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Global macro strategy

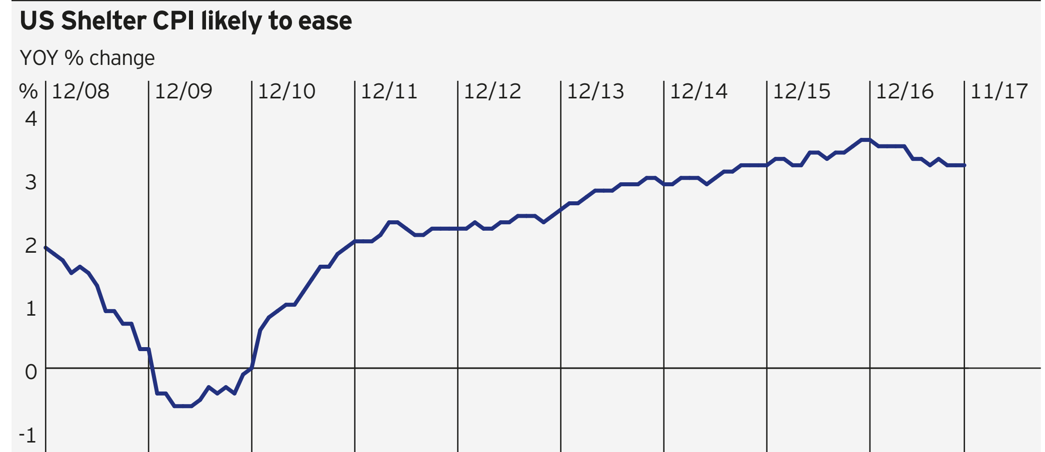
Global inflation: stabilizing but not accelerating

Despite strong economic growth and falling unemployment, US inflation has been stubbornly low. Over the past few months, however, core consumer price inflation (CPI) has been on the rise. Is this reversal the beginning of a new trend, or is it likely to fade? Invesco Fixed Income (IFI) believes the acceleration in US inflation may last several more months, but is not likely to persist through 2018.

US inflation likely to remain tame in 2018

Because inflation is a key determinant of bond prices and US Federal Reserve (Fed) policy, we believe understanding inflation's drivers and likely path is critical for bond investors. In our **August report**, we examined the sharp decline in US inflation between January and July, driven largely by an unusual downturn in "sticky" prices, a bucket of goods comprised of typically stable sectors like housing, communication and healthcare services. We predicted that sticky core prices would rise and inflation would rebound in late 2017 or early 2018. Sticky core prices did recover and stabilized at an annualized rate of around 1.8% by November.[1] Volatile prices also rebounded from low levels earlier this year, driven by stronger service prices, such as airfares and hotels. These dynamics have contributed to the stabilization of core CPI over the past several months and we expect continued stability.

However, we believe several factors will prevent core CPI from rising above 2% in 2018. The most important factor is likely to be housing costs. Strong housing inflation has supported CPI in the past few years, but a recent increase in rental property supply has caused rent increases to slow. Earlier this year, we expected a slowdown in this wave of supply going into 2018. However, growth in the construction of multifamily units continues to rise. Multifamily starts peaked in early 2017, and we expect to see these completed units enter the market in early 2018. Increased supply, along with decreased demand, has reversed the post-crisis drop in rental vacancy rates, which have risen from 6.7% to 7.5% over the past year, and will likely put further downward pressure on rents.[2]



Source: Bloomberg L.P., Dec. 1, 2008 to Sept. 1, 2017.

In addition, we have not seen significant wage growth, despite falling unemployment. Wages are growing around 2.5% annually, only slightly faster than the 2.1% post-global financial crisis average.[3] While we expect the unemployment rate to continue to fall, we do not foresee faster wage growth in 2018. Even if wage growth picks up, it will likely take time for wage increases to translate into CPI increases. Given the lack of catalysts, we believe there is little potential for a significant pick-up in US inflation in 2018.

Global inflation also benign
In fact, this low inflation scenario is part of a global trend. Despite a myriad of different economic structures, labor market dynamics and inflation baskets across the globe, most countries (with the exception of a few emerging markets) are significantly undershooting their inflation targets, even countries like Brazil, Russia and India that have historically struggled to lower inflation. We are monitoring the economies with the tightest labor markets and strongest growth for signs that robust growth could bring global economies back to their inflation targets.

A benign inflationary environment should allow for slow monetary policy normalization globally – similar to 2017. The Fed currently projects three interest rate hikes in 2018. However, if US inflation continues to underperform its forecast, it may deliver fewer hikes than anticipated.[4] Given our outlook for 1.8% inflation in 2018, we believe the likely scenario is two Fed rate hikes next year. Low global inflation should prevent most major central banks, such as the Bank of Japan (BoJ) and the European Central Bank (ECB), from hiking interest rates more quickly than the market expects, despite strong global growth.

A restrained pace of global interest rate normalization and low inflation coupled with our expectations of strong global growth should be supportive of credit markets. If our forecast is correct and inflation does not break out to the high side, developed market interest rates should remain relatively low. A strong global growth, low inflation environment also typically leads to a stable-to-weaker US dollar versus global currencies.

James Ong, Senior Macro Strategist, Noelle Corum, Associate Portfolio Manager,
Jay Raol, Senior Macro Analyst

1 Source: Bureau of Labor Statistics, Dec. 13, 2017.
2 Source: US Census Bureau, Oct. 31, 2017.
3 Source: US Bureau of Labor Statistics, Employment Cost Index, as of Sept. 30, 2017. Average is from Dec. 31, 2010 to Sept. 30, 2017.
4 Source: US Federal Reserve, Summary of Economic Projections, Dec. 13, 2017.

Interest rate outlook

US: The Fed raised the federal funds rate by 25 basis points as expected in December.[1] Stable inflation, despite strong growth, will likely support slow monetary policy normalization going forward. As we expected, price pressures from recent hurricanes are beginning to feed through to inflation data. Uncertainty around the true inflation trend will likely cap US Treasury yields in the near term, despite upward pressure from policy normalization.

Europe: Eurozone growth was significantly higher than expected this year, and continues to benefit from global growth momentum and the revival in global trade as well as reduced euro-area political risks. Renewed confidence among consumers and businesses points to a robust and well-balanced recovery path ahead, with more job creation and strong business investment prospects. However, despite the slight improvement in wages and credit growth, inflation pressures have been muted. We believe weak inflation data, combined with a stronger euro, have kept the ECB on the defensive and bund yields low.

China: China's central bank hiked its open market operation and medium-term lending facility rates in December, following the US Fed move, although the magnitude was smaller than the market expected. President Xi's speech at the 19th Party Congress pointed to a quality-focused growth strategy and a probable further emphasis on strengthening financial regulation. In our view, this suggests slower credit growth and a lower rate of economic growth going forward, which should support the performance of Chinese onshore government rates in 2018.

Japan: The Japanese economy continues to perform above potential. We expect that trend to continue as we head into 2018, as external demand remains solid. The BoJ is expected to keep policy unchanged, although it could surprise (something they have done in the past) by adjusting their 10-year Japanese government bond yield target higher. We believe this will become more likely if other major central banks tighten policy first. Over the next three-month period, however, we expect 10-year government bond yields to remain range bound between 0.0%-0.1%.

UK: The Bank of England (BoE) hiked rates in November and we could see another hike before the end of 2018. We expect the UK economy to underperform relative to other major countries in the year ahead. Ten-year gilt yields have trended lower since late October and we intend to use any further declines to implement an underweight position (on the basis that the economy will likely eventually recover once post-Brexit trading arrangements have become clearer). Brexit discussions have now entered the second phase, but it is difficult to see how an ongoing trade deal will be reached and ratified before the March 2019 departure date. A transition period appears to be the most logical solution in the interim. The UK government may, however, be reluctant to abide by European Union laws (during a transition) without having a say in them. The deferral of the actual departure date could, therefore, be one option that arises over the next twelve months.

Canada: The Bank of Canada (BoC) remains cautious in its growth and inflation outlook headed into year-end. Employment growth remains strong and wage growth is picking up, while inflation continues below the BoC's target. There are several concerns that prevent a more aggressive BoC stance. Difficulty resolving the NAFTA negotiations, overleveraged consumers and a recent fall in the price of Western Canadian Select oil due to supply issues sit at the top of the list. A March rate hike remains our base case, unless inflation or growth surprise to the upside. We are neutral on Canadian rates.

Australia: The Reserve Bank of Australia (RBA) remains patient, keeping the interest rate at 1.50% at its December meeting.[2] The statement remained balanced with a positive outlook on GDP growth, but was tempered with concerns about household consumption. Third quarter growth picked up but high consumer debt and low wage growth, despite strong employment numbers, should continue to constrain consumer spending. Expected low overall inflation should keep the RBA on hold. We remain neutral on Australian rates.

India: Government bond yields have risen significantly since August after several upside inflation surprises driven by higher food prices and increased public employee housing allowances. We believe that inflation will likely stabilize at around 4.5% by the end of March 2018 as food prices moderate. Therefore, we expect the Reserve Bank of India (RBI) to stay on hold at least in the first half of 2018, although the next move will likely be a rate hike rather than a cut. The combination of a hawkish central bank, high real interest rates by historical standards, and a benign growth environment has made yields potentially attractive, in our view. However, we would like to see inflation stabilize or the RBI rate hike before buying longer-term rates.

Rob Waldner, Chief Strategist, James Ong, Senior Macro Strategist, Noelle Corum, Associate Portfolio Manager, Reine Bitar, Macro Analyst, Yi Hu, Senior Analyst, Sean Connery, Portfolio Manager, Brian Schneider, Head of North American Rates Portfolio Management, Alex Schwiersch, Portfolio Manager, Scott Case, Portfolio Manager, Amritpal Sidhu, Quantitative Analyst

1 Source: US Federal Reserve, Dec. 13, 2017.
2 Source: Reserve Bank of Australia, Dec. 5, 2017.

Currency outlook

USD: The US dollar has strengthened in recent months on expectations of December's Fed rate hike. However, we do not expect strengthening to be the longer-term trend for the US dollar. We believe strong global growth, resulting in less accommodative global central bank policy, against a backdrop of gradual Fed policy normalization, is likely to drive the US dollar weaker over the longer term.

EUR: We maintain our forecast for further euro appreciation. Global growth momentum remains positive while inflation is subdued, which will likely continue to support the weak US dollar trend and higher euro valuations. We continue to view pullbacks in the euro as consolidation within a secular trend higher.

RMB: We expect the USD/RMB exchange rate to trade in a range of 6.5-6.7 in a stable US dollar environment and a range of 6.80-6.99 if the US dollar strengthens sharply from here. Officials indicated in the 19th Party Congress that currency stability is a near-term policy priority. We, therefore, expect the spot level of the renminbi to move in tandem with the US dollar, but with lower volatility compared to other major currencies. Capital flows have become increasingly two-way, compared to previous periods of net outflows, and we expect this dynamic to continue in the near term.

JPY: The yen has traded in a range of ¥110-115 against the US dollar. As we head into 2018, we see limited potential for the currency to weaken meaningfully. It is trading at depressed levels on a real effective exchange rate basis, and a material weakening could negatively impact consumption. A surprise change in policy from the Bank of Japan (tightening in policy) also cannot be ruled out. We maintain our neutral stance on the yen against the US dollar, but are biased to move to overweight if the exchange rate moves toward the upper bound of its current trading range.

GBP: Sterling's trajectory will likely continue to be driven by the success of ongoing Brexit discussions, changes in the BoE's thinking and the performance of the domestic economy. We expect the BoE to hike only once during 2018 (this appears priced in), we expect the economy to underperform the major eurozone economies, and we believe Brexit discussions are likely to become more challenging before a resolution becomes clearer (soft/no Brexit). We remain underweight sterling.

CAD: The Canadian dollar has traded in a tight range since November, after reaching its yearly high and low in the past six months.[1] The more cautious tone from the BoC, combined with uncertainty around the resolution of the NAFTA negotiations, should lend itself to a somewhat weaker Canadian dollar in the near term. As a result, we are underweight the Canadian dollar.

AUD: The RBA remained on hold in December, keeping its benchmark interest rate at 1.50%.[2] Third quarter growth showed signs of picking up, even though household consumption was sluggish. The RBA appears optimistic about business investment and growth while continuing to be concerned about household consumption, which will likely be held back by stubbornly low inflation. Even with a slowing housing market, low inflation levels, especially in wages, will likely keep the RBA on hold in the near term. We remain neutral on the currency amid positive global growth and the RBA's stable stance.

INR: We maintain our neutral stance on the Indian rupee. Favorable macro fundamentals such as moderate growth, benign inflation, a hawkish central bank and a manageable current account deficit, have already caused the rupee to strengthen considerably this year. Going forward, risks are slightly tilted to the downside given a recent uptick in inflation and higher oil prices. Nevertheless, we do not favor an outright short stance, given the country's improving growth outlook and significant foreign reserve cushion.

Ray Uy, Head of Macro Research and Currency Portfolio Management, James Ong, Senior Macro Strategist, Yi Hu, Senior Analyst, Sean Connery, Portfolio Manager, Brian Schneider, Head of North American Rates Portfolio Management, Alex Schwiersch, Portfolio Manager, Scott Case, Portfolio Manager, Amritpal Sidhu, Quantitative Analyst

1 Source: Bloomberg L.P., Dec. 14, 2016 to Dec. 14, 2017.
2 Source: Reserve Bank of Australia, Dec. 5, 2017.

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 credit themes

Geographical themes

Investment grade (IG): Global central bank forces, global growth impulse, fiscal policy changes

Rationale

Despite the Fed's announcement that it will begin "quantitative tightening," the pace of tightening will likely be very slow and will be more than offset initially by continued easy monetary policy from the ECB and BOJ. As a result, IG credit should see strong global investor demand at least through the end of 2017, driven by continued strength in cross-border flows. Fundamentals are now broadly improving across most geographies and sectors, driven by a pickup in the global growth outlook. Leverage has stabilized near recent cycle highs in 2016, and with little pressure from shareholders to increase leverage, we expect balance sheet improvement from here. The outlook for US tax policy is uncertain, but any changes that may occur should lead to improving profitability and less bond issuance going forward. On the other hand, regulatory changes seem more likely and should reduce expenses and enable opportunities for revenue growth. European credit markets are generally earlier in the credit cycle and less levered, although Brexit and political uncertainties remain. Although credit spreads in many asset classes are near cycle tights, the fundamental backdrop should remain supportive and there is historical precedent for returns to remain positive despite tight index spreads.

IFI strategy

We remain modestly overweight IG credit, favoring US and Europe over the UK and Asia. Key drivers to monitor include: 1) changes in monetary policy from the Fed, ECB, BoJ and BoE, viewed on an aggregate basis for their impact on global credit flows 2) changes in shareholder sentiment that could pressure firms to start increasing leverage 3) development of fiscal and regulatory policy changes 4) "hard" economic data to confirm the increase in "soft," sentiment-based leading economic indicators.

Emerging markets (EM): Reversal of reflation trade, favorable financial conditions, growth outlook supportive

Rationale

The positive view on global growth, aggregate global monetary policy and benign inflation pressures support our constructive view on EM credit, despite tight valuations. These forces have helped leverage come down from cycle highs, and we expect this trend to continue at a measured pace. Global inflation pressures remain conspicuously absent.

IFI strategy

We prefer high yield bonds due to our positive view on global growth, benign inflation outlook and continued easy financial conditions. We prefer to take credit over interest rate risk. We favor Latin America over Europe and Asia and are underweight Central and Eastern Europe. We are focused on sovereigns that have underperformed without a meaningful catalyst: Lebanon, Kazakhstan, quasi sovereigns, Oman. We actively use the new issue market as a potential source of alpha and to build exposure in favored names and regions.

US commercial mortgage backed securities (US CMBS): Notable decline in primary market issuance, watching retail industry fundamentals

Rationale

Negative retail news has dominated headlines. However, we are generally not advocates of selling stronger US CMBS credits since they are often hard to replace. Issuance is increasing after a slow first half of 2017. US property price growth continues, but there are signs of tighter financial conditions from the Fed's senior loan officer survey. Fortunately, this survey has not always been a good predictor of commercial real estate loan losses and the non-bank sector has proven willing and able to provide credit while banks have taken a step back.

IFI strategy

Given the significant move in spread tightening, we prefer seasoned US CMBS as the cycle progresses. We think AAA-rated US CMBS look less attractive. Credit-differentiation is accelerating, placing a premium on selection, so we must navigate large regional mall concentrations. Rich valuations and poor hedge-adjusted carry weigh on shorter-term high quality paper.

US residential mortgage backed securities (US RMBS): Favorable fundamentals, valuations fair, Credit Risk Transfer (CRT) securities market depth improving

Rationale

Mortgage underwriting quality remains high, the home price outlook remains supported by limited housing supply, and long-term negative net issuance remains the dominant factor in US RMBS. Valuations appeared stretched relative to other asset classes following outperformance during first half 2017 in legacy US RMBS and below-IG CRT, but a slight widening in spreads during the third quarter of 2017, driven by an active hurricane season, has brought valuations back to fair value, in our view, relative to other similarly rated credit asset classes.

IFI strategy

We favor higher quality legacy prime, alt-A, and seasoned BBB-rated CRT. We are avoiding sub-prime, coastal concentrations, and option adjustable rate mortgages.

US asset backed securities (US ABS): Value in floaters, fundamentals normalizing, favorable technicals

Rationale

Normalization of credit underwriting and forecast for a healthier economy should support consumer credit performance in 2017. Recent widening in swap spreads and LIBOR rates provide a potential opportunity to add at fairly attractive levels. As the overall market continues to weigh the longer-term impact of a Trump administration and additional rate hikes going forward, such uncertainty should be supportive of a relatively stable, shorter-duration US ABS market.

IFI strategy

We favor adding exposure to floaters where collateral performance remains stable. We believe senior prime auto US ABS and esoteric issuers can provide opportunities. At present, we are avoiding deep subprime auto US ABS.

Sector themes

Commodities: Global supply concerns creating energy volatility, prefer pipelines

Rationale

We expect global IG credit risk premia to remain volatile as energy and metals credits reflect supply imbalances, offset by credit friendly financial engineering. Credit quality in focus due to still-modest economic growth and risk of volatility due to OPEC, US crude supply, fiscal policy implementation and Fed uncertainty.

IFI strategy

We favor gaining exposure to selected higher quality energy issuers where shorter-term maturities are well covered by liquid assets and positive corporate actions have the potential to support financial profiles. We also favor pipeline credits with favorable parental relationships that have the potential to provide downside protection at attractive yields.

Consumer story more nuanced globally, watching US fiscal policy influences

Rationale

Solid US labor market and consumer confidence are supportive, but consumers are more value and delivery conscious, while international retail demand remains uneven. We are watching European consumer for post-Brexit behavior shift.

IFI strategy

We favor selected US consumer sectors including leisure and housing-related sectors. We are negative on "big box" and mall-based retailers that lack differentiated products. We favor EM consumer sectors on a selective basis. We are incrementally more cautious on automotive original equipment manufacturer (OEM) sector, given excess inventory.

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

Rationale

M&A activity has moderated but remains a risk, driven by large overseas cash balances, low all-in financing cost, still soft organic revenue growth, and need to reposition business portfolios.

IFI strategy

Preference to play post-transaction bond issuance typically characterized by size, liquidity, concessions and plans to deleverage. We believe a discriminating approach to this strategy is warranted due to lower, but still large, M&A-related pipeline.

Global technology – big data

Rationale

We expect global use of data to grow and transition to cloud-based platforms.

IFI strategy

We prefer to gain exposure to software and services, cell towers and select wireless issuers. We have avoided hardware original equipment manufacturers.

Yield curve themes

Credit curve positioning, long end valuations getting full

Rationale

Global interest rate policy has forced cash investors and sovereign wealth funds into 3-5 year part of the credit yield curve, creating a steep 5-7 year part of the curve. We expect demand for 5-10 year paper to be resilient.

IFI strategy

We favor 7-10 and select 30-year points on US IG and EM credit yield curves. New issuance has remained strong year-to-date, but is expected to decline as the pace of mergers returns to normal.

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

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

What does US tax reform mean for the US municipal market?

Tax reform is currently underway in the US Congress and could have important implications for the tax-exempt US municipal bond market. After both the House of Representatives and the Senate passed their own versions of tax reform legislation, Republicans in both the House and Senate agreed on a final bill (H.R.1) to put before Congress for a vote.

Municipal tax exemption preserved

The greatest perceived risk to the municipal market has been the potential elimination of its tax-exempt feature, but this was not included in the final bill. Neither was the termination of the Private Activity Bond (PAB), which is a tax-exempt financing tool used by non-profit organizations as well as government entities to finance "private activity," such as the construction of airports.[1] Several other changes, however, could impact municipal credit quality and the future supply and demand for municipal bonds (technicals). These are discussed below.

Repeal of advance refunding

H.R. 1 calls for the repeal of advance refunding bonds, which are issued more than 90 days before a bond's call date, with proceeds of the refunding bonds typically invested in Treasuries or federal agency securities.[2] While the repeal would limit an issuer's ability to take advantage of lower interest rates and thereby generate economic savings, the impact on bond credit quality would likely be muted, as issuers could still take advantage of lower rates through existing call provisions. The impact on the overall municipal market should be net positive, however, since advanced refunding has been significant over the past 10 years and this supply would be removed.[3]

Changes in individual and corporate income tax rates

Income tax rates for individuals and corporations will be lowered under H.R.1. For individuals, tax rates will be lowered across the board, with the highest tax rate dropping from 39.6% to 37%. Additionally, individual income tax brackets will be widened. The corporate tax rate will drop from 35% to 21%. While lower individual income tax rates will expire at the end of 2025, the 21% corporate tax rate will be permanent.[4]

Historical experience suggests that the impact of lower individual tax rates on municipal market yields has been minimal.[5] Reducing the corporate income tax rate from 35% to 21%, however, would likely have a negative impact on corporate demand for municipal bonds. Barclays compared US corporate yields to tax-adjusted municipal yields (10-year). Under the current tax structure, tax-exempt municipals are more attractive. However, when the corporate tax rate was lowered to 20%, higher quality (Aaa to A1) US corporate bonds "out-yielded" their tax-exempt counterparts.[6]

US insurance companies (property and casualty and life), banks and credit unions currently hold around 28% of total outstanding municipal debt.[7] While a lower corporate tax rate could reduce their demand for tax exempt municipal bonds, we would not anticipate mass selling by these institutions, partly due to high acquisition yields on the municipal bonds they hold and their need for asset-liability matching.

The impact of other possible changes

- **Alternative Minimum Tax (AMT):** The final bill increases the exemption levels for individuals subject to the AMT, and thus reduces the number of individuals subject to the AMT. However, the corporate AMT would be repealed.[8] Because these actions would, in theory, lower tax burdens, this legislation would likely have a negative impact on the demand for municipal bonds.
- **State and local taxes (SALT):** Under the bill, SALT deductions are capped at USD10,000. We could see an uptick in demand for tax-exempt bonds issued by states with high tax burdens, such as California, New York and New Jersey, as residents seek tax-exempt income to offset a potentially higher tax burden. However, capping the SALT deduction could be negative from a credit perspective, as states and local governments could face political challenges to increasing state tax rates. Additionally, residents in higher-tax states could see their disposable incomes decline, potentially reducing economic activity.
- **Mortgage interest deduction:** Capping the mortgage interest deduction at USD750,000 could temper housing sales and the expansion of the tax base, especially in areas with higher-priced homes. This could have a longer-term negative impact on state and local government credit quality.

The importance of partnering with an active manager

The municipal bond market continues to grow in complexity, currently comprising over 36,000 government and non-government obligors.[9] Important and historic changes to the US tax code adds another layer of complexity, making careful credit analysis an even more critical component in municipal bond investing.

Mark Paris, Head of Municipals, Mark Gilley, Head of Municipal Credit Research, Steve Hong, Senior Analyst, Allen Davis, Analyst, Stephanie Larosiliere, Senior Client Portfolio Manager

Invesco does not provide tax advice. Investors should consult a tax advisor for guidance.

1 IRS Office of Tax Exempt Bonds, "Publication 4079 Tax-Exempt Governmental Bonds"
2 Municipal Securities Rulemaking Board (http://www.msrb.org/Glossary/Definition/ADVANCE-REFUNDING.aspx)
3 JP Morgan 2018 Municipal Market Outlook, Nov. 22, 2017.
4 All data cited in paragraph: Wall Street Journal, https://www.wsj.com/articles/gop-tax-bill-would-set-up-years-of-challenges-1513557742, Dec. 17, 2017.
5 JP Morgan US Fixed Income Markets Weekly Oct. 28, 2016.
6 Barclays Municipal Strategy and Research, "2018 Municipal Outlook: Opportunity Knocks," Dec. 1, 2017. At the time of the analysis, both the Senate and the House had passed legislation in their respective chambers including a 20% corporate tax rate.
7 Board of Governors of the Federal Reserve System, "Financial Accounts of the United States," 2Q 2017.
8 Washington Post, https://www.washingtonpost.com/news/wonk/wp/2017/12/15/the-final-gop-tax-bill-is-complete-heres-what-is-in-it/?utm_term=.41cc66d0f452, Dec. 15, 2017.
9 Bloomberg L.P., data as of Nov. 21, 2017.

The bottom line

Get to know Invesco Global Liquidity

Marques Mercier
Head of Global Liquidity Government Portfolio Management

Joe Madrid
Head of Global Liquidity Credit and Municipal Portfolio Management

Paul Mueller
Senior Portfolio Manager

Jennifer Brown
Senior Analyst

We speak with the Invesco Global Liquidity Team about the main tenets of their management process and how money market fund reform has impacted the money markets and the team's investment approach.

Q: What are the key tenets of managing global liquidity assets?
Marques Mercier: Safety, liquidity and yield. These are the three tenets of managing global liquidity. Our priorities are preserving principal, selecting liquid securities and generating competitive yield. Invesco Global Liquidity's infrastructure supports this. Our disciplined and well-defined fundamental research and investment processes have been tested and proven through multiple credit events and various economic cycles.

We believe the great communication and collaboration between our portfolio managers and credit research analysts also drives our success. Because the money market asset class is governed by a "same day" trading convention, the high velocity of trading and shareholder activity requires efficiency across all aspects of operational work flows, decision-making and strategy implementation. The ability to incorporate and execute our investment strategies while simultaneously understanding underlying market trends in a fast-paced environment requires well-coordinated communication among the team.

Q: How has regulatory change affected your market?
Marques Mercier: New regulations in the US money market industry have effectively homogenized our market, resulting in very little differentiation among funds. We believe a key differentiator for Invesco Global Liquidity has been our commitment to shareholders, the investment teams and the three key tenets that have helped us achieve our investment objectives and provide investment solutions to clients.

Q: What changes have you had to implement due to US money market fund reform?
Joe Madrid: The latest reforms, which became effective in October 2016, were very impactful for both investment managers and clients. The most significant reforms were the adoption of floating net asset values (FNAVs) and the potential imposition of liquidity fees and redemption gates for certain types of funds. The industry, as well as Invesco, invested significant financial resources and employee hours to implement and comply with these new rules. For Invesco Global Liquidity, these changes required coordination and teamwork among many different areas of Invesco, including fund accounting, compliance, information technology, the transfer agency, legal and operations, to name just a few.

Q: How has US money market fund reform changed the US money market fund industry?
Joe Madrid: The reforms have had a substantial impact on the industry due to the new composition of money market fund assets. Early in 2016, we started working closely with clients to help transition to the new regulatory environment. Industry flows from prime to government funds totaled approximately USD1 trillion, far larger than many predicted.[1] Fortunately, the transition out of prime funds into government funds was orderly, although it caused some distortions in both commercial paper and Libor rates that finally normalized in the first quarter of 2017.

Assets are now weighted toward government funds, amid reduced size and number of surviving prime funds. Prime institutional fund assets tracked by the Investment Company Institute totaled over USD900 billion in November 2015 but dropped to around USD124 billion by November 2016.[2] The number of prime funds declined from about 70 funds to around 30, over the same period, as advisors liquidated or merged funds.[3] This shift has resulted in a smaller number of large prime fund managers and, therefore, the potential for greater fund concentration risk, in our view.

Q: What does it mean for the future of the industry?
Joe Madrid: As the dust settles, it appears that fund size has become more meaningful in the prime category. Managers have also become more conservative, maintaining excess liquidity over and above regulatory requirements to help reduce the potential need to impose fees and gates. This, along with improved relative value, has resulted in approximately USD60 billion returning to prime funds this year, although inflows have been largely concentrated in the largest funds.[4] We believe many investors would like to diversify among more prime funds, as long as competing funds offer competitive yields and have sizable assets. We believe, going forward, successful managers will not only offer scale, but will offer multiple liquidity solutions, such as ultra-short duration strategies.

Q: Where are we on European Money Fund reform?
Paul Mueller: The European Commission proposed new money market fund regulations in September 2013, but getting agreement between twenty-eight different countries has not been easy. The final rules were published in June 2017 and the compliance date for existing funds is January 2019. The regulation introduced new types of short-term money market funds: a public debt constant net asset value (CNAV) fund, a low volatility NAV (LVNAV) fund and a variable NAV (VNAV) fund. As in the US, European regulations have included fee and gates provisions. However unlike in the US, CNAV and LVNAV will have fees and gates, including CNAV public debt funds. Therefore, we would not expect a large flow out of prime LVNAV funds into public debt funds, as seen in the US. VNAV funds are not subject to fee and gate requirements. Industry expectation is that LVNAV will be the most likely replacement for current prime CNAV funds, although this will likely be influenced by country and type of investor. We are engaged with our clients to help through this transition.

Q: Discuss the discipline around the credit process and how it has changed following the global financial crisis.
Jennifer Brown: The Global Liquidity Credit Research Team employs a robust, bottom-up approach to credit analysis that has been in place for many years. This process proved successful in navigating the global financial crisis and has changed very little in the years since. The process begins with the gathering of industry- and issuer-specific quantitative metrics, overlays relevant qualitative factors and continues over time through surveillance of these elements.

Our team of credit research analysts maintains a comprehensive approved list of issuers, with dynamic dollar and tenor limits, consistent with the US Securities and Exchange Commission (SEC) Rule 2a-7's minimal credit risk mandate. Every issuer added to the approved list undergoes our rigorous credit review process and must be unanimously approved by the Global Liquidity Research Team. Analysts collaborate daily with Global Liquidity portfolio managers, exploring various security types and structures, and applying a holistic team approach to achieving fund objectives and requirements.

The broader IFI research platform provides analysts access to a rich set of observations and data from outside our asset class to help us formulate new views and test existing ones. Our analysts benefit from participation in IFI's sector team process, where they share news and views with like analysts in other asset classes and geographies, with the goal of identifying trends early that may be impactful to portfolios in the future. IFI's macro research capabilities also provide in-depth macroeconomic insights that can be combined with our bottom-up analysis to form well-rounded, informed credit decisions.

US money market regulatory reform has had a limited impact on Global Liquidity's longstanding, market-tested credit process. Many of the new credit-quality and diversification requirements implemented by the SEC in October 2016 had already been practiced as part of Invesco's historically conservative approach. Our sophisticated trading system allows us the flexibility to continuously enhance portfolio compliance controls and capabilities, ensuring continued adherence to shifting regulatory requirements.

1 Source: Investment Company Institute: ICI All Money Market Funds Prime Total Net Assets, Oct. 30, 2015 to Oct. 31, 2016.
2 Source: Investment Company Institute, ICI Institutional Money Market Funds Prime Total Net Assets, Nov. 30, 2015 to Nov. 30, 2016.
3 Source: iMoney.Net, data from Nov. 30, 2015 to Nov. 30, 2016.
4 Source: Investment Company Institute: ICI Prime Institutional Money Market Funds Prime Total Net Assets Oct. 31, 2016 to Nov. 30, 2017.

Market monitors

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)	2.66	1.63	0.02	36	0	23	156	0.15	0.11	2.81	3.09
U.S. Aggregate	3.06	2.71	0.11	37	1	32	258	-0.13	-0.55	3.07	3.21
U.S. Mortgage-backed	3.53	2.94	0.07	24	3	-16	181	-0.14	-0.40	2.14	2.14
Global Inv Grade Corporate (USD hedged)	3.50	2.55	0.09	97	2	55	515	-0.07	0.31	5.05	5.82
U.S. Investment Grade Corporate	3.95	3.28	0.12	97	2	76	618	-0.15	0.08	5.46	6.16
Emerging Market USD Sovereign	n/a	5.30	0.08	288	3	157	906	0.05	0.43	9.45	10.91
Emerging Market Corporate	n/a	4.52	0.08	225	-1	120	1,032	0.03	0.71	7.62	8.46
Global High Yield Corporate (USD hedged)	6.07	5.05	0.29	333	13	231	1,845	-0.22	1.23	7.65	9.64
U.S. High Yield Corporate	6.41	5.68	0.24	344	7	233	1,971	-0.26	1.07	7.18	9.16
Bank Loans	4.97	5.10	0.03	n/a	n/a	n/a	n/a	0.12	1.19	3.85	5.03
Municipal Bond	4.72	2.47	0.22	n/a	n/a	n/a	n/a	-0.54	-0.80	4.36	5.58
High Yield Municipal Bond	5.22	5.39	0.09	n/a	n/a	n/a	n/a	0.25	-0.01	8.29	9.78

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	2.12	2.15	0.13	-0.14	-1.11	2.00	1.89
Canada	2.22	1.70	0.00	0.45	0.29	0.75	-0.06
United Kingdom	3.49	1.31	0.00	0.28	-2.15	0.33	2.34
Germany	1.96	-0.02	0.03	-0.07	-0.24	-0.87	-0.59
Italy	3.35	1.01	-0.07	0.61	2.42	2.44	3.81
Japan	1.03	0.12	-0.02	0.27	-0.09	0.10	-0.55
China	3.48	3.94	0.05	0.18	-0.29	-1.91	-3.73
EM Local Currency Governments	n/a	n/a	n/a	0.32	0.45	7.69	8.72

FX market monitor[1]

	Current	10 year range: min	max	Returns: 1 mth (%)	3 mth (%)	YTD (%)	12 mth (%)
EURUSD	1.19	1.05	1.60	2.38	0.30	13.78	11.58
USDJPY	112.17	75.82	124.77	1.76	-1.74	4.77	1.69
GBPUSD	1.35	1.22	2.11	1.75	4.06	9.77	7.04
USDCNY	6.59	6.04	8.28	0.24	-0.51	5.51	4.29
USDCHF	0.98	0.75	1.39	2.78	-1.16	4.87	3.54
AUDUSD	0.76	0.60	1.10	-0.82	-4.54	5.97	2.67
CADUSD	0.79	0.72	1.09	1.42	-2.28	5.97	4.99
EURJPY[2]	133.46	94.31	169.49	-0.65	-2.09	-7.96	-8.90
EURGBP[2]	0.88	0.70	0.89	-0.63	3.72	-3.55	-4.09

Sources: Bloomberg Barclays, J.P. Morgan, as of Nov. 30, 2017. Credit Suisse Leveraged Loan data as of Nov. 30, 2017. 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.

Invesco Fixed Income

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Recent IFI publications

1. **November 2017 Summit Outlook,** November 2017, Rob Waldner, Chief Strategist, Head of Multi Sector, Tony Wong, Global Head of Credit Research, Liquidity and Municipals
2. **Global Liquidity: A long-term approach to short-term investing,** October 2017, Invesco Global Liquidity
3. **Q&A: Strategies for investing in a low yield world,** October 2017, Rob Waldner, Chief Strategist, Head of Multi-Sector
4. **The US debt ceiling saga resumes,** August 2017, Justin Mandeville, Portfolio Manager
5. **IFI Global Investors' Summit,** June 2017, Rob Waldner, Chief Strategist, Head of Multi-Sector, Tony Wong, Global Head of Credit Research, Liquidity and Municipals
6. **Quality currencies can potentially diversify against growth risk,** June 2017, Ray Uy, Head of Macro Research and Currency Portfolio Management, James Ong, Senior Macro Strategist

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
- USD 311.3 billion in assets under management

Experienced team

- 171 investment professionals
- Averaging 18 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	75	12	20
Global research	96	9	17
Total investment professionals	171	10	18
Business professionals	56	12	19
Total fixed income employees	227	11	19

Source: Invesco.

As of Sept. 30, 2017. Subject to change without notice.
Investment specific experience for investment professionals.

Important information

All information is sourced from Invesco, unless otherwise stated. All data as of Nov. 30, 2017 unless otherwise stated. All data is USD, unless otherwise stated.

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