in Trump's crosshairs, yes I believe it has increased the pressure. My impression is that Jerome Powell arrived with all of the right intentions. He really tried to do what he could to normalise monetary policy and look to the real economy, not markets, for his cues on policy. But by capitulating in December and stepping in to support the market, I believe he has shown his hand for the rest of his tenure as Fed Governor.

What I find more interesting is that the pressure is starting to go both ways now. Trump gets plenty of flak in the press for trying to bully the Fed. What gets a lot less airtime is Draghi's increasingly animated criticism of governments for not doing enough fiscally to support the economy. In many ways he is equally 'guilty' of blurring the lines of independance.

Frederick Mellors
One consideration is whether central banks' activities have actually been ineffective, for example in Japan and Europe. The ECB has a major challenge because it is dealing with 19 independent governments. It seems as though Draghi made his latest announcement without first consulting the Germans or French, the two largest economies in Europe, which is extraordinary. Lagarde is facing an unbelievable challenge in terms of expectations that she can help the transition from monetary to fiscal policy. I think it will require a crisis before we see a German fiscal stimulus or some sort of coordinated response from Europe.

William Hobbs
Another question is whether we are tiptoeing in the direction of 'helicopter money' type activity. It helped Japan emerge from the depression earlier than anyone else, but proved harder to wean the economy off it. In the US — post WW2 — the central bank was buying up and cancelling bonds. This may be where we are headed: governments and central banks desperately working together to try and juice up the economy and inflation.

Richard Lacaille
Over the next five to ten years, do you think that central banks will have to start developing a viewpoint on currencies?
Frederick Mellors
If, hypothetically, there is a downturn next year and central banks are trying desperately to support the markets — yes. Potentially we could have a situation where fixed income markets have no volatility. Central banks would be buying everything and the volatility is transferred to the FX market; it becomes a game of who devalues their currency more.

To comment on ‘helicopter money’, I agree with Draghi’s view in that we need structural reforms that boost long-term growth potential as opposed to more short-term handouts. Other countries could potentially learn from the Swiss government’s ongoing program of cap-ex investment on infrastructure, which helps address the ongoing challenge of secular stagnation.

Peter Wild
Coming back to the question of the evolving role of central banks, in my mind there is a good chance that the size of deficits and debt in large developed nations could become a much bigger topic of discussion for central bankers. The US government is already adding over a trillion of debt a year, and this is set to keep growing. The 2001/02 recession increased the deficit by 6%, 2008/09 by 8%. How much is the next recession going to cost? We could see $2–3 trillion of debt added in one year in the US. Debt service costs and their affordability then come into question and I think central banks may be forced to consider these costs in their policy-making decisions.

Richard Lacaille
Based on flows and our client reactions, people seem to be remarkably relaxed about this risk. It’s not just at the government levels that it’s reaching extraordinary levels. It seems as though we’re all deferring the day when professional investors are willing to acknowledge this fact.

Antoine Lesne
Using information from the $35 trillion of assets under custody at State Street, we can see some of this ebb and flow. Italy has been volatile and remains under-owned versus its long-term history, but despite political risk, investors have kept on buying BTPs. More broadly, investors have reallocated more to fixed income than equities, and that has been true for ETFs too. Who buys when yields are negative? Forced buyers like insurance companies and investors who play the shape of the curve and can afford to not buy and hold but rather play trends.
Section 2: Key Considerations for Portfolio Positioning

Richard Lacaille
In terms of portfolio positioning, what is your biggest concern for 2020 and beyond?

William Hobbs
Inflation — there is very little preparation for even a little inflation. We suspect that both stock and bond markets are in a sharp correction, particularly in developed markets.

Antoine Lesne
Agreed. It’s something we have seen in the holdings and flow pattern of long-term investors for around a year. While QE was supposed to stoke inflation, it did not. As a result, investors have been selling these exposures and could be caught off guard as some of the PriceStats® data indicates a mild pick-up in inflation in the next few months.

Frederick Mellors
Liquidity. A lot of asset allocation has been moving further down the risk spectrum to generate some kind of return. If we go into a slowdown next year and get to a tipping point in equities where the market realises that valuations aren’t justified by earnings expectations, we may get a gap in credit spreads which leads to a repricing of credit markets.

Richard Lacaille
Given we’ve had a number of stress events (e.g. the taper tantrum, Third Avenue) without this repricing, what do you think would cause this snowball effect?

Frederick Mellors
I think it will come down to fundamentals. A lot of people can’t understand why we have this massive divergence between equity valuations and bond yields. Part of this is probably attributable to central bank support. However, if we see an earning recession which is transmitted to credit spreads, investors will re-focus on leverage, interest coverage and fundamentals, which have been ignored for the last ten years.

Peter Wild
I would absolutely second Frederick’s point on liquidity. It is something Coutts has been conservative about for some time and will continue to be especially in light of Woodford, GAM and H2O. For us, a 2020 recession remains a big concern. A lot of our work recently has been on developing our own recession indicator to help us assess this risk. Personally, I have a serious concern that investors have totally forgotten about duration risk. Take the UK corporate bond index. The index has a duration of nine and offers a yield of 2%. 100 points of spread widening wipes out nearly 5 years of return, and that is not an extreme environment. You often hear the cliché of buying equities for yield and bonds for capital gain; for me it could go a step further, and there is a very real risk that investors’ fixed income allocations could experience bigger drawdowns than their equity allocations. It has happened before.
Antoine Lesne  
I think sterling bonds are actually a risky exposure in that context because of their long duration profile.

Richard Lacaille  
Given the ongoing hunt for yield, where do you think are the opportunities for investing in fixed income over the medium term?

William Hobbs  
Within credit, we are looking at emerging market debt, particularly hard currency. We have concerns around high yield. I don't think it's a foregone conclusion that there will be a recession in 2020 given things like the private sector balance in the US and other signals regarding build-ups and imbalances.

Peter Wild  
From where we sit there doesn't look to be a huge amount of opportunity within the fixed income market. But to your point about excessive pessimism, a theme we have liked for some time and continue to like is subordinated financial credit. Banks have delevered significantly and not only run less risky business models but are significantly better capitalised than in 2008. Yet banks still get a bad rep because of their performance in the financial crisis so, in our view, you are structurally overcompensated to hold this debt. It's an interesting asset class, high carry and fairly low duration, but admittedly is high beta so warrants cautious sizing in portfolios.

Continuing on the theme of asset classes that still pay a bad-memories-of-the-crisis-premium, we have also been exploring ABS recently, specifically consumer ABS. Zero duration and a way to play consumer strength, so could be an interesting defensive investment. EM local is also screening cheaply. Agencies are about as liquid as treasuries, and we’re only looking at the highest quality within ABS. Certainly part of ABS pays a big liquidity premium.

Frederick Mellors  
From a strategic asset allocation perspective, we want our clients to be invested for the long term. Things like US-China trade relations or Trump's tweets are impossible to predict with any certainty. We think asset classes like credit and credit risk premium will compensate investors through the cycle and the long term.

On the tactical side, we're looking at the short-term drivers and whether Trump wants to win the trade war at the risk of a recession. We're reviewing Chinese property and EM hard currency on a similarly tactical basis. European investment grade credit doesn't look too bad. You can generate a bit more yield by hedging on the FX side. US investors can buy European investment grade and hedge it into USD and get a decent pick-up.
When it comes to yield, and real yield in particular, we continue to have a preference for emerging market debt local currency for three reasons: (i) currency valuations are not elevated and could rise as we pass the economic slowdown, (ii) real yields are positive at around 3%, and (iii) yields are falling in aggregate thanks to central banks easing. For investors who can take some level of volatility, we feel it is a good long-term opportunity.

Richard Lacaille

It’s interesting how the contagion risk has changed in EM. While we have had some episodes of volatility in South Africa and Argentina or Turkey, the overall construct has proven to be more resilient over time. Meanwhile, be it “deglobalisation” and the potential danger it represents for EM countries, we have observed that correlations of EM exposures in risk-off markets are becoming a little lower.

However, the question is about the next five years: are we ever going to see normalisation? Value as a factor has suffered from the lower yield environment. So what would it take to resume normal service in the rates space, a massive fiscal stimulus that steepens curves? A change in investor sentiment? A large default?

Frederick Mellors

Overall, I’m still focusing on secular stagnation. Potential growth is trending lower for all the obvious reasons: demographics, lack of productivity and political uncertainty impeding business investment. My guess — as opposed to a forecast — is that, over the next five years, it will require a crisis for policy makers to collaborate and introduce structural reforms that lead to normalisation in real and, ultimately, nominal yields.

William Hobbs

To challenge the stagnation narrative, we could be at the start of the 4th industrial revolution. Productivity may change path in the next 5–10 years based on a range of industries, such as material sciences and AI, for example.

Richard Lacaille

Could productivity growth be accompanied by worse returns for financial investors because the benefits could go to consumers and workers? Or could productivity growth be accompanied by pretty significant deflation as we saw in the UK in the late 19th century?

Peter Wild

It is now almost certainly a question of political will. The outcome of the next US election could be quite fundamental to that question. Will Trump get re-elected? Would he stand again if there’s a recession? What sort of populist policies will the left be forced to accept to win an election? Who knows. I’m afraid we have no insight there.

Perhaps the one place I would be willing to make a prediction for the next five years is that there could well be a shake-out at the lower quality end of the fixed income market. Lending standards have deteriorated in parts of the market, especially in the loans market. It is a well documented worry but one that I find myself agreeing with the more I see of that market.
Richard Lacaille

Fixed income markets have been fairly unaffected by all the developments, technology and innovation in equity finance. Do you think that different way of financing things will provide more opportunities within fixed income?

Peter Wild

The innovation may not come in corporates, but rather the potential introduction of ESBs — European Stability Bonds.

This is effectively a super senior, tranching version of European government debt. It could be the best shot at fiscal union for the eurozone, and could materially change the investment landscape. That said, looking out in the market today the yields would be comically low. Perhaps the most interesting investment would be in the deeply subordinated tranches. Of course it is not a nailed-on conclusion yet, and the question of whether such a structure would be acceptable to Germany needs to be answered.

Frederick Mellors

It’s an interesting question. Culturally, in the Germanic world, there is still a reluctance to borrow too much and subsidise the rest of Europe. But things are changing — particularly in terms of their attitudes towards 'green' projects. Shareholder activism may now be flowing into the bond market. UBS has been engaged with this for a while. As with all ESG investments, the problem is where to draw the line, i.e. what about an Australian bank that lends to coal mines but also issues green bonds that are used to fund a solar plant.

Richard Lacaille

Could this move towards impact investments become more significant?

Frederick Mellors

Yes, definitely — particularly over the next five years. There is demand from large clients and there’s research that shows millennials are willing to sacrifice return for doing something that is socially responsible. Our part is to create products to facilitate that.

Antoine Lesne

Our role as asset managers is to create exposures/products so that investors can select their investment tools. We talked about Green Bonds so as part of this role we take part in industry bodies like the Green Bond Principle to help decide on which bonds may qualify for an index inclusion.

We also sit on index technical committees to ensure our voice and those of investors are being heard. We can also be more proactive in deciding what types of securities enter an index. Can a synthetic convertible bond be part of an index when it does not fund a specific corporation? Something to consider.
Section 3: Fixed Income ETFs and Their Place in Asset Management

Richard Lacaille

Given the rapid growth of fixed income ETFs — in terms of assets, funds and varied exposures — what do you think is the next step for these investment vehicles? And if you do already use ETFs, how do you incorporate them within your portfolios? Finally, how do you see active managers working with ETFs?

William Hobbs

ETFs have helped to highlight some of the tricks of the trade within the active management industry. Their low cost has enabled investors to replicate some of their returns by combining various exposures. The magic of ETFs is that they provide investors with access to the world’s capital for almost nothing. I’d say they’re a wondrous invention with further to come.

Peter Wild

Fixed income ETFs are something we have been cautious on. We are spending a lot of time investigating the liquidity mechanisms via the market makers, the overall ecosystem and the issuers themselves. The first and most important step for us has been to understand the experience of redemptions in stressed environments when we have to interact with the market makers, not the fund managers themselves. Put another way, what are the non-investment risks we are taking by investing in ETFs?

But in exploring the ecosystem, we have seen how some active managers are starting to mimic the trading methods of ETFs and taking advantage of so-called ‘basket trading’ themselves. It makes a lot of sense. As a market maker would you rather take five idiosyncratic bonds, or a basket of two or three hundred.

And I think it shouldn’t go unsaid that as much as the bankers, as we mentioned earlier, like to moan about the Volcker Rule and the fact that they’ve had all their balance sheets taken away, I think as end investors or our end clients should be quite happy about that. Take the example of an issuer that gets downgraded to HY. In the past, the banks may have stepped in, bought a bond at a discount and held it until the price stabilised and pocketed the gains. Now they don’t hold big inventories. Asset managers can step into this role.

Frederick Mellors

It depends on the investor and their requirements. If it was a large institutional client who wanted market exposure to a particular segment of the bond market, I’d advise them to look at a stand-alone mandate to protect them as opposed to being co-mingled with a number of other clients. They’re cheap and avoid the risk of other investors’ (unpredictable) behaviour in times of volatility. For other clients, ETFs are a liquid, cheap, transparent and easy to access exposure, and they can serve a useful purpose.

I do think that credit fixed income ETFs haven’t yet been properly tested — particularly the mechanism between the creation basket, the AP and the impact on the NAV. From my own personal experience, clearly ETFs are putting pressure on active managers to justify their fees, particularly in relation to whether they are generating alpha. This means there is a chance that managers will try to take on more risk as opposed to reducing the fees. Ultimately, both ETFs and active managers serve an important purpose — we just need to consider them within the wider context of the issues that our industry is facing.
William Hobbs

There’s been a number of recent articles (post-Woodford) undermining the existence of the superstar investor. The analysis seems to show that, for a lot of active managers, their skills/returns can be replicated using factor ETFs. We use both, and it’s to the benefit of our end client.

Peter Wild

We also pay a lot of attention to the trading costs. If we put a large allocation to a high yield manager, it is likely we will get stung on the way in and exiting as well. If we can trade large ETFs at a lower spread, the active manager is already behind by maybe as much as a full percentage point. With MIFID2, transaction costs are becoming more transparent both to us as clients of asset managers clients and to our clients, which can only be a good thing.

Antoine Lesne

Trading costs, transparency and spreads are all very important elements of the ETF ecosystem. Fixed income ETFs have grown into a $1 trillion market in less than 20 years. These tools are being used across all types of portfolio, from discretionary wealth managers to insurance accounts, from pension funds to multi-asset portfolios. As market access tools, they help provide liquidity to some of the more difficult-to-manufacture beta portfolios and are now becoming more mainstream.

Richard Lacaille

The fixed income and ETF industries have become more effective at providing some of these exposures transparently. But can we not do more? Have we identified all the ingredients? We are building new benchmarks with ESG characteristics. And when looking at these we ensure it is not just impact but also return that is aimed for. Are systematic strategies harvesting factors in fixed income already encapsulated in ETFs? Is that an area of progress for the industry?

Peter Wild

Fixed income has lagged equity investing in terms of quantitative strategies. Passive funds are starting to highlight some obvious tools that active managers use to beat benchmarks, like being in the highest roll down part of the curve or being long carry all the time. These things work. I can foresee active bond managers coming under the same pressure as equity managers as the quants begin to lift the lid on some of these simple techniques for improving performance.

William Hobbs

The big question investors have is, “What am I paying for?” Could this be replicated by a cheaper, factor-led passive exposure?

Peter Wild

In defense of active managers, there are certain things that are harder for passive vehicles to replicate — such as understanding debt covenants or detailed prospectuses. Artificial intelligence may well get there one day but for now, humans have an edge here. To oversimplify slightly, equity investing is about upside whereas fixed income investing is about managing the downside and understanding the tail risks. The challenge is for active managers to get that right.
Within fixed income, there are more non-economic considerations. Banks buying for liquidity, for example. Historically, there has been more alpha generated in fixed income than in the equity market, as equity markets are perceived to be more efficient and highly liquid.

William Hobbs

There will always be a role for active fixed income managers. I think the current trends will continue but there will be increasing pressure for active managers to focus on an absolute return as opposed to focusing on beating a particular benchmark. This is where they can justify active fees. The rise of ETFs has highlighted the lazy ways of delivering alpha by reaching for carry or duration. Going forwards, passive exposures will continue to play a role in providing marketing allocations. We spend time looking at the stratified sampling approach of passive, particularly in relation to idiosyncratic events and how it performs. We do our homework assessing each manager on their own merits and track record.

Frederick Mellors

There is definitely client interest in ESG fixed income exposures. We have our own, bottom-up analytical approach, and there’s a number of third party providers like MSCI in this space. This trend is not going away and, as demographics change, there’ll be more demand for socially responsible investing and associated analysis.

Antoine Lesne

To counter that, it’s important to note that fixed income ETFs are not managed by computers or algorithms, but by specialists that are in the market every day. They use different techniques like sampling that help build portfolios with low tracking error.

Meanwhile, the growth of fixed income indexing is different from the way indexing has competed with active managers in the equity space. In the bond space, we see growth of both the range of exposures on offer, as well as investors combining indexing with active management. The first active decision is that of the benchmark, or to have none! In this respect, fixed income ETFs are often built around benchmarks. But one theme that we have seen rising in the benchmark and fund wrapper world is fixed income ESG ETFs.

Frederick Mellors

There is definitely client interest in ESG fixed income exposures. We have our own, bottom-up analytical approach, and there’s a number of third party providers like MSCI in this space. This trend is not going away and, as demographics change, there’ll be more demand for socially responsible investing and associated analysis.

Peter Wild

Coutts is also signatory to the UNPRI (United Nations Principles for Responsible Investment). The evolution of ESG in fixed income has been very pronounced in the last few years. Compared to equity exposures — where investors can engage with management — fixed income managers haven’t had a lot to say in this space. As a result, we’ve seen a transition of good ESG principles applied at a house level now starting to trickle down to good practice at a fund level. We assess managers on their ESG credential as a house but also how they apply those principles at a fund level.
Antoine Lesne  

The drivers of return in fixed income mean that you could exclude a number of securities and make your portfolio more climate friendly, for example, and still perform close to the broad benchmark. At State Street Global Advisors, our teams have done a lot of analysis on these topics. Meanwhile, the ETF industry is definitely ready to embark on such a journey.

Richard Lacaille  

Thank you for everyone’s contribution, your candor and observations. It’s an extremely interesting way to approach the fourth quarter and beyond. We’ve discussed a range of concepts and, it seems to me, underpinning all of them is the fact that we can execute our respective strategies very efficiently, potentially via combining true alpha generating active management with cost-effective ETFs.
### Standard Performance

#### SPDR Bloomberg Barclays Euro Corporate Bond UCITS ETF (% returns expressed in fund’s base currency)

<table>
<thead>
<tr>
<th></th>
<th>1 Month</th>
<th>3 Month</th>
<th>YTD</th>
<th>1 Year</th>
<th>3 Year</th>
<th>5 Year</th>
<th>Inception</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPDR Bloomberg Barclays Euro Corporate Bond UCITS ETF</td>
<td>-0.77%</td>
<td>1.26%</td>
<td>6.63%</td>
<td>5.94%</td>
<td>1.98%</td>
<td>2.52%</td>
<td>(23-May-11)</td>
</tr>
<tr>
<td>Bloomberg Barclays Euro Corporate Bond Index</td>
<td>-0.76%</td>
<td>1.29%</td>
<td>6.79%</td>
<td>6.13%</td>
<td>2.19%</td>
<td>2.69%</td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td>-0.01%</td>
<td>-0.04%</td>
<td>-0.15%</td>
<td>-0.19%</td>
<td>-0.20%</td>
<td>-0.17%</td>
<td>-0.19%</td>
</tr>
</tbody>
</table>

#### SPDR Bloomberg Barclays Emerging Markets Local Bond UCITS ETF (% returns expressed in fund’s base currency)

<table>
<thead>
<tr>
<th></th>
<th>1 Month</th>
<th>3 Month</th>
<th>YTD</th>
<th>1 Year</th>
<th>3 Year</th>
<th>5 Year</th>
<th>Inception</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPDR Bloomberg Barclays Emerging Markets Local Bond UCITS ETF</td>
<td>0.66%</td>
<td>-0.14%</td>
<td>7.55%</td>
<td>9.57%</td>
<td>2.41%</td>
<td>0.30%</td>
<td>(16-May-11)</td>
</tr>
<tr>
<td>Bloomberg Barclays EM Local Currency Government Liquid Index</td>
<td>0.75%</td>
<td>0.14%</td>
<td>8.27%</td>
<td>10.55%</td>
<td>3.38%</td>
<td>1.25%</td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td>-0.09%</td>
<td>-0.28%</td>
<td>-0.71%</td>
<td>-0.98%</td>
<td>-0.98%</td>
<td>-0.95%</td>
<td>-0.90%</td>
</tr>
</tbody>
</table>

#### SPDR Bloomberg Barclays 7-10 U.S. Treasury Bond UCITS ETF (% returns expressed in fund’s base currency)

<table>
<thead>
<tr>
<th></th>
<th>1 Month</th>
<th>3 Month</th>
<th>YTD</th>
<th>1 Year</th>
<th>3 Year</th>
<th>5 Year</th>
<th>Inception</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPDR Bloomberg Barclays 7-10 U.S. Treasury Bond UCITS ETF</td>
<td>-1.10%</td>
<td>2.69%</td>
<td>9.72%</td>
<td>13.79%</td>
<td>2.24%</td>
<td>N/A</td>
<td>(17-Feb-16)</td>
</tr>
<tr>
<td>Bloomberg Barclays 7-10 U.S. Treasury Bond Index</td>
<td>-1.09%</td>
<td>2.73%</td>
<td>9.85%</td>
<td>13.97%</td>
<td>2.39%</td>
<td>N/A</td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td>-0.01%</td>
<td>-0.04%</td>
<td>-0.13%</td>
<td>-0.17%</td>
<td>-0.15%</td>
<td>N/A</td>
<td>-0.15%</td>
</tr>
</tbody>
</table>

#### SPDR Bloomberg Barclays Sterling Corporate Bond UCITS ETF (% returns expressed in fund’s base currency)

<table>
<thead>
<tr>
<th></th>
<th>1 Month</th>
<th>3 Month</th>
<th>YTD</th>
<th>1 Year</th>
<th>3 Year</th>
<th>5 Year</th>
<th>Inception</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPDR Bloomberg Barclays Sterling Corporate Bond UCITS ETF</td>
<td>-0.77%</td>
<td>1.26%</td>
<td>6.63%</td>
<td>5.94%</td>
<td>1.98%</td>
<td>2.52%</td>
<td>(17-May-12)</td>
</tr>
<tr>
<td>Bloomberg Barclays Sterling Corporate Bond Index</td>
<td>-0.76%</td>
<td>1.29%</td>
<td>6.79%</td>
<td>6.13%</td>
<td>2.19%</td>
<td>2.69%</td>
<td></td>
</tr>
<tr>
<td>Difference</td>
<td>-0.01%</td>
<td>-0.04%</td>
<td>-0.15%</td>
<td>-0.19%</td>
<td>-0.20%</td>
<td>-0.17%</td>
<td>-0.19%</td>
</tr>
</tbody>
</table>

Source: State Street Global Advisors, as of 30 September 2019. Performance quoted represents past performance, which is no guarantee of future results. Investment return and principal value will fluctuate, so you may have a gain or loss when shares are sold. Current performance may be higher or lower than that quoted. All results are historical and assume the reinvestment of dividends and capital gains. Visit spdrs.com for most recent month-end performance. The calculation method for value added returns may show rounding differences. Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Some of the products are not available to investors in certain jurisdictions. Please contact your relationship manager in regards to availability.
## Standard Performance (cont’d)

### SPDR Bloomberg Barclays 1–3 Year Euro Government Bond UCITS (% returns expressed in fund’s base currency)

<table>
<thead>
<tr>
<th></th>
<th>1 Month</th>
<th>3 Month</th>
<th>YTD</th>
<th>1 Year</th>
<th>3 Year</th>
<th>5 Year</th>
<th>Inception (14-Nov-11)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPDR Bloomberg Barclays 1–3 Year Euro Government Bond UCITS</td>
<td>-0.15%</td>
<td>0.24%</td>
<td>0.56%</td>
<td>1.09%</td>
<td>-0.07%</td>
<td>0.11%</td>
<td>1.19%</td>
</tr>
<tr>
<td>Bloomberg Barclays 1-3 Yr Euro Treasury Bond</td>
<td>-0.14%</td>
<td>0.27%</td>
<td>0.67%</td>
<td>1.23%</td>
<td>0.09%</td>
<td>0.27%</td>
<td>1.34%</td>
</tr>
<tr>
<td>Difference</td>
<td>-0.01%</td>
<td>-0.03%</td>
<td>-0.11%</td>
<td>-0.14%</td>
<td>-0.15%</td>
<td>-0.16%</td>
<td></td>
</tr>
</tbody>
</table>

### SPDR ICE BofAML 0–5 Year EM USD Government Bond UCITS ETF (% returns expressed in fund’s base currency)

<table>
<thead>
<tr>
<th></th>
<th>1 Month</th>
<th>3 Month</th>
<th>YTD</th>
<th>1 Year</th>
<th>3 Year</th>
<th>5 Year</th>
<th>Inception (12-Nov-14)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPDR ICE BofAML 0–5 Year EM USD Government Bond UCITS ETF</td>
<td>0.31%</td>
<td>-0.13%</td>
<td>4.76%</td>
<td>5.33%</td>
<td>2.65%</td>
<td>N/A</td>
<td>2.83%</td>
</tr>
<tr>
<td>ICE BofAML 0–5 Year EM USD Government Bond Ex-144A Index</td>
<td>0.35%</td>
<td>-0.02%</td>
<td>5.25%</td>
<td>5.89%</td>
<td>3.14%</td>
<td>N/A</td>
<td>3.29%</td>
</tr>
<tr>
<td>Difference</td>
<td>-0.04%</td>
<td>-0.10%</td>
<td>-0.49%</td>
<td>-0.56%</td>
<td>-0.49%</td>
<td>N/A</td>
<td>-0.46%</td>
</tr>
</tbody>
</table>

### SPDR Bloomberg Barclays 1–3 Year U.S. Treasury Bond UCITS ETF (% returns expressed in fund’s base currency)

<table>
<thead>
<tr>
<th></th>
<th>1 Month</th>
<th>3 Month</th>
<th>YTD</th>
<th>1 Year</th>
<th>3 Year</th>
<th>5 Year</th>
<th>Inception (27-Aug-13)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPDR Bloomberg Barclays 1–3 Year U.S. Treasury Bond UCITS ETF</td>
<td>-0.12%</td>
<td>0.57%</td>
<td>2.93%</td>
<td>4.25%</td>
<td>1.37%</td>
<td>1.17%</td>
<td>1.06%</td>
</tr>
<tr>
<td>Bloomberg Barclays US Treasury 1-3 Year Index</td>
<td>-0.12%</td>
<td>0.58%</td>
<td>3.07%</td>
<td>4.43%</td>
<td>1.53%</td>
<td>1.33%</td>
<td>1.21%</td>
</tr>
<tr>
<td>Difference</td>
<td>0.00%</td>
<td>-0.01%</td>
<td>-0.14%</td>
<td>-0.17%</td>
<td>-0.15%</td>
<td>-0.15%</td>
<td></td>
</tr>
</tbody>
</table>

### SPDR Bloomberg Barclays 1-10 Year US Corporate Bond UCITS ETF (% returns expressed in fund’s base currency)

<table>
<thead>
<tr>
<th></th>
<th>1 Month</th>
<th>3 Month</th>
<th>YTD</th>
<th>1 Year</th>
<th>3 Year</th>
<th>5 Year</th>
<th>Inception (17-Feb-16)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPDR Bloomberg Barclays 1-10 Year US Corporate Bond UCITS ETF</td>
<td>-0.22%</td>
<td>1.70%</td>
<td>10.45%</td>
<td>10.97%</td>
<td>3.59%</td>
<td>N/A</td>
<td>4.87%</td>
</tr>
<tr>
<td>Bloomberg Barclays Intermediate Corporate Index</td>
<td>-0.23%</td>
<td>1.74%</td>
<td>10.56%</td>
<td>11.11%</td>
<td>3.80%</td>
<td>N/A</td>
<td>5.15%</td>
</tr>
<tr>
<td>Difference</td>
<td>0.01%</td>
<td>-0.03%</td>
<td>-0.11%</td>
<td>-0.14%</td>
<td>-0.21%</td>
<td>N/A</td>
<td>-0.29%</td>
</tr>
</tbody>
</table>

Source: State Street Global Advisors, as of 30 September 2019. Performance quoted represents past performance, which is no guarantee of future results. Investment return and principal value will fluctuate, so you may have a gain or loss when shares are sold. Current performance may be higher or lower than that quoted. All results are historical and assume the reinvestment of dividends and capital gains. Visit spdrs.com for most recent month-end performance. The calculation method for value added returns may show rounding differences. Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Some of the products are not available to investors in certain jurisdictions. Please contact your relationship manager in regards to availability.
### Standard Performance (cont’d)

#### SPDR Bloomberg Barclays 1–3 Month US T-Bill UCITS ETF (% returns expressed in fund’s base currency)

<table>
<thead>
<tr>
<th>Source</th>
<th>1 Month</th>
<th>3 Month</th>
<th>YTD</th>
<th>1 Year</th>
<th>3 Year</th>
<th>5 Year</th>
<th>Inception (18-Jul-19)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SPDR Bloomberg Barclays 1–3 Month US T-Bill UCITS ETF — USD</td>
<td>0.16%</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>0.41%</td>
</tr>
<tr>
<td>Bloomberg Barclays U.S. Treasury Bills 1–3 Months</td>
<td>0.18%</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>0.43%</td>
</tr>
<tr>
<td>Difference</td>
<td>-0.02%</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>N/A</td>
<td>-0.02%</td>
</tr>
</tbody>
</table>

Source: State Street Global Advisors, as of 30 September 2019. Performance quoted represents past performance, which is no guarantee of future results. Investment return and principal value will fluctuate, so you may have a gain or loss when shares are sold. Current performance may be higher or lower than that quoted. All results are historical and assume the reinvestment of dividends and capital gains. Visit spdrs.com for most recent month-end performance. The calculation method for value added returns may show rounding differences. Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Some of the products are not available to investors in certain jurisdictions. Please contact your relationship manager in regards to availability.
For Investors in Austria
The offering of the Spanish Funds by the Company has been notified to the Financial Markets Authority (FMA) in accordance with section 95 of the Austrian Investment Funds Act. Prospective investors may obtain the current sales Prospectus, the articles of incorporation, the KIs as well as the latest annual and semi-annual report free of charge from State Street Global Advisors GmbH, Brünnser Straße 59, 1080 Vienna, Austria.

For Investors in France
The offering of funds by the Companies has been notified to the Financial Supervision Authority in accordance with section 127 of the Act on Common Funds (L151-1094-49) and by virtue of confirmation from the Financial Supervision Authority the Companies may publicly distribute their Shares in France. Certain information and documents that the Companies must publish in Ireland pursuant to applicable Irish law are translated into Finnish and are available for Finnish investors by contacting State Street Custodial Services (Ireland) Limited, 90 John Rogerson’s Quay, Dublin 2, Ireland.

For Investors in France
This document does not constitute an offer or request to purchase shares in the Companies. Any subscription for shares shall be made in accordance with the terms and conditions specified in the complete Prospectuses, the KIIDs, as well as the Terms and Conditions specified in the Companies’ current sales Prospectus, the articles of incorporation, the KIs as well as the Companies’ addenda as well as the Companies’ Supplements. These documents are available for inspection at the contact point designated by the Companies: State Street Banque S.A., 23-25 rue Delavierre-Lefol, 92064 Paris La Défense Cedex or on the French part of the Company’s website. The Companies are undertakings for collective investment in transferable securities (UCITS) governed by French law and accredited by the French Financial Supervisory Authority (Autorité des Marchés Financiers) in accordance with applicable French Securities Funds Legislation. Only law makes the offer to you, with a particular aim to suit your financial situation and your investment objectives. The Companies have completed their notification to the Financial Markets Authority of the Netherlands in order to market their assets to the public in the Netherlands and the Companies are, accordingly, investment institutions (beleggingsinstellingen) according to Section 2.72 Dutch Financial Supervision Act of Investment Institutions.

For Investors in Norway
The offering of SPDR ETFs by the Companies has been notified to the Financial Supervisory Authority of Norway (Finanstilsynet) in accordance with applicable Norwegian Securities Funds Legislation. By virtue of a confirmation letter from the Financial Supervisory Authority dated 28 March 2010 (16 October 2013 for umbrella I) the Companies may market and sell their shares in Norway.

For use in Singapore
The offer or invitation of the Funds mentioned, which is the subject of this document, does not relate to a collective investment scheme which is authorised under section 286 of the Securities and Futures Act, Chapter 289 of Singapore (SFA) or registered under section 267 of the SFA. The Funds mentioned are not authorised or recognised by the Monetary Authority of Singapore (MAS) and the Funds mentioned are not allowed to be offered to the retail public. Each of this document and any other document or material issued in connection with the offer or sale is not a prospectus as defined in the SFA. Accordingly, statutory liability under the SFA in relation to the content of prospectuses would not apply. Any potential investor should consider whether the investment is suitable for it. The MAS assumes no responsibility for the contents of this document. This document has not been registered as a prospectus with the MAS. Accordingly, this document and any other document or material in connection with the offer or sale, or invitation for subscription or purchase, of the Funds mentioned may not be circulated or distributed, offered or sold, or be made the subject of an invitation for subscription or purchase, whether directly or indirectly, to persons in Singapore other than to an institutional investor under Section 304 of the SFA or otherwise pursuant to, and in accordance with the conditions of, any other applicable provision of the SFA. Any subsequent sale of Units acquired pursuant to an offer made in reliance on an exemption under section 305 of the SFA may only be made pursuant to the requirements of sections 304A.

For Investors in Spain
The Companies are regulated schemes under Section 204 of the Financial Services and Markets Act 2000 (the “Act”) and are directed at “professional clients” in the UK (within the meaning of the rules of the Act) who are deemed both knowledgeable and experienced in matters relating to investments. The products and services to which this communication relates are only available to such persons and persons of any other description should not rely on this communication. Many of the protections...
provided by the UK regulatory system do not apply to the operation of the Companies, and compensation will not be available under the UK Financial Services Compensation Scheme.

Issuer Entity
This document has been issued by State Street Global Advisors Ireland ("SSGA"), regulated by the Central Bank of Ireland. Registered office address 78 Sir John Rogerson's Quay, Dublin 2. Registered number 145222. Tel: +353 (0) 1 776 3000. Fax: +353 (0) 1 776 3001. E: ssga.com.

ETFs trade like stocks, are subject to investment risk and will fluctuate in market value. The investment return and principal value of an investment will fluctuate in value, so that when shares are sold or redeemed, they may be worth more or less than when they were purchased. Although shares may be bought or sold on an exchange through any brokerage account, shares are not individually redeemable from the fund. Investors may acquire shares and tender them for redemption through the fund in large aggregations known as "creation units." Please see the fund's prospectus for more details.

Equity securities may fluctuate in value in response to the activities of individual companies and general market and economic conditions.

SPDR ETFs is the exchange traded funds ("ETF") platform of State Street Global Advisors and is comprised of funds that have been authorised by Central Bank of Ireland as open-ended UCITS investment companies.

State Street Global Advisors SPDR ETFs Europe I & SPDR ETFs Europe II plc issue SPDR ETFs, and is an open-ended investment company with variable capital having segregated liability between its sub-funds. The Company is organised as an Undertaking for Collective Investments in Transferable Securities (UCITS) under the laws of Ireland and authorised as a UCITS by the Central Bank of Ireland. Investing involves risk including the risk of loss of principal.

Diversification does not ensure a profit or guarantee against loss.

The trademarks and service marks referenced herein are the property of their respective owners. Third party data providers make no warranties or representations of any kind relating to the accuracy, completeness or timeliness of the data and have no liability for damages of any kind relating to the use of such data.

The information provided does not constitute investment advice as such term is defined under the Markets in Financial Instruments Directive (2014/65/EU) or applicable Swiss regulation and it should not be relied on as such. It should not be considered a solicitation to buy or an offer to sell any investment.

It does not take into account any investor’s or potential investor’s particular investment objectives, strategies, tax status, risk appetite or investment horizon. If you require investment advice you should consult your tax and financial or other professional advisor. All material has been obtained from sources believed to be reliable. There is no representation or warranty as to the accuracy of the information and State Street shall have no liability for decisions based on such information.

The whole or any part of this work may not be reproduced, copied or transmitted or made available under the UK Financial Services Regulation and it should not be relied on as such.

The units of the Sovereign Bond Flow Indicators are standardised by debt outstanding at each point in the curve and then for the aggregates are duration weighted. State Street Global Markets (SSGM) then aggregate the indicators into percentiles to gauge the significance of a flow or positioning metric over a variety of time periods and countries. SSGM’s use is aimed at being a simple way of ranking flow and positioning indicators relative to their own history. For all of the flow indicators within the State Street Bond Compass, State Street Global Markets calculates the percentiles based on the distribution of flows over the last five years using the daily aggregate time periods shown in the charts. As a guide a 90th percentile reading represents the strongest buying in five years; and a zero percentile equals the strongest selling. A reading in the 50th percentile would signal that net flows in the asset over the period are at their average level, typically close to zero.

© 2019 State Street Corporation. All Rights Reserved. 081020I 222892 2019LJN.T Exp. Date 31/01/2020

BLOOMBERG®, a trademark and service mark of Bloomberg Finance L.P. and its affiliates, and BARCLAYS®, a trademark and service mark of Barclays Bank Plc, have each been licensed for use in connection with the listing and trading of the SPDR Bloomberg Barclays ETFs.

Bonds generally present less short-term risk and volatility than stocks, but contain interest rate risk (as interest rates rise, bond prices usually fall); issuer default risk; issuer credit risk; liquidity risk; and inflation risk. These effects are usually pronounced for longer-term securities. Any fixed income security sold or redeemed prior to maturity may be subject to a substantial gain or loss. International Government bonds and corporate bonds generally have more moderate short-term price fluctuations than stocks, but provide lower potential long-term returns.

ICE Data Indices, LLC ("ICE Data Indices") and its indices may not be reproduced or used for any other purpose. ICE Data Indices is provided "AS IS". ICE Data Indices, its affiliates and its third party suppliers provide no warranties, has not prepared or approved this report, has no liability, and does not endorse SIGA or guarantees, review, or endorse its products. For the full copy of the disclaimer please refer to the Fund supplement.

Standard & Poor’s® and SPDR® are registered trademarks of Standard & Poor’s Financial Services LLC (S&P); Dow Jones is a registered trademark of Dow Jones Trademark Holdings LLC (Dow Jones); and these trademarks have been licensed for use by S&P Dow Jones Indices LLC (SPDJI) and sublicensed for certain purposes by State Street Corporation. State Street Corporation’s financial products are not sponsored, endorsed, sold or promoted by SPDJI, Dow Jones, S&P, their respective affiliates and third party licensors and none of such parties make any representation regarding the advisability of investing in such products nor do they have any liability in relation thereto, including for any errors, omissions, or interruptions of any index.

International Government bonds and corporate bonds generally have more moderate short-term price fluctuations than stocks, but provide lower potential long-term returns.

All the index performance results referred to are provided exclusively for comparison purposes only. It should not be assumed that they represent the performance of any particular investment.

You should obtain and read the SPDR prospectus and relevant Key Investor Information Document (KIID) prior to investing, which may be obtained from spdrs.com. These include further details relating to the SPDR funds, including information relating to costs, risks and where the funds are authorised for sale.

The information contained in this communication is not a research recommendation or ‘investment research’ and is classified as a ‘Marketing Communication’ in accordance with the Markets in Financial Instruments Directive (2014/65/EU) or applicable Swiss regulation. This means that this marketing communication (a) has not been prepared in accordance with legal requirements designed to promote the independence of investment research (b) is not subject to any prohibition on dealing ahead of the dissemination of investment research.

The units of the Sovereign Bond Flow Indicators are standardised by debt outstanding at each point in the curve and then for the aggregates are duration weighted. State Street Global Markets (SSGM) then aggregate the indicators into percentiles to gauge the significance of a flow or positioning metric over a variety of time periods and countries. SSGM’s use is aimed at being a simple way of ranking flow and positioning indicators relative to their own history. For all of the flow indicators within the State Street Bond Compass, State Street Global Markets calculates the percentiles based on the distribution of flows over the last five years using the daily aggregate time periods shown in the charts. As a guide a 90th percentile reading represents the strongest buying in five years; and a zero percentile equals the strongest selling. A reading in the 50th percentile would signal that net flows in the asset over the period are at their average level, typically close to zero.
## Calendar of Events
### Q4 2019

<table>
<thead>
<tr>
<th>Month</th>
<th>Date</th>
<th>Day</th>
<th>Country</th>
<th>Event</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>October</strong></td>
<td>04</td>
<td>Fri</td>
<td>US</td>
<td>Change in Nonfarm Payrolls</td>
</tr>
<tr>
<td></td>
<td>09</td>
<td>Wed</td>
<td>US</td>
<td>FOMC Meeting Minutes</td>
</tr>
<tr>
<td></td>
<td>10</td>
<td>Thu</td>
<td>US</td>
<td>CPI YoY</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>Wed</td>
<td>UK</td>
<td>CPI YoY</td>
</tr>
<tr>
<td></td>
<td>16</td>
<td>Wed</td>
<td>EC</td>
<td>CPI YoY</td>
</tr>
<tr>
<td></td>
<td>24</td>
<td>Thu</td>
<td>EC</td>
<td>ECB Main Refinancing Rate</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>Wed</td>
<td>CA</td>
<td>Bank of Canada Rate Decision</td>
</tr>
<tr>
<td></td>
<td>30</td>
<td>Wed</td>
<td>US</td>
<td>FOMC Rate Decision (Lower Bound)</td>
</tr>
<tr>
<td></td>
<td>31</td>
<td>Thu</td>
<td>JN</td>
<td>BOJ Policy Balance Rate</td>
</tr>
<tr>
<td><strong>November</strong></td>
<td>01</td>
<td>Fri</td>
<td>US</td>
<td>Change in Nonfarm Payrolls</td>
</tr>
<tr>
<td></td>
<td>07</td>
<td>Thu</td>
<td>UK</td>
<td>Bank of England Bank Rate</td>
</tr>
<tr>
<td></td>
<td>07</td>
<td>Thu</td>
<td>UK</td>
<td>Bank of England Inflation Report</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>Wed</td>
<td>UK</td>
<td>CPI YoY</td>
</tr>
<tr>
<td></td>
<td>13</td>
<td>Wed</td>
<td>US</td>
<td>CPI YoY</td>
</tr>
<tr>
<td></td>
<td>15</td>
<td>Fri</td>
<td>EC</td>
<td>CPI YoY</td>
</tr>
<tr>
<td></td>
<td>20</td>
<td>Wed</td>
<td>US</td>
<td>FOMC Meeting Minutes</td>
</tr>
<tr>
<td><strong>December</strong></td>
<td>04</td>
<td>Wed</td>
<td>CA</td>
<td>Bank of Canada Rate Decision</td>
</tr>
<tr>
<td></td>
<td>06</td>
<td>Fri</td>
<td>US</td>
<td>Change in Nonfarm Payrolls</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>Wed</td>
<td>US</td>
<td>CPI YoY</td>
</tr>
<tr>
<td></td>
<td>11</td>
<td>Wed</td>
<td>US</td>
<td>FOMC Rate Decision (Lower Bound)</td>
</tr>
<tr>
<td></td>
<td>12</td>
<td>Thu</td>
<td>EC</td>
<td>ECB Main Refinancing Rate</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>Wed</td>
<td>UK</td>
<td>CPI YoY</td>
</tr>
<tr>
<td></td>
<td>18</td>
<td>Wed</td>
<td>EC</td>
<td>CPI YoY</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>Thu</td>
<td>JN</td>
<td>BOJ Policy Balance Rate</td>
</tr>
<tr>
<td></td>
<td>19</td>
<td>Thu</td>
<td>UK</td>
<td>Bank of England Bank Rate</td>
</tr>
</tbody>
</table>