Monthly pension update

NOVEMBER 2018

DID YOU KNOW?

November marked the 10 year anniversary of the widest corporate bond spreads on record. At the end of November 2008, the US Corporate Index spread was 607 (compared to 137 at month end November 2018).

FUNDED STATUS FAST FACTS

87.0%
FUNDED STATUS **ROSE 0.5%** THIS MONTH

+1.7% YTD
FUNDED STATUS INCREASE

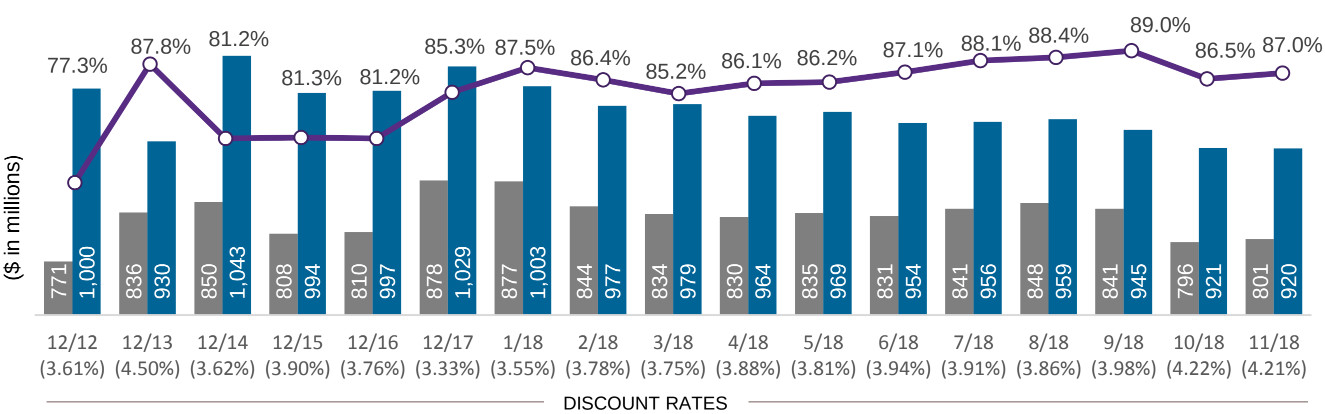
+88BPS
DISCOUNT RATE YEAR TO DATE CHANGE

MONTHLY CONTRIBUTORS OF FUNDED STATUS CHANGE:
CREDIT SPREADS AND GROWTH ASSETS

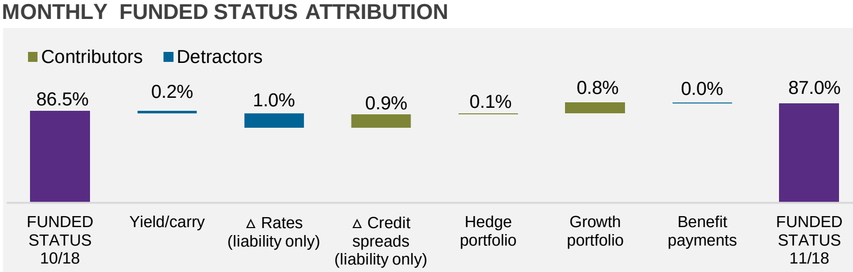
MONTHLY DETRACTORS OF FUNDED STATUS CHANGE:
TREASURY RATES

HISTORICAL FUNDED STATUS

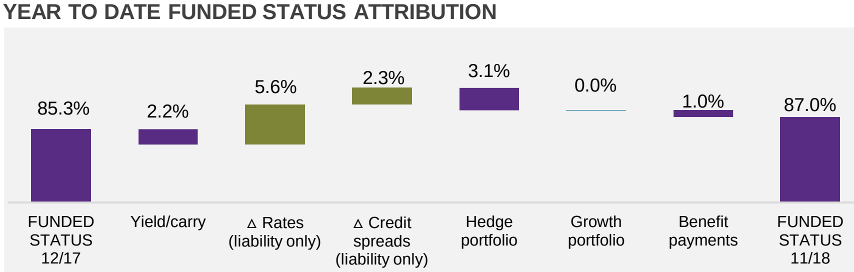
Performance of average defined benefit pension plan since 12/31/12



MONTHLY FUNDED STATUS ATTRIBUTION



YEAR TO DATE FUNDED STATUS ATTRIBUTION



Changes	Month	Year
Funded Status %	▲ 0.5%	▲ 1.7%
Discount Rate (bps)	▼ (1)	▲ 88
Treasury Rates(bps)	▼ (12)	▲ 60
Credit Spreads (bps)	▲ 11	▲ 28
Liabilities (mm)	▲ ($0.6)	▲ ($109.1)
Assets (mm)	▲ $4.3	▼ ($77.8)
Funded Status (mm)	▲ $4.9	▲ $31.3

Note: Arrow indicates effect on funded status.

Source: J.P. Morgan, FTSE Pension Discount Curve, Bloomberg. As of November 30, 2018. For illustrative purposes only. Past performance is not indicative of future results.

J.P.Morgan
Asset Management

MACROECONOMIC TRENDS IMPACTING PENSION PLANS

A breakdown of what you need to watch this month as you consider investment implications for your plan

GROWTH

We continue to expect that global growth will resynchronize as we approach 2019, but incoming data has been sending mixed signals. There has been some stabilization in the hard data coming out of Europe and Japan, but survey-based indicators like the PMIs are yet to provide confirmation of this shift. Furthermore, U.S. growth seems to be tracking a 2.5% pace in 4Q18, well below the pace of growth observed during the middle of the year. While we expect real investment spending to remain in line with its long-term average as long as trade tensions are unresolved, the recent softening in inflation should provide support for consumer spending and overall growth in 2019.

INFLATION

Inflation has softened as energy prices have declined from their early October peaks. While we still believe that tighter labor markets and rising wages will push inflation higher into the end of the cycle, this short-term pullback in price growth has afforded the Federal Reserve more flexibility and provided a boost to real incomes and consumption. That said, with output gaps continuing to close around the world, the path of least resistance for inflation remains higher.

RATES

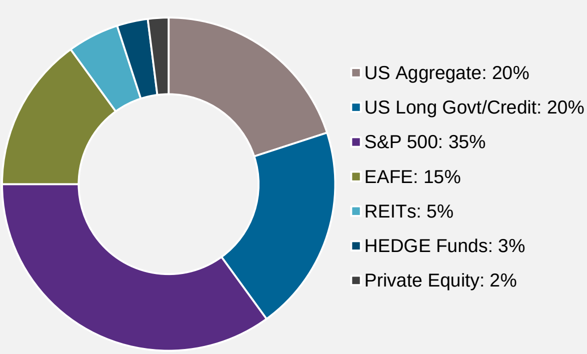
Slower economic growth and more benign inflation suggests that risks to the interest rate outlook are tilted to the downside. We still expect that the Federal Reserve (Fed) will hike interest rates at the December meeting, as not doing so would undermine its credibility. However, we believe the Fed will signal a more data dependent approach in 2019, and expect that they will hike two times and then pause. With inflation expected to remain in a comfortable range, and fiscal stimulus running its course, the Fed will likely be inclined to “wait and see” how things play out before hiking above and beyond its estimate of the neutral rate.

RETURNS

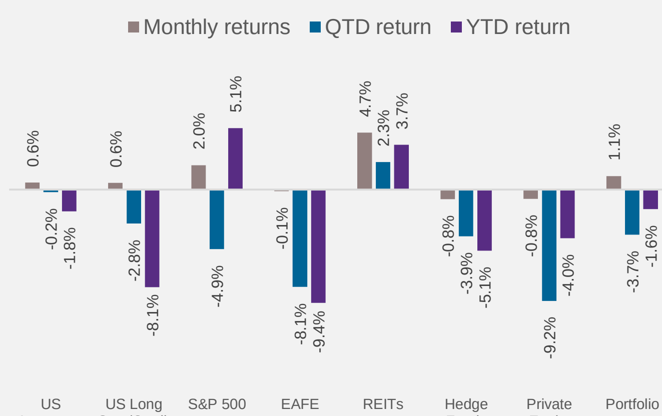
While the long-term return environment for risk assets remains challenged, the recent re-rating in valuations has left equity markets looking more attractive than was the case earlier this year. Importantly, however, the sustainable level of interest rates for the economy appears to be higher than is the case for the stock market, suggesting that further rate hikes will be accompanied by elevated volatility. Trade tensions continue to represent a risk to the broader outlook, but recent developments suggest the worst-case scenario may not materialize. That said, with fixed income offering positive real returns, investors finally have a viable investment alternative to risk assets.

ASSET ALLOCATION & MARKET SNAPSHOT (As of 10/31/18)

PLAN ASSET ALLOCATION

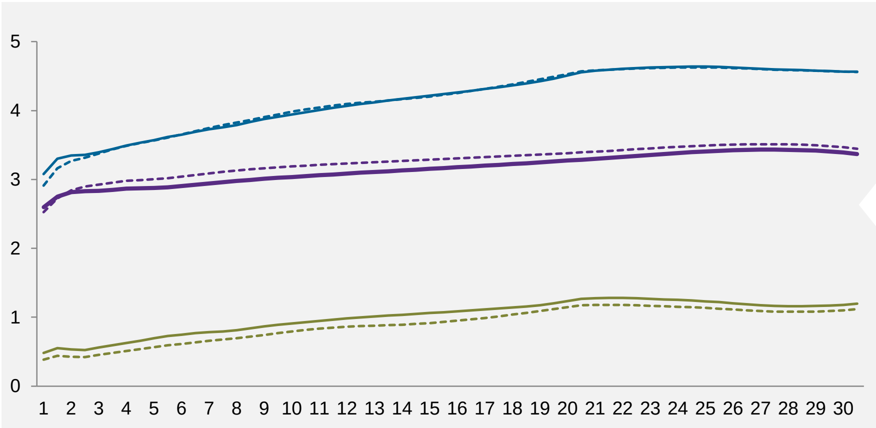


ASSET AND PORTFOLIO RETURNS



Source: J.P. Morgan, FTSE Pension Discount Curve, Bloomberg. As of November 30, 2018. For illustrative purposes only.
Past performance is not indicative of future results. For more information on our fixed income outlook, please visit our blog: http://blog.jpmorganinstitutional.com

YIELD CURVE CHANGES

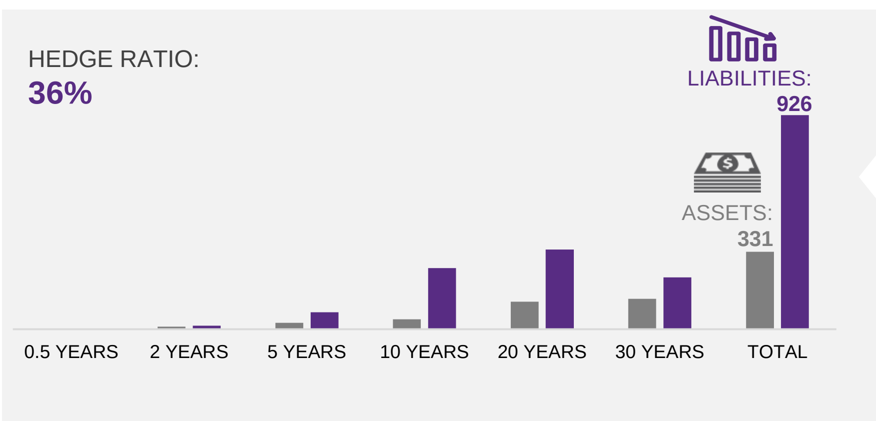


Over the month the treasury curve flattened while credit spreads widened, leaving discount rates down 1bp for the month.

INTERESTED IN A DEEPER DIVE ON FIXED INCOME?

Click here for all the charts you need to understand what is happening in the fixed income markets.

PLAN RISK ANALYTICS



DURATION SENSITIVITY

The overall hedge ratio is defined as the ratio of asset dollar duration to liability dollar duration.

We estimate that this is approximately 36%.

We note that a higher hedge ratio, constructed with better key rate duration (KRD) matching along the curve would reduce funded status volatility. Matching the dollar duration of assets and liabilities across the curve structure would better insulate the plan against non-parallel yield curve movements.

Change in Interest Rates	Change in Growth Portfolio								
	-20%	-15%	-10%	-5%	-	+5%	+10%	+15%	+20%
+100bps	80.0%	83.2%	86.4%	89.5%	92.7%	95.9%	99.0%	102.2%	105.3%
+75bps	78.8%	81.9%	85.0%	88.1%	91.2%	94.2%	97.3%	100.4%	103.5%
+50bps	77.7%	80.7%	83.7%	86.7%	89.7%	92.7%	95.7%	98.7%	101.7%
+25bps	76.6%	79.6%	82.5%	85.4%	88.3%	91.2%	94.1%	97.1%	100.0%
-	75.6%	78.5%	81.3%	84.2%	87.0%	89.8%	92.7%	95.5%	98.4%
-25bps	74.6%	77.4%	80.2%	83.0%	85.8%	88.5%	91.3%	94.1%	96.9%
-50bps	73.7%	76.4%	79.1%	81.9%	84.6%	87.3%	90.0%	92.7%	95.4%
-75bps	72.8%	75.5%	78.1%	80.8%	83.4%	86.1%	88.7%	91.4%	94.0%
-100bps	72.0%	74.6%	77.2%	79.8%	82.3%	84.9%	87.5%	90.1%	92.7%

SCENARIO ANALYSIS

The heat map shows the change in funded status under different instantaneous interest rate and growth portfolio movements.

We note that reducing the allocation to equities and increasing the hedge ratio will likely narrow the change of possible outcomes and help limit downside funded status scenarios.

Source: J.P. Morgan, FTSE Pension Discount Curve, Bloomberg. As of November 30, 2018. For illustrative purposes only.
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Credit Risk: There is a risk that issuers and counterparties will not make payments on securities, repurchase agreements or other investments held by the strategy.

Such defaults could result in losses to the strategy. In addition, the credit quality of securities held by the strategy may be lowered if an issuer's financial condition changes. Lower credit quality may lead to greater volatility in the price of a security and in shares of the strategy. Lower credit quality also may affect liquidity and make it difficult for the strategy to sell the security. The strategy may invest in securities that are rated in the lowest investment grade category. Such securities are considered to have speculative characteristics similar to high yield securities, and issuers of such securities are more vulnerable to changes in economic conditions than issuers of higher grade securities.

Interest Rate Risk: Bonds and other debt securities will increase or decrease in value based on changes in interest rates. If rates increase, the investment generally declines. On the other hand, if rates fall, the value of the investments generally increases. Your investment will decline in value if the value of the investment decreases. Securities with greater interest rate sensitivity and longer maturities tend to produce higher yields, but also are subject to greater fluctuations in value. Usually, the changes in the value of fixed income securities will not affect cash income generated, but may affect the value of your investment.

Derivatives may be riskier than other types of investments because they may be more sensitive to changes in economic and market conditions than other types of investments and could result in losses that significantly exceed an original investment. Many derivatives will give rise to a form of leverage. Derivatives are also subject to the risk that changes in the value of a derivative may not correlate perfectly with the underlying asset, rate or index. The use of derivatives for hedging or risk management purposes or to increase income or gain may not be successful, resulting in losses.

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