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US PENSION MARKET

A STATISTICAL AND QUALITATIVE REVIEW
OF Q1 2019 AND INVESTMENT OUTLOOK

APRIL 2019

Q1 HIGHLIGHTS

PENSION FUNDED STATUS TRENDS

- 1 Funded Status improved over the quarter:
 - a. Driven up by a rise in risk assets (S&P 500 rose 13.65%, the highest Q1 return in last 20 years)
 - b. Mitigated by fall in long-term rates (30-year US Treasury yields fell 20bp and corporate spreads tightened 27bp)

PENSIONS NEWS AND TRENDS

- 2 Equity allocations decreased by 7% over 2018¹
- 3 IRS opens a window for retiree lump sums
- 4 Continued pension risk transfers, but this may not be appropriate for all plans
- 5 Liability complexity is an increasingly important consideration in de-risking solutions

MARKET NEWS²

- 6 Volatility in equity options has returned to lower levels, cheapening the cost of downside protection strategies
- 7 Don't avoid the BBB market despite its growing proportion of the long corporate bond index

KEY MARKET RISKS

- 8 The Fed could be boxing itself in too soon
- 9 Global trade appears to be weakening
- 10 A firmer outlook for oil could become an inflationary tailwind

¹ Source: The Thinking Ahead Institute, WillisTowersWatson. Global Pension Asset Study 2019. Used with permission.

² Opinions expressed herein are as of March 5, 2019 and are subject to change without notice

// What we have here is a failure to communicate. //

STROTHER MARTIN IN COOL HAND LUKE (1967)

After the tumultuous end to 2018, a year in which an unusually broad range of asset classes recorded negative returns, policymakers appear to be in the process of reassessing their position. Risk assets have rebounded in Q1 and bond yields have plunged, in part due to the perception of more dovish central banks. This has, in turn, caused financial conditions to loosen. Global central banks are now likely to face a difficult path in coming months, with every comment and communication carefully scrutinized for signs of further policy shifts. For pension plans, the move in bond yields will have led to a sharp increase in liabilities, but funded status levels are likely to have risen to those of a year ago.

THE DOVES TAKE OVER

A significant development in the first quarter was the re-assessment of the future path for US interest rates by the Federal Reserve (Fed). The market pricing of future US interest rates and Fed forecasts, as indicated by the dot plot, diverged through 2018. At its December meeting, the Federal Open Markets Committee (FOMC) lowered its dot plot forecasts to expect only two interest rate hikes in 2019, but markets at that point were pricing in an interest rate cut. Through the first quarter, it was clear the FOMC was shifting towards a more neutral policy stance, highlighting the low level of inflation and

growing concerns about the weakening global economic environment. This was then confirmed at the March meeting, when the committee changed the dot plot to remove the expectation of any further rate hikes in 2019. In addition, plans to slow the pace of balance sheet reduction were announced, with the pace of reduction to be slowed in May before ending entirely in September. The change in US policy was part of a global shift, with central banks across the world taking a more cautious tone (see table), reflecting a broad softening in activity globally.

Table 1: Major central banks adopted a more cautious tone over the quarter

	Federal Reserve	European Central Bank	Bank of England	Bank of Japan
Comments	Chairman Jerome Powell: “Now we see a situation where the European economy has slowed substantially, and so has the Chinese economy ... just as strong global growth was a tailwind, weaker global growth can be a headwind to our economy”	President Mario Draghi: “The persistence of uncertainties related to geopolitical factors, the threat of protectionism and vulnerabilities in emerging markets appears to be leaving marks on economic sentiment”	Governor Mark Carney: “The fog of Brexit is causing short-term volatility in the economic data and, more fundamentally, it is creating a series of tensions in the economy, tensions for business”	Governor Haruhiko Kuroda: “If currency moves are having an impact on the economy and prices, and if we consider it necessary to achieve our price target, we’ll consider easing policy”
Central bank growth forecast ³	2.1% in 2019 (from 2.3%) 1.9% in 2020 (from 2.0%)	1.1% in 2019 (from 1.7%) 1.6% in 2020 (from 1.7%)	1.2% in 2019 (from 1.7%) 25% chance of recession 1.5% in 2020 (from 1.7%)	(fiscal year) 0.9% in 2018 (from 1.4%) 0.9% in 2019 (from 0.8%)
Central bank inflation forecast ³	(PCE inflation) 1.8% in 2019 (from 1.9%) 2.0% in 2020 (from 2.1%)	1.2% in 2019 (from 1.6%) 1.5% in 2020 (from 1.7%)	(Consumer Price Index) 1.8% in 2019 (from 2.2%) 2.3% in 2020 (from 2.4%)	0.8% in 2018 (from 0.9%) 0.9% in 2019 (from 1.4%)

³ Source: <https://www.federalreserve.gov>; <https://www.ecb.europa.eu>; <https://www.bankofengland.co.uk>; <https://www.boj.or.jp>

With the US interest rate cycle potentially at a peak, the Fed bringing its balance sheet reduction program to an end and growth in Europe rapidly decelerating, US bond yields plunged

(see Chart 1). Risk assets reacted positively to this, with the S&P 500 Index recording its best Q1 performance of the last 20 years (see Chart 2), and credit markets performing strongly.

Chart 1: US 30-year Treasury yield⁴

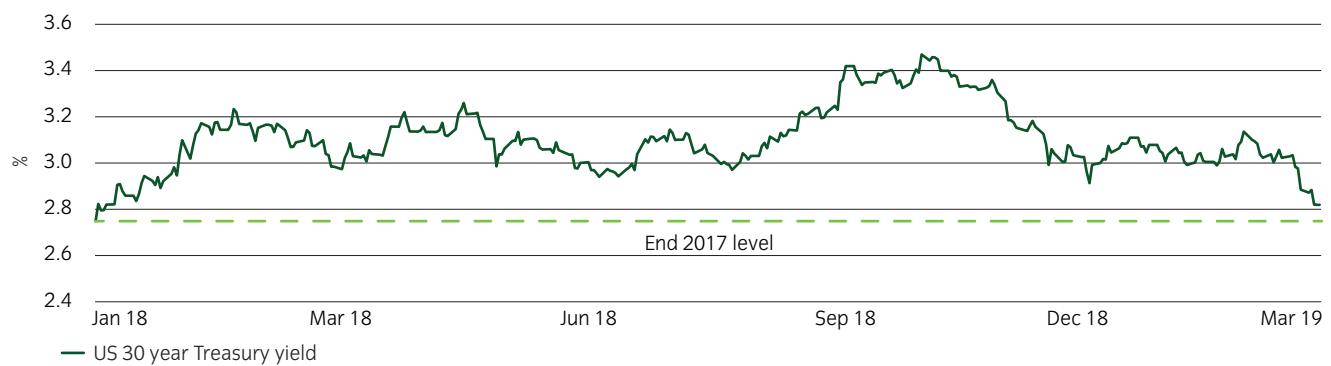
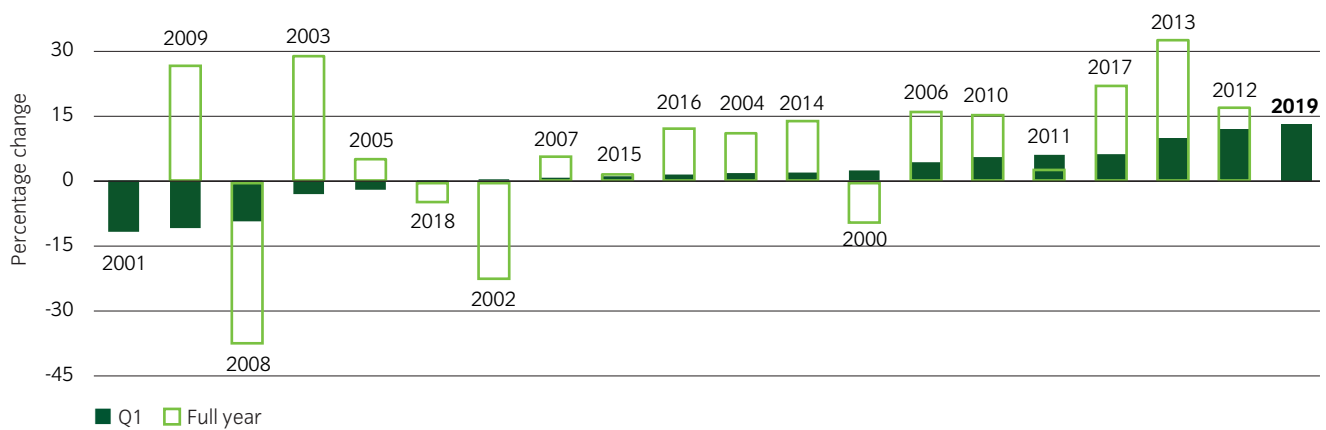


Chart 2: Q1 and annual S&P 500 Index price performance over 20 years⁴



⁴ Source: Bloomberg. Data as of March 31, 2019.

PENSION FUNDED STATUS UPDATE

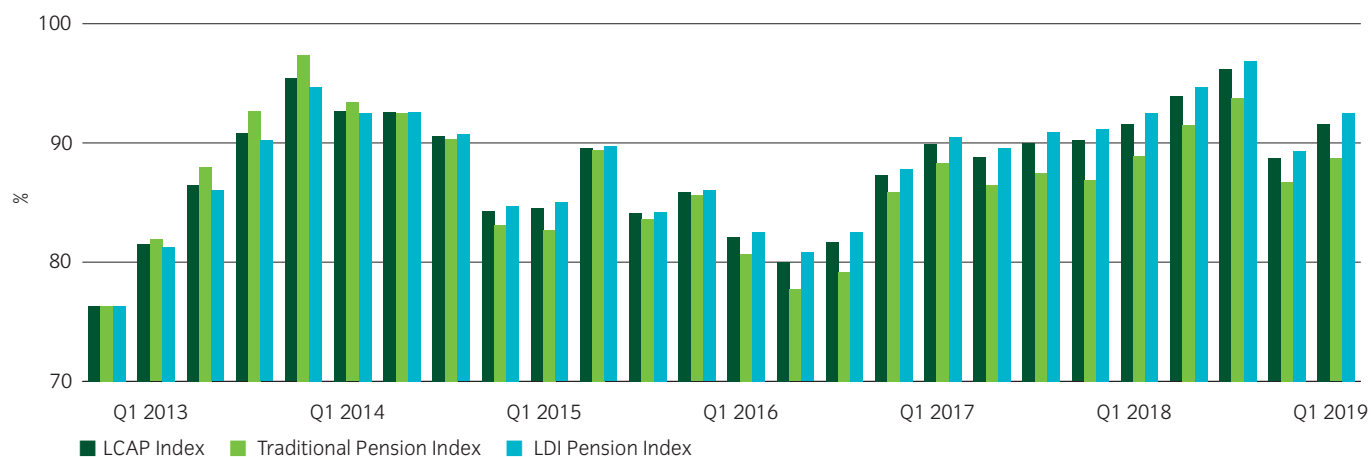
Over the quarter, pension plan funded status levels began to recover losses suffered at the end of 2018, ending up close to levels seen a year earlier. The improvement was driven by asset rises (predominantly equities), despite rates falling and spreads tightening, increasing liabilities.

Insight maintains three model pension indices. Each aims to reflect the changing funded status ratio for pension plans following different approaches to hedging the same liability profile. The indices illustrate the effect of hedging with core fixed income

versus long duration, holding constant a significant allocation to growth assets. All three funding indices experienced increases in funded status during Q1 (see Chart 3).

Indices with long-duration fixed income also fared better due to the rally in rates and tightening of corporate spreads. Liability values increased c.6% over Q1 with a modestly lower discount rate for AA-rated corporate debt, as overall interest rates fell 22bp and corporate spreads tightened 19bp.

Chart 3: Plan funding ratios⁵



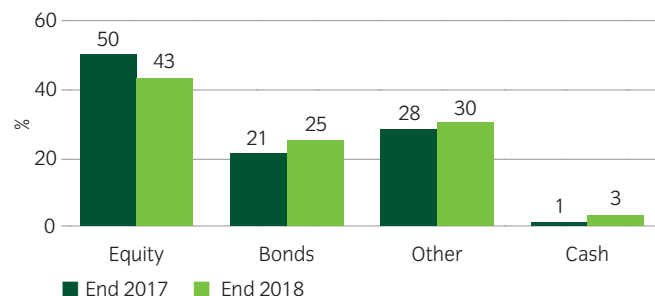
⁵ Source: Insight Investment, Bloomberg as of March 31, 2019. Note: Beginning in 2014, we introduced three indices to provide insight into the impact of rate and market movements on three types of pension plan investors. Large Company Aggregate Pension (LCAP) Index: The “average” corporate pension plan index we have developed which represents an asset weighted average of allocations held by S&P 500 companies’ plans. Traditional Pension Index: The index reflecting those pensions that have not yet adopted LDI. LDI Pension Index: The index reflecting those who have adopted LDI in the fixed income portion of their portfolio. Assumptions behind the Insight indices include 14-year typical pension liability duration, 45% equity allocation, an aggregate 5% liability impact of updated mortality assumptions effective Q4 2014 and no external cashflows.

PENSION NEWS AND TRENDS

A significant shift in pension plan allocations over 2018

US pension plans significantly reduced their equity exposures from 50% to 43% over 2018 (see Chart 4). We believe this was likely driven by a combination of some plans hitting glide-path triggers, incoming contributions being allocated primarily to fixed income and the decline in equity values.

Chart 4: US pension plans significantly reduced equity exposure in 2018⁶



IRS notice opens a window for retiree lump sums

On March 6, the IRS issued Notice 2019-18, which removed an effective barrier to offering retirees lump sums that the IRS had erected in 2015.⁷ This will very likely cause many plan sponsors to consider whether to initiate a 'lump-sum window' offer to plan participants who are already receiving their pension payments. The lump-sum window would give those participants a limited-duration, one-time offer to receive a single payment in lieu of all future scheduled payments.

This practice had previously gained some steam before the IRS issued Notice 2015-49 in July, 2015. In 2012, Ford Motor offered a buyout window to 90,000 retirees and former employees, with General Motors (GM) offering the same to over 40,000 white collar retirees. Before they did so, they received explicit approval from the IRS in the form of a private letter ruling because it was not clear whether such a program would violate distributions standards established under IRC § 401(a)(9). Several other companies followed their lead until the IRS issued Notice 2015-49.

Notice 2015-49 essentially said the IRS and Treasury Department intended to propose amendments to the § 401(a)(9) regulations that would prohibit such lump-sum offers, and that the regulations would be effective as of July 9, 2015.

"It is ironic that a rule designed to prevent payout delays might be used to thwart payout accelerations, but the Treasury reversal of the IRS position was strictly policy based," said Kevin O'Brien, a partner at Ivins, Phillips & Barker, the firm that obtained GM's favorable private letter ruling.

Naturally, no new retiree lump-sum offers were initiated after Notice 2015-49 was issued. The promised amendments were yet to be promulgated as of last week when Notice 2019-18 was announced.

The new Notice 2019-18 explicitly supersedes Notice 2015-49, and goes further still. It states that the IRS and Treasury Department are no longer planning to propose the amendments that would prohibit retiree lump-sum offers. Furthermore, it says the Treasury and IRS will continue to study the issue. Until further guidance is issued, the IRS will not assert that a retiree lump-sum window violates the § 401(a)(9) regulations, and it will no longer include a caveat on the subject in its determination letters. Nor will the IRS issue private letter rulings with regard to retiree lump-sum windows. In other words, there's no need to ask if it's okay – it is.

Although an IRS Notice does not have the same strength as a change in law, **"it's quite possible that this new Notice will create more of a surge in activity than if the law had been changed,"** says O'Brien, simply because the situation may change again. Political winds can shift, and phrasing about continuing study and further guidance on the issue seems to allow for another policy reversal.

In fact, on March 29, two senators called the Notice into question and requested a briefing from the IRS Commissioner and Treasury Secretary by April 12.

⁶Source: The Thinking Ahead Institute, WillisTowersWatson. Global Pension Asset Study 2019. Used with permission.

⁷Available at <https://www.irs.gov/pub/irs-drop/n-18-02.pdf>

PENSION RISK TRANSFERS INCREASING

Pension buyouts were \$26bn for 2018 (see chart 5) – the fifth consecutive year of increases.

In late January, Lockheed Martin announced the purchase of two group annuity contracts covering over 40,000 retirees. One buyout contract for \$1.6bn was placed with Prudential. The second transaction was an \$810m buy-in contract purchased from Athene. This was the largest-ever buy-in deal transacted in the US.

Buy-ins are an exception in the US because they do not permit the company to remove the liability from its balance sheet and reduce expenses such as PBGC premiums. But buy-ins allow a plan sponsor to lock in a price upfront and then convert the contract to a buyout as soon as the sponsor is ready.

In the case of Lockheed Martin, its decision to purchase the contracts covering a large number of retirees was influenced by its \$5bn plan contribution made earlier in 2018 to take advantage of the favorable tax window. For the retirees covered by the buy-in, the company decided they should be spun off into a new plan to be subsequently terminated. This process takes much longer due to regulatory requirements. We presume the contract will be converted to buyout once that process is completed.

Look before you buyout (or buy-in)

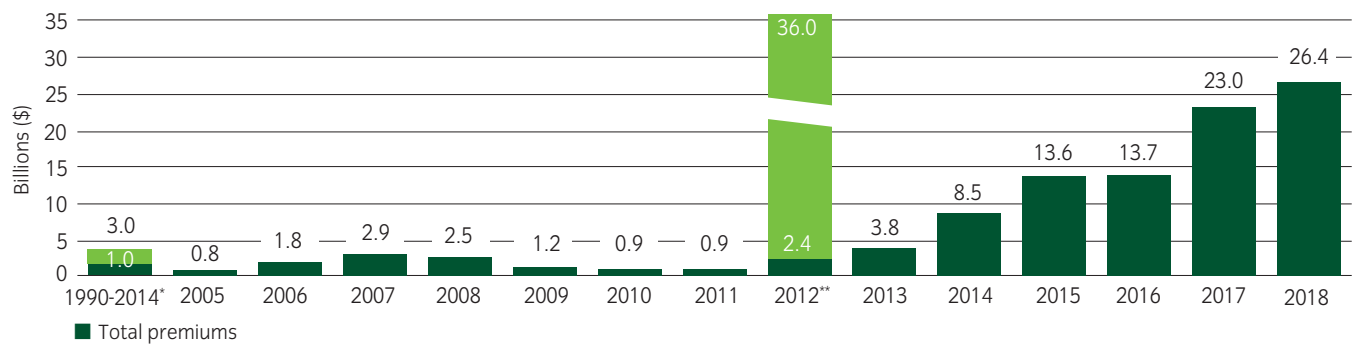
For a plan sponsor looking to de-risk, a retiree buyout (or buy-in) may appear to be a step in the right direction. However, retiree buyouts generally extend the time required to reach full funding or to terminate a plan, because fewer assets are available to close what is now a bigger economic funding gap.

While many of the buyouts to date make sense for the plan sponsor, the underlying economics of many deals, and of many would-be deals, are often not as attractive as they might initially appear. To decide whether or not a buyout represents good value one needs to examine the forward-looking prospects for a plan before and after the buyout.

Read Insight's October 2018 US Pension Market Update for more details.



Chart 5: US buyout historical sales volume⁸



⁸Source: LIMRA Secure Retirement Institute.

* For 15 years between 1990 and 2004, sales were between \$1Bn and \$3Bn. ** \$36.0 includes \$25 GM and \$7.5 Verizon transactions.

LIABILITY COMPLEXITY

Pension plan liabilities have always been complex and difficult to predict, especially when forecasting cashflows over the long term. Historically it was not necessary to manage every single risk: just the major ones such as the overall duration mismatch between the liabilities and assets. However, circumstances have changed, and managing the complexity of pension liabilities is now more materially relevant.

Why is considering liability complexity now so important?

Starting with the 2007 adoption of accounting changes requiring plan sponsors to recognize funded status on their balance sheets, liability-driven investing (LDI) has grown in importance. Correspondingly, so has the importance of understanding the complexities associated with the liabilities, for several reasons:

- **Plan freezes:** Between a third and half of all corporate DB plans in the US are now hard frozen, and this is growing. When the liabilities are no longer accruing (except with interest) and the plan is approaching a termination date, it is natural to want to better understand the actual liabilities. When you have a fixed target, you want to aim more accurately.
- **Funded status improvements:** With plans at or near full funding levels, sponsors need to refine their economic assessments of the liabilities in order to keep asset values in sync. Otherwise, they take an unfavorable asymmetric risk that they might have to make either additional contributions or pay an excise tax on excess assets.
- **Cashflow negativity:** Many plans – especially frozen ones – have matured to the point where they are paying out benefits faster than contribution and investment cash inflows. It is important to understand the near-term liabilities (and hence the

possible near-term cashflow needs) for such plans; otherwise, forced liquidation of other assets may lock in losses if it occurs at an unfavorable time. This risk can be significant for plans that still have a remaining funding gap and are therefore holding some growth assets.

What are some aspects of liability complexity that plans should focus on?

From an LDI perspective, the most challenging aspects of liabilities are those that can vary in terms of amount, certainty and/or timing. Here are some examples:

- **Retirement date optionality:** In a typical plan, participants have options as to when they commence their retirement benefits, and in what form. Aside from the obvious cashflow differences, these different options often have different values, even if they are actuarially equivalent.
- **Lump sums:** Some plans allow retiring participants to take a single lump-sum payment in lieu of an annuity. The availability of lump sums creates very significant uncertainty in both cashflow timing and liability value.
- **Cash balance features:** Cash balance plans not only have lump-sum options, but they include a wide range of crediting formulas for accruing interest on the cash balances. Some of these formulas have caps and floors, which can be particularly difficult to hedge.

Many other possible plan design features can also present challenges such as inflation or indexation provisions, or ancillary benefits that are paid upon death, disability or layoff.

In upcoming newsletters, we intend to cover some specific aspects of liability complexity, highlighting the implications for plan management and investments.

DERIVATIVES

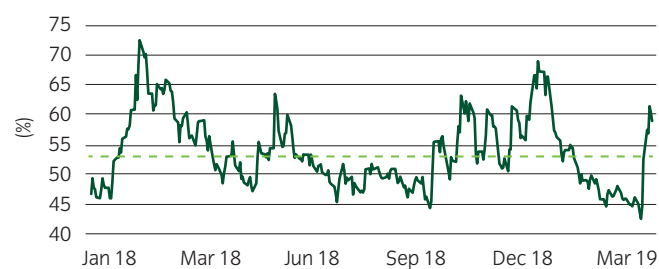
After a tumultuous ending to 2018, equity volatility returned to recent lows at the end of Q1 (see Chart 5) while volatility in the US Treasury market spiked higher as bonds yields sharply decreased (see Chart 6).

The equity rally continues, with US indices approaching all-time high levels once again. For investors worried about downside risk given current valuations, we believe options-based overlay strategies may offer an opportunity to protect recent gains (see Chart 7). Lower volatility in equity options reduces the outright cost of purchasing options. More complex, or more dynamic implementation strategies may also offer some attractive trade-offs, sometimes allowing for a reduction, or in some cases, for the elimination of the upfront premium needed for the protection.

Chart 6: Equity market volatility has remained low in 2019⁹



Chart 7: US Treasury market volatility spiked in late March 2019⁹



⁹Source: Bloomberg as of March 31, 2019. CBOE Volatility Index (VIX) for equity volatility and Merrill Option Volatility Estimate (MOVE) for U.S. Treasury volatility.

EDUCATIONAL: EQUITY PROTECTION STRATEGIES

Although global equity markets were arguably undervalued after the financial crisis, we believe that has changed after a long period of gains. There are many ways to look at equity market valuations. One intuitive measure is to look at the aggregate size of global equity markets versus world nominal GDP. In late 2017, global equity markets surpassed world nominal GDP for the first time since 2007. With quantitative easing being withdrawn, they failed to keep momentum, and in 2018 a broad range of asset classes experienced price corrections before a recovery in early 2019.

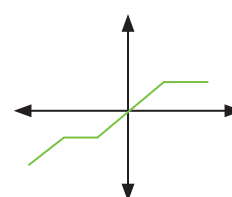
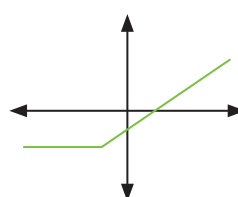
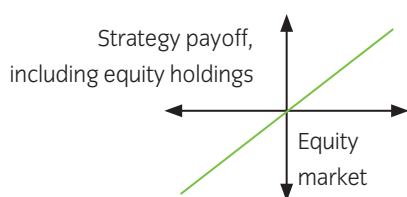
Chart 8: Global equity markets are no longer undervalued¹⁰



As we saw during the global financial crisis, equity holdings can potentially suffer from significant drawdowns if economic conditions deteriorate. Investors may be able to tolerate periodic market corrections in order to capture equity risk premium that allows them to meet long-term investment goals. Larger and more systemic drawdowns can, however, have more significant consequences for plan solvency in our opinion. A practical way to reduce this risk tactically is to enter into an options-based protection strategy. For example, a plan sponsor can purchase a put option, paying a fixed premium upfront in exchange for a profit to counterbalance any losses incurred if equity markets fall below a certain level. More complex strategies can be created, which have the potential to reduce or even eliminate the cost of protection in exchange for other trade-offs.

Table 2: Introducing an equity protection strategy¹¹

	Equities	Simple put protection strategy	Zero-cost protection strategy (example)
Upside participation	Unlimited	Unlimited	Limited
Downside participation	Unlimited	Floored	Floored up to a certain level
Premium payable	No	Yes	Potentially none



Description	Straight equity exposure provides full participation in any gains but the holder is also fully exposed to any downside during a correction or bear market.	A simple protection strategy purchases a put option that provides protection if equities fall beyond a certain level. The option has a cost, but the investor still has exposure to equity upside.	A more complex strategy can be created to eliminate the cost of protection. This could involve capping upside participation and/or introducing some exposure to losses if markets experience a significant fall.
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¹⁰Source: Bloomberg as of March 31, 2019. ¹¹For illustrative purposes only.

KEY MARKET RISKS

The Fed could be boxing itself in too soon

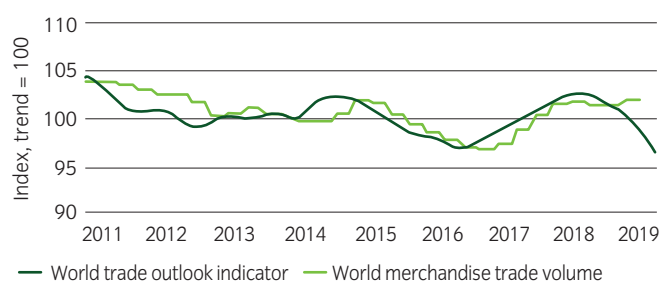
Markets have quickly moved to reflect the change in central bank policy and to call the peak in US interest rates, with an expectation that the next move by the Fed will be to cut. However, it is too soon to determine that the cycle has clearly turned downwards, and it is possible that this could be a mid-cycle slowdown. For now, we believe US interest rates are likely to be held at current levels, and history would suggest that interest rates can plateau for considerable periods of time. If the economy starts to gain momentum, the Fed may once again be forced to change position, and with interest rates still at historically low levels, the tightening cycle may yet have further to run. As a result, we are cautious that markets may have shifted too rapidly, and we believe the Fed may be limiting its policy response too quickly.

Global trade appears to be weakening

Although the market appears to believe the trade dispute between the US and China is progressing towards a resolution, the effects of previous rounds of tariffs are still feeding into economic activity. The World Trade Outlook Indicator, constructed by the World Trade Organization, has historically exhibited a high correlation with world trade volumes. It has turned sharply lower.

The indicator aims to reflect the trajectory of world trade, with a reading of 100 signaling growth in line with medium-term trends. The latest reading of 96.3 is the lowest reading since March 2010 and suggests global trade is losing momentum. The greatest weakness in the underlying data was in electronic components, automobile production and sales, and agricultural raw materials.

Chart 9: World trade set to drop below recent medium-term trend¹²



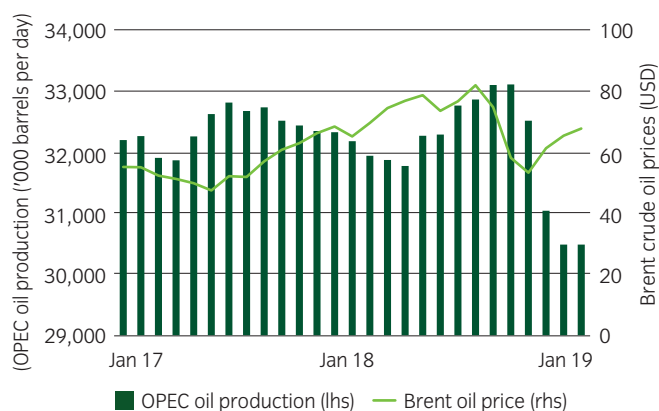
A firmer outlook for oil could become an inflationary tailwind

Oil prices declined in the second half of 2018, driven by perceptions of a weakening global economy and rising US shale oil production. The OPEC+ Group, which consists of OPEC and other oil-producing countries such as Russia, reacted by agreeing in December to cut production by 1.2m barrels per day (b/d) to the end of 2019. This appears to have underpinned prices, which trended upwards over the quarter.

Taking a longer-term view, the International Energy Agency is predicting US production will grow by 4m b/d over the next five years. Global oil demand expected to grow by 1.2m b/d a year over the same period, absorbing the increase in US supply over time. The cuts being enacted by the OPEC+ Group appear to be sufficient to remove the short-term oversupply, and if these forecasts are correct, the longer-term outlook for oil markets appears to be more positive, in our opinion.

Due to these factors, the disinflationary impact from oil prices may now be behind us.

Chart 10: Oil price has been supported by supply cuts¹³



¹²Source: World Trade Organization, World Trade Outlook Indicator February 2019 update. ¹³Source: Bloomberg. Data as of March 31, 2019.

SUMMARY OF KEY MARKET MOVEMENTS OVER Q1 2019

- The US Treasury curve shifted lower in Q1, with 2-year Treasury yields falling by 23bp, 10-year yields falling by 28bp and 30-year yields falling by 20bp. The pivot by the Fed to shift to a neutral position, and the announcement of the end of its balance sheet reduction, reinforced market perceptions that the economic outlook was deteriorating globally. A sharp rebound in equity markets and loosening financial conditions were insufficient to alleviate these concerns.
- With risk assets generally performing well, corporate spreads tightened, with the Bloomberg Barclays Intermediate Corporate Index spread contracting from 132bp to 93bp and the Bloomberg Barclays Long Corporate Index spread contracting from 200bp to 173bp.
- US equity markets performed well, with the S&P 500 Index experiencing its second-best Q1 in the last 20 years, with a total return of 12.5%. Volatility declined and remained below recent average levels.
- The US dollar continues to trade in a tight range, unaffected by the change in Fed policy, in reaction to other central banks becoming more cautious globally.

Table 3: Q1 2019 Fixed Income/Equity Index Returns (%) and Volatility Index Levels¹⁴

Index	Q1 2019 Total Return	12 month Total Return	Q1 2019 Excess Return	12 month Excess Return
Barclays Treasury	2.11	4.22	–	–
Barclays Intermediate Treasury	1.59	3.80	–	–
Barclays Long Treasury	4.67	6.24	–	–
Barclays Corporate	5.14	4.94	2.73	0.26
Barclays Intermediate Corporate	3.82	5.16	2.11	1.15
Barclays Long Corporate	7.97	4.38	4.12	-1.73
BofA Merrill Lynch High Yield (H0A0)	7.40	5.94	5.77	2.04
S&P 500 Index	13.65	9.50	–	–
MSCI Emerging Markets Equity Index	9.91	-7.41	–	–
VIX ¹⁵	14	–	–	–
MOVE ¹⁵	59	–	–	–

¹⁴ Source: Barclays and Bloomberg as of March 31, 2019. ¹⁵ VIX and MOVE are actual value at quarter end.



THE ECONOMY

Broad-based downgrades in growth and inflation forecasts

Forecasts for growth and inflation were broadly reduced over the quarter, with the outlook for European growth slowing sharply.

Global inflation is now expected to moderate to 3.1% in 2019, with developed market inflation at 1.8%, below the 2% inflation target that most developed market central banks follow¹⁶.

Table 4: Consensus GDP and CPI expectations¹⁶

Real GDP	Consensus*			Change over Q1	
	2017 ^E	2018 ^F	2019 ^F	2018 ^F	2019 ^F
United States	2.3	2.9	2.4	0.0	-0.2
Euro Area	2.8	1.8	1.2	-0.1	-0.4
Japan	1.6	0.8	0.7	-0.1	-0.2
China	6.9	6.6	6.2	0.0	0.0
Developed Markets	2.4	2.3	1.8	0.0	-0.3
Emerging Markets	4.6	5.0	4.8	0.0	-0.1
Global	3.6	3.7	3.4	0.0	-0.1

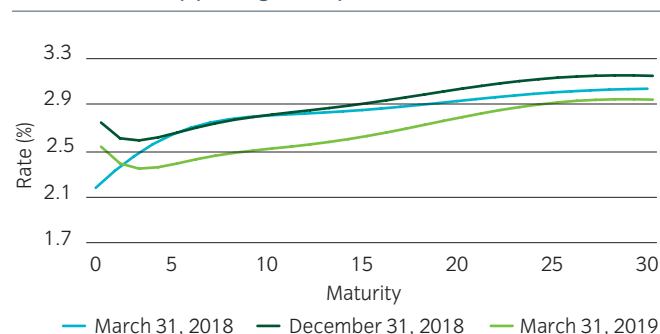
CPI	Consensus*			Change over Q1	
	2017 ^E	2018 ^F	2019 ^F	2018 ^F	2019 ^F
United States	2.1	2.4	1.9	0.0	-0.3
Euro Area	1.5	1.8	1.4	0.0	-0.3
Japan	0.5	1.0	0.9	0.0	-0.2
China	1.6	2.1	2.1	-0.1	-0.2
Developed Markets	2.0	2.3	1.8	0.0	-0.3
Emerging Markets	16.9	3.5	3.6	-0.1	-0.2
Global	2.9	3.3	3.1	0.0	-0.2

E=Expected F=Forecast. * Bloomberg consensus forecast

RATE MARKETS

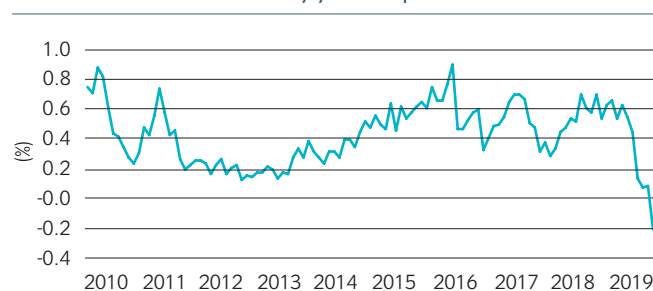
The plunge in Treasury yields over the quarter shifted the yield curve lower, with maturities beyond 2-years moving to levels well below those at the same point in 2018 (see Chart 11).

Chart 11: Treasury yields generally fell in Q1¹⁷



At the shorter end of the yield curve, yields inverted relative to cash rates, with an 80bp shift in the 2-year versus 3-month rate.

Chart 12: Short-dated Treasury yield drops below cash rate¹⁷



US TREASURY MARKET TECHNICALS

Global trade war remains unresolved

At its January presentation, the US Treasury Borrowing Advisory Committee estimated that in Q1 of fiscal year 2019 (Q4 of calendar year 2018), tax receipts rose by \$17bn year-over-year, versus a \$45bn increase in outlays. It was noted there was a \$1.4trn reduction in cumulative projected borrowing needs over the next 10 years, with this largely attributed to a downward revision to interest rate forecasts and the return of discretionary spending caps associated with the Budget Control Act of 2011.

The committee discussed the possibility of issuing a SOFR-linked floating rate note and agreed the idea deserved further study. TIPS issuance is to be increased gradually, resulting in a \$24bn increase over the remainder of calendar year 2019, with the bulk of the increase in net issuance via the introduction of a new 5-year October maturity issue.

Table 5: US Treasury Net Marketable Borrowing¹⁸

Market (\$bn)	2017	2018	2019 YTD	Yr/Yr Change
Bills issuance	155	438	100	246
Floating rate issuance	9	26	15	33
2-5yr Treasury issuance	41	210	91	138
5-10yr Treasury issuance	134	139	52	118
Over 10yr Treasury issuance	126	176	47	38
5-10yr TIPS	36	32	26	-3
Over 10yr TIPS	19	19	5	0
Buybacks	0	0	0	0
Total	519	1,040	335	571

¹⁶ Source: Insight Investment and Bloomberg as of March 31, 2019. Emerging market inflation data includes Venezuela.

¹⁷ Source: Bloomberg as of March 31, 2019. ¹⁸ Source: Insight Investment, US Treasury as of March 31, 2019.



While select corporate BBBs can add attractive yield to a portfolio, we would note that corporate BBBs are not the only BBB risk out there.

There is also the area of Secured Finance which is not only diversifying this risk but potentially also does so at a yield pick up in a risk-aware fashion so long as your manager has the requisite expertise to capture the complexity premium in the space.



CREDIT FUNDAMENTALS

The case for BBB

Amid a decade of easy central bank policy, historically low interest rates and quantitative easing, the corporate sector has increased financial leverage, with the share of BBB-rated debt rising from 37.5% of the long corporate index at the end of 2008 to 53% at the end of 2018. This increase in outstanding BBB debt may have led some investors to become more cautious, shunning or allocating away from the sector. While robust credit underwriting is always paramount, we would advocate against a wholesale avoidance of BBB corporates for several reasons.

Diversification

Firstly, of the 453 issuers in the long corporate index, 243 are rated BBB. Investing in well-run BBB companies can increase the diversification within a portfolio and reduce idiosyncratic and event risk. It is imperative to realize that the BBB universe is extremely diverse, including both strong companies with higher leverage, or higher-risk businesses with lower leverage. As a result, we would caution against avoiding the sector in its entirety, given that it contains long-established firms with strong cashflow profiles and debt priced to compensate for higher risk.

Deliberate leverage rather than forced

Moreover, we would differentiate between firms that have increased leverage by choice rather than by force. It is a natural by-product of easy monetary policy for corporations to operate with higher levels of leverage, as the cost of that leverage is low. This has resulted in an increase in share buybacks, dividends and M&A activity. An important point is that these actions can be quickly stopped or even reversed during times of duress, whereas rising leverage due to lower earnings power may point to secular problems that are less easily reversed. We believe the clear majority of BBB-rated firms have the capacity to manage their business through a cycle while retaining investment grade ratings, as was shown by much of the energy and pipeline sector during the 2016-2017 commodity crash. While most BBB firms are in control of their destiny, some have clearly added too much leverage, which will become more apparent in an economic downturn. Given this inevitable eventuality, it is critical to have a manager who carefully underwrites its credit holdings, rather than passively allocating to the sector.

Stronger return profile

A final key reason to invest in BBBs is that they have historically offered a stronger return profile than higher-rated debt. BBB debt has offered excess spread relative to actual losses due to downgrades and defaults, likely a result of guideline and regulatory restrictions against holding sub-investment grade debt.

A common counter to this argument is that BBBs will suffer worse losses in future downturns than has historically been the case due to the higher level of leverage. However, we would note that BBBs offer a substantially higher spread pickup than better-rated corporates, particularly at the long end, not only when adjusting for median losses but also for the worst five-year loss rate. This arguably provides an ample cushion against a future downturn, even if this cycle's leveraging leads to worse-than-average losses (see Charts 13 and 14). BBBs have generated the highest excess returns since 1989 due to the excessive risk premium investors have demanded for downgrade risk. Unsurprisingly, BBB returns have exhibited greater volatility, especially during the global financial crisis.

Chart 13: Default-adjusted spread (50th percentile loss)¹⁹

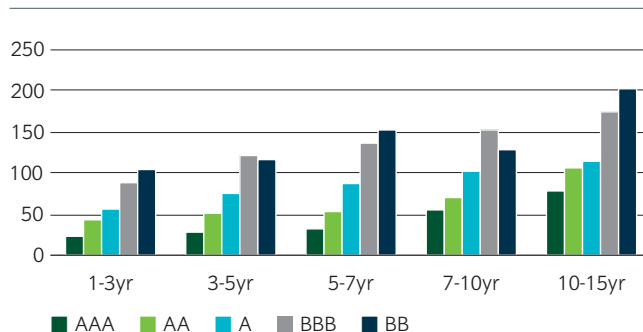
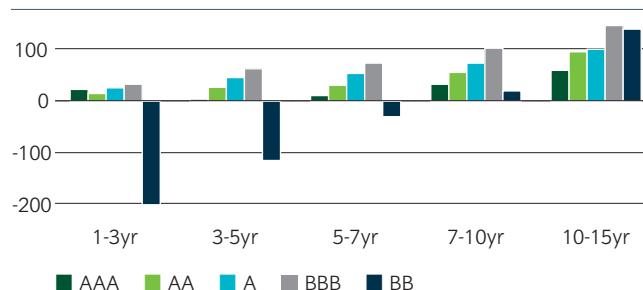


Chart 14: Default-adjusted spread (worst loss)¹⁹



¹⁹ Source: Moody's, Insight Investment. Calculations as of February 5, 2019. Assumes 40% recovery rate.

Interestingly, over the period, BBB- and A-rated credits have generated positive excess returns as often as each other, suggesting loss-averse investors do not benefit from holding A-rated debt and avoiding BBB-rated debt. While AA debt has also historically generated strong performance, narrower spreads mean there is a smaller cushion to offset the impact of spread widening. Historically, BBB-rated debt has outperformed A-rated debt 63% of the time. Importantly, BBBs are not the only rating spectrum to face downgrade risk. During the financial crisis, AA- and A-rated financial debt, for instance, was downgraded to BBB. Had an investor been a forced seller on these downgrades due to guideline restrictions, they would have locked in material losses, whereas an investor willing and able to maintain these holdings would have benefited from the strong recovery in much of this debt. We would caution against having guideline restrictions that result in forced selling once a credit falls out of the single-A benchmark, as we would argue that BBB credits are still extremely durable and creditworthy overall.

Given the diversity benefits they offer, the sustainable capital structures they possess and the excess spread on offer, we continue to believe an allocation to carefully monitored and screened BBB corporate debt will be additive to a fixed income allocation over time, relative to a wholesale avoidance of BBBs or a passive allocation to the entire sector.

Also, while select corporate BBBs can add attractive yield to a portfolio, we would note that corporate BBBs are not the only BBB risk out there. There is also the area of Secured Finance, which not only diversifies risk, but potentially does so at a yield pick up in a risk-aware fashion – so long as your manager has the requisite expertise to capture the complexity premium in the space.

Table 6: BBB-rated debt has exhibited attractive returns relative to volatility²⁰

	Long AA	Long A	Long BBB
Average Excess Return	0.52%	0.17%	0.97%
SD	5.92%	6.98%	8.98%
Median	0.56%	0.63%	0.85%
% Positive	62.8%	59.7%	59.7%

Chart 15: BBB versus A year-on-year % excess return²⁰

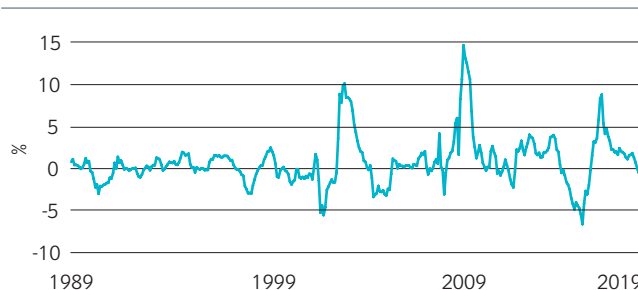
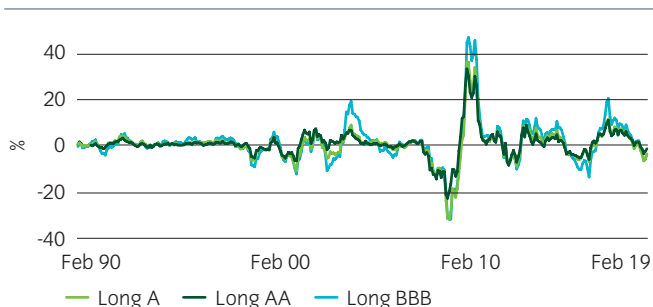


Chart 16: Long-dated credit year-on-year % excess return²⁰



²⁰ Source: Insight Investment as of February 28, 2019.



Putting the BBB debate into context

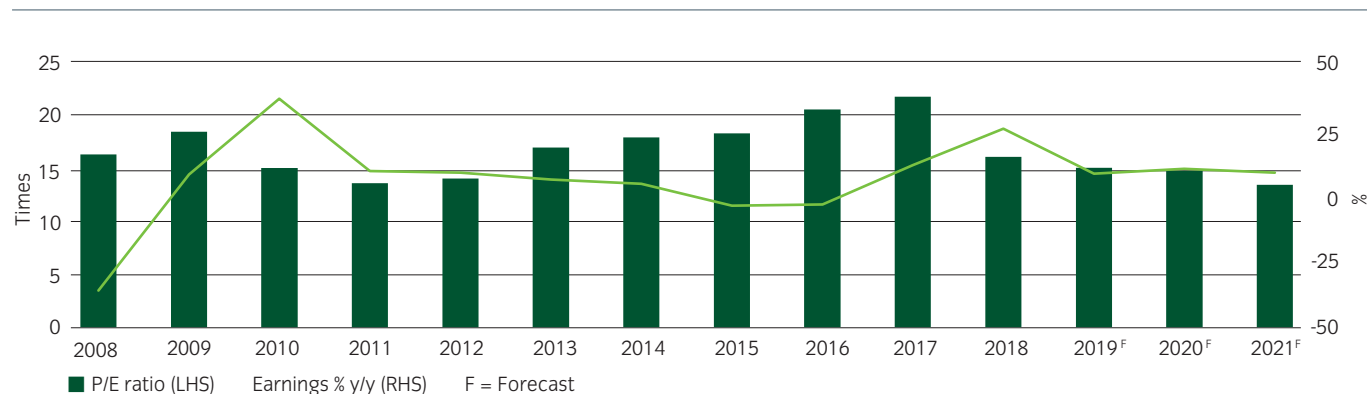
To put the BBB debate into a real-world context, we examine the credit ratings of the large, well-known companies in the S&P 500 Index (see Table 7). We would highlight that the average credit rating is BBB+.

Although there is some uncertainty over the economic outlook, current earnings forecasts for the S&P 500 Index suggest a moderation from the robust growth in 2018, but remain at a reasonable level (see Chart 17).

Table 7: S&P 500 Index companies by credit rating²¹

S&P 500 credit rating breakdown					
AAA	2	A-	63	BB-	11
AA+	2	BBB+	98	B+	3
AA	3	BBB	95	B	1
AA-	6	BBB-	63	B-	2
A+	22	BB+	28	CCC-D	0
A	37	BB	15	Not Rated	49
Average credit rating: BBB+					

Chart 17: Earnings for S&P 500 Index companies are forecast to remain at a reasonable level²¹



²¹ Source: Insight Investment as of March 31, 2019.

CREDIT MARKET TECHNICALS

Year-to-date supply in both US investment grade and high yield continues to run below 2017 and 2018 levels. For investment grade credit, repatriation of foreign cash holdings reduced supply in 2018, with issuance from the technology and pharmaceutical sectors (both significant holders of offshore cash) collapsing. There is no expectation for this to change in 2019.

We expect a decrease in primary market issuance in 2019 of approximately 5%-10% relative to 2018. This is driven to a large extent by less M&A-related issuance, and more expensive after-tax cost of debt. The relatively flat yield curve may lead to an uptick in longer-dated corporate issuance relative to levels seen over the past few years.

In US high yield credit, \$22.4bn of debt was upgraded to investment grade, with \$2.3bn of debt downgraded into the high yield bracket. New issues added \$53.1bn, offset by \$25.1bn in called debt, \$0.54bn in bonds falling below 12mths to maturity and \$4.7bn in defaulted debt.

Demand for high yield debt was positive, with Lipper estimating that high yield mutual funds and ETFs had an inflow of \$10.4bn in the first quarter.

Table 8: New U.S. bond issuance in \$Billions²²

Market	2017 Total	2018 Total	Q1 2019	Q1 Yr/Yr Change
U.S. Investment Grade	1,468	1,208	389	-1.1%
U.S. High Yield	278	171	60	12.1%

CORPORATE BOND MARKET PERFORMANCE

Credit spreads generally declined in Q1, as risk markets rebounded over the quarter. Aggregate US corporate spreads tightened by 34bp over the quarter, while spreads at the longer end tightened by 27bp (see Table 9).

Table 9: Average spread (bps) of US corporate bonds²³

Barclays Index	Q1 2018	Q4 2018	Q1 2019	Weight (%)
Corporate	109	153	119	100.0%
Intermediate	91	132	93	67.9%
Long	148	200	173	32.1%

Within investment grade issuers, BBB-rated issues experienced the most significant spread contraction, finishing the quarter 32bp tighter (see Table 10).

Table 10: Average spread (bps) of long corporate bonds by credit rating²⁴

Barclays Index	Q1 2018	Q1 2019	YTD change
Total	148	173	-27
AAA	83	89	-14
AA	98	107	-16
A	117	128	-20
BBB	180	215	-32

²² Source: Insight Investment, Bloomberg Barclays as of March 31, 2019.

²³ Source: Bloomberg Barclays as of March 31, 2019, maturities from 1 to 30 years.

²⁴ Source: Bloomberg Barclays as of March 31, 2019.

OUTLOOK

The end of the cycle or just a mid-cycle slowdown?

Just as central banks outside of the US were looking to embark on their own paths to policy normalization, so a rapid deterioration in the economic outlook, especially in Europe, has brought this process to an abrupt halt. Although the US economy has performed well, buoyed by tax cuts, low unemployment and strong corporate earnings, weakness in the global economy has slowly eroded confidence in the outlook, and inflation continues to be elusive. Bond yields have dropped across the world and Treasury yields have been sucked downwards in sympathy – a trend that gained momentum when the Fed validated market concerns by pivoting to a more neutral stance.

As investors attempt to explain the moves, various theories have emerged. Suggestions that perhaps the Fed tightened policy too rapidly, or that Europe could be on the verge of a deflationary spiral if it falls back into recession when inflation is already at such low levels, are both popular ideas. Perhaps a simpler explanation lies in the lagged effects of the global trade war that broke out in early 2018. The World Trade Organization's World Trade Indicator would support this view. Talks between the US and China appear to have progressed, but an early resolution is unlikely.

At the end of 2018, we highlighted that although the outlook was uncertain, at least valuations had now returned towards fair value in many asset classes. The sharp rally experienced by risk assets in Q1 has now reversed some of this valuation argument, but the outlook is no less unclear. This would leave us cautious on investment grade credit, but actually more positive on some higher-risk assets such as high yield and emerging market debt. If interest rates are to remain on hold, but economic growth is still at reasonable levels, then it would lead us to believe that spread strategies may work well. We are thus carefully monitoring for signals as to whether the current softness is developing into a deeper cyclical downturn or whether it is simply a mid-cycle slowdown, in which case the Fed may be forced to change position once again and return to its gradual tightening cycle.

Market outlooks

Global investment grade: Credit markets rebounded in the first quarter, as risk assets were buoyed by the dovish shift in central bank rhetoric and US-China trade discussions advanced. Although markets have performed well, we remain cautious, given the deteriorating outlook for global growth. The growth picture in Europe is especially concerning, and although the stimulus being enacted in China is helpful, we regard it as insufficient to meaningfully change the outlook. We continue to believe that careful stock and sector selection will be a key driver of performance and favor more defensive sectors, as well as the insurance sector, where we believe some issuers offer

long-term value, especially in the US. We are cautious on sterling credit assets, which remain vulnerable to political headlines.

High yield credit: We continue to expect a benign default environment over 2019, as companies have proactively managed their liquidity and maturity profiles, meaning there is limited refinancing risk, even if the economic environment is weaker than in recent years. Unless expectations for defaults change, the attractive level of income available in the high yield market leaves us constructive on the asset class, especially in shorter-maturity issues, which are more insulated from any volatility in spreads. We do not currently anticipate a wave of BBB downgrades; where we have seen idiosyncratic weakness, the companies in question have so far been able to pull appropriate levers to swiftly improve their leverage metrics. This should support the technical backdrop with limited supply a further positive for the asset class.

Emerging markets: With the Fed and other developed market central banks shifting to neutral or even contemplating easier policy, developed market bond yields have declined, which is supportive for emerging market debt. We are seeing early indications that the economic fundamentals within emerging markets are improving, led by China, which has been easing policy to stimulate growth. In this environment we believe emerging market investment grade debt in hard currencies is attractive. Emerging market high yield debt has cheapened and valuations appear attractive, but until there is greater clarity on the growth outlook, markets are likely to continue to demand an elevated risk premium, which will make price appreciation difficult. We believe that local market government debt offers attractive real yields in maturities beyond 10 years (and excluding CEEMEA), but uncertainty around the path of the US dollar makes us cautious to take unhedged currency positions at this stage.

Secured finance: The European and US structured credit markets had a strong start to 2019, helped by low supply in Europe and strong investor demand in the US. European markets have taken some time to adapt to new securitization regulations and this curtailed supply somewhat, but the pipeline of opportunities has begun to recover. In the US, higher-beta asset classes in the consumer asset-backed securities sector performed well, given the shift in expectations for future monetary tightening, and are likely to continue to be supported, unless there is a meaningful deterioration in the economic outlook. In the US, we believe that shorter-maturity paper with AAA credit ratings offer potential for attractive returns with relatively modest downside risk. In Europe, we favor senior financings collateralized by portfolios of non-performing loans where deals are short-dated, extremely well-structured, and have low leverage and attractive high yields.

Risks to our view include:

- Inflationary pressures unexpectedly turn upwards, forcing the Fed to shift back to tightening policy, with disruptive effects for markets.
- With the US taking a more confrontational approach to international relations, there are risks that tensions escalate once again and protectionism reaches a point where it has a more severe impact on the growth outlook.
- Fears of increasing US Treasury supply lead to a disorderly upward shift in yields, which could undermine sentiment towards risk assets.
- Political uncertainty in Europe rises further, with Italy and Brexit two obvious stress points, exacerbated by the deteriorating European growth outlook. Contagion from an unexpected event could spread globally and have a broader impact on risk assets.

INDEX DEFINITIONS

Bloomberg Barclays Treasury: Barclays US Treasury Index represents the US Treasury component of the US Government index. An investment cannot be made directly in a market index.

Bloomberg Barclays Intermediate Treasury: Unmanaged index that tracks the performance of intermediate US government securities.

Bloomberg Barclays Long Treasury: Unmanaged index that includes all publicly issued US Treasury securities that have a remaining maturity of 10 or more years, are rated investment grade, and have \$250 million or more of outstanding face value.

Bloomberg Barclays Corporate: Unmanaged index that includes dollar-denominated debt from US and non-US industrial, utility, and financial institutions issuers.

Bloomberg Barclays Intermediate Corporate: Unmanaged index that tracks the performance of intermediate dollar-denominated debt from US and non-US industrial, utility, and financial institutions issuers.

Bloomberg Barclays Long Corporate: Unmanaged index that includes dollar-denominated debt from US and non-US industrial, utility, and financial institutions issuers with a duration of 10+ years.

Bank of America Merrill Lynch High Yield: A commonly used benchmark-index for high-yield corporate bonds.

S&P 500 Index: The Standard & Poor's 500, often abbreviated as the S&P 500, or just the S&P, is an American stock market index based on the market capitalizations of 500 large companies having common stock listed on the NYSE or NASDAQ. The S&P 500 index components and their weightings are determined by S&P Dow Jones Indices.

MSCI Emerging Market Equity Index: An index created by Morgan Stanley Capital International (MSCI) designed to measure equity market performance in global emerging markets.

VIX: The CBOE Volatility Index, known by its ticker symbol VIX, is a popular measure of the stock market's expectation of volatility implied by S&P 500 index options, calculated and published by the Chicago Board Options Exchange (CBOE).

MOVE: The Merrill Lynch MOVE index is a yield curve weighted index of the normalized implied volatility on 1-month Treasury options.

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BBBs: SEPARATING THE WHEAT FROM THE CHAFF
Much has been written recently about the potential risk of US corporate BBB-rated securities (“BBBs”) given the secular increase of leverage in corporate balance sheets.



ALTERNATIVES TO HEDGE FUNDS IN THE LIQUID ALTERNATIVE SPACE
With valuations across bond and equity markets now stretched, investors are looking for different ways to generate returns.



SHOULD HIGH YIELD INVESTORS WORRY ABOUT THE BBB OVERHANG?
Although global economic growth continues to show momentum, at some stage the credit cycle will turn, or an event will impact a particular sector, leading to credit downgrades.



THE FIX FOR FIXED INCOME
Embracing a more benchmark-agnostic approach has the potential to help investors maximize their returns from credit, through income-focused and total-return credit strategies.



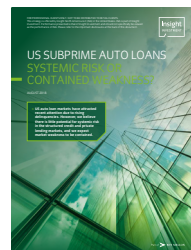
A BRIDGE TO HIGHER QUALITY PRIVATE DEBT
Insight believes that bridge lending has the potential to offer higher credit quality exposure than other private debt markets (such as middle-market lending) and stronger structural protections than traditional corporate bonds.



INFLATION OUTLOOK FOCUS: GLOBAL INFLATION
Should investors be worried about global inflation? We examine the short and long-term factors currently impacting inflation data.



SOVEREIGNS AND SUSTAINABILITY
Most ESG analysis and research focuses on corporates – not countries. We have therefore built a proprietary model to help us better understand the ESG risks at the country level across our portfolios.



US SUBPRIME AUTO LOANS: SYSTEMIC RISK OR CONTAINED WEAKNESS?
US auto loan markets have attracted recent attention due to rising delinquencies. However, we believe there is little potential for systemic risk in the structured credit and private lending markets, and we expect market weakness to be contained.

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