Liability Driven Investing Strategies

A Statistical and Qualitative Review of Q3 2014 & Outlook for 2014

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Key Q3 Takeaways:

- Rates remain anchored stubbornly low despite stronger economic data.
- Negative excess returns thus far in 2014 for long corporate bonds are indicative of a slow rotation into long duration by plan sponsors.
- Funded status has deteriorated for the typical pension plan since the beginning of the year given the rate rally.
- Plan sponsors have several initiatives to mull such as the mortality assumption updates, HATFA, and partial liability settlements.
- Looking forward, our base case is for higher rates, but slowing global growth can challenge that view and push off the Fed's rate hikes.

"Let's go." "We can't." "Why not?" "We're waiting for Godot."

— Samuel Beckett, *Waiting for Godot*

Background

Samuel Becket's absurdist play Waiting for Godot, first performed on January 5th, 1953, portrays two characters, Vladimir and Estragon, waiting time and again for someone named Godot to arrive. In the first act, Estragon attempts to leave, but Vladimir insists that the two of them cannot depart prior to Godot's arrival. Such is a recurring conversation and theme throughout the play, with the two men unable to take any real action at all as Godot never comes. Even after making clear decisions to find shelter at night, the two never leave to find a suitable place to sleep at the end of each act. This paralysis seems very similar to the actions of plan sponsors with the implementation of LDI. Even after the decision is made to de-risk their investment strategies, the never-ending wait for the arrival of higher long term rates has hampered de-risking. The global rally in rates has taken most of the market by surprise given the nearing end of quantitative easing and the anticipation of rate hikes, both by the Federal Reserve (Fed). We will further discuss the frustrating wait for higher rates in December at the 2014 P&I Liability Driven Investing Conference.

Link: P&I Liability-Driven Investing Conference

The Q2 GDP figure of 4.6% gives us greater confidence in our forecast for U.S. growth of around 3.0% in the second half. We continue to believe that economic growth will moderate back toward its 2.5% trend rate in 2015, but that inflation will trend higher as a result of a tighter labor market and faster wage growth. These convictions imply a rise in rates,

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although escalating geopolitical risks and low sovereign yields in Europe and Japan may keep a lid on how far U.S. Treasury yields rise in the near term. Our Treasury fair value model, shown in Table 1, indicates that rates are far below where they should be based on fundamental factors alone. Other technical factors however are winning over in keeping rates low.

Table 1: Standish's Treasury Models vs. Current Levels

Curve Summary	3m LIBOR	2s	5s	10s	30s	2s-10s	2s-30s
Current Market	0.24	0.57	1.76	2.49	3.20	1.92	2.63
Model Fair Value		0.94	2.31	3.49	4.57	2.55	3.63
Rich/Cheap (bps)		-0.37	-0.55	-1.00	-1.38	-0.63	-1.00
St. Dev. Rich/Cheap		-1.1	-1.0	-1.6	-2.2	-1.7	-2.5

Source: Standish as of September 30, 2014. For more information on Standish's sector and fair value models, please see disclosures.

Summary of Key Market Movement over the Quarter:

- The interest rate curve see-sawed over the quarter, dipping to 2014 lows in August before selling off through mid-September and then taking another dip just before the end of the quarter. Maturities below 10 years were mixed while long bond yields declined overall through the quarter.
- Corporate bond spreads widened over the quarter. The long end of the curve underperformed the intermediate portion.
- U.S. risky assets exhibited another quarter of positive performance through the quarter with the S&P 500 returning 1.13%, while the MSCI Emerging Markets equity index returned -4.33%.
- Volatility, as indicated by the Merrill Option Volatility Estimate (MOVE) Index, increased this past quarter over escalation in world conflicts and the near onset of Fed rate increases. This measure of implied bond volatility typically tracks realized volatility which has been low. The VIX index was also higher over the period, but still remained at historically depressed levels.

Table 2: Q3 2014 Fixed Income and Equity Index Returns (%) and Risk Index Levels

Index	Q3-2014 Total Returns	YTD 2014 Total Returns	Q3-2014 Excess Returns	YTD 2014 Excess Returns
Barclays Treasury	0.34	3.06	-	-
Barclays Intermediate Treasury	0.02	1.59	-	-
Barclays Long Treasury	2.69	15.15	-	-
Barclays Corporate	-0.08	5.60	-0.74	0.68
Barclays Interm. Corporate	-0.14	3.47	-0.24	1.21
Barclays Long Corporate	0.07	11.30	-1.96	-0.74
BofA Merrill Lynch High Yield (H0A0)	-1.92	3.61	-2.10	1.25
S&P 500	1.13	8.34	-	-
MSCI Emerging Markets Equity	-4.33	0.26	-	-
VIX[1]	16	-	-	-
MOVE[1]	64	-	-	-

Source: Barclays and Bloomberg as of September 30, 2014
[1]VIX and MOVE are actual value at month end

Geopolitical risks continue to take hold across the globe. Earlier in September, Putin spokesman Dmitry Peskov claimed that Putin could not agree to a ceasefire in the Ukrainian crisis because "he is not party to the conflict". Nevertheless, NATO has said that Russia has withdrawn a "significant" number of troops from Eastern Ukraine. Scattered fighting has continued, although military de-escalation appears to be moving forward. The United States and its allies in the Middle East have engaged against ISIS through airstrikes, and the U.S. has pledged to train Syrian rebels to fight on the ground.

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We will continue to monitor these geopolitical risks for their broader implications, although these regions make up a very small portion of global GDP. As we write this review, a student-led protest has erupted in Hong Kong, although near term consequences are limited to perhaps 10-15 basis points of Hong Kong's GDP. If the situation remains unresolved through next year this drag could rise further.

Pension Fund Trends

Liabilities grew while assets shrank during the third quarter, though both such impacts were modest, resulting in funded status deterioration on the order of 200 basis points for two of the three LDI funding indices we track. The exception was the Traditional Pension Index – the index that represents a non-LDI plan. For this index, liability growth further outpaced asset growth and funded status fell by over 300 basis points during the third quarter. All three indices suggest that plans are 90%-91% funded as of September 30, 2014.

Note that these estimates do not incorporate external cash flows, which cloud efforts to assess asset/investment returns relative to liability returns. While recent pension funding relief (discussed later) generally reduced minimum required contributions, many plans did contribute to their plans (particularly during September for calendar plan years). Many plans also paid lump sums to former employees during the quarter, as well. Again, funded status improvements resulting from such external cash flows are not reflected.

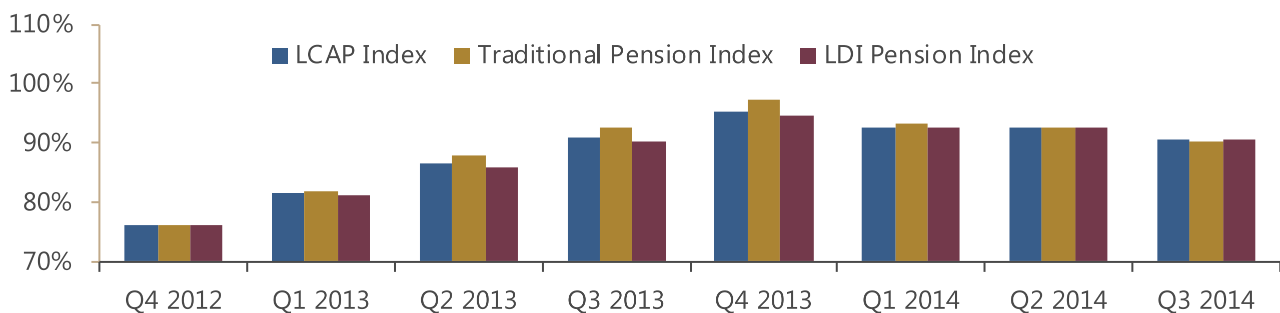
Beginning in 2014, we introduced three indices to provide some insight into the impact of rate and market movements on three types of pension plan investors:

- 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

During the third quarter the Corporate Bond AA discount rate for the typical plan remained essentially unchanged, dropping from 4.35% at June 30, 2014 to 4.34% at September 30, 2014. This 1 basis point drop masks a 15 basis point drop in interest rates offset by a 14 basis point widening of credit spreads.

Chart 1 shows the funding ratio that we have estimated for each of our pension indices.

Chart 1: Plan Funding Ratios



Source: Standish, Standard & Poor's as of September 30, 2014. For more information regarding the returns calculations for these indices, please see disclosures.

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Note that these three funding indices above begin at the same funded status as of the end of 2012. The liabilities used to determine each index are the same (i.e. the typical plan liability). The difference moving forward is the asset allocation assumed – these asset allocations are shown in Table 3 below. The differences between each of the funded statuses show the impact of the different asset allocations for the period since 12/31/2012.

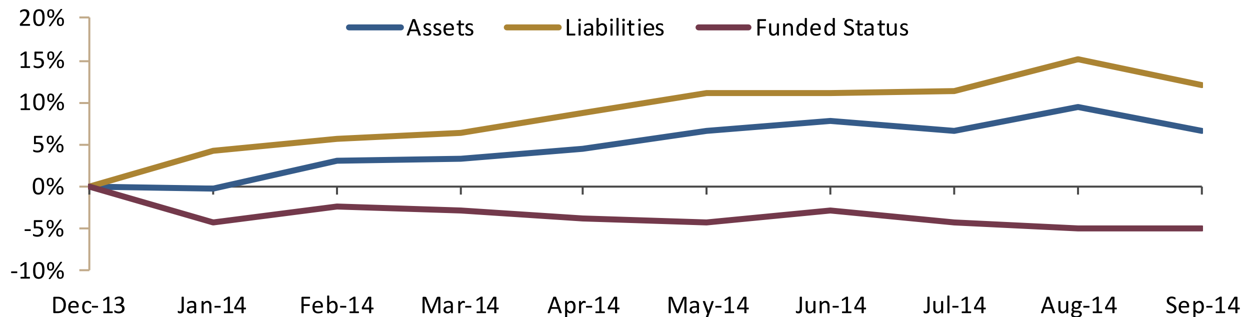
Table 3 below shows the funded ratios corresponding to Chart 1.

Table 3: Plan Funding Ratios

	LCAP Index	Traditional Pension Index	LDI Pension Index
	45% Equities 10% Core Bonds 30% Long Gov/Credit 15% Alternatives	45% Equities 40% Core Bonds (No Long Gov/Credit) 15% Alternatives	45% Equities (No Core Bonds) 40% Long Gov/Credit 15% Alternatives
Q4 2012	76.3%	76.3%	76.3%
Q1 2013	81.5%	81.9%	81.3%
Q2 2013	86.5%	88.0%	86.0%
Q3 2013	90.8%	92.7%	90.2%
Q4 2013	95.4%	97.4%	94.7%
Q1 2014	92.7%	93.4%	92.5%
Q2 2014	92.6%	92.5%	92.6%
Q3 2014	90.6%	90.3%	90.7%

Chart 2 shows the asset and liability returns (as measured by the LCAP Index) during 2014 to date. While January represents the most significant drop in funded status during the year, widening between the cumulative liability and asset returns during the third quarter results in a corresponding deterioration of funded status.

Chart 2: Simulated Cumulative Returns



Source: Standish, Russell, MSCI, Barclays as of September 30, 2014

Developing Trends in LDI Implementation and Execution

The third quarter has proven quite eventful for LDI practitioners, particularly in the defined benefit pension space. Below we discuss some of the key trends and topics we are seeing in LDI.

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Reaction to Mortality Assumption Updates: Re-Risk or De-Risk?

The Society of Actuaries is planning to respond by the end of October to comments (i.e., pushback) regarding the proposed pension mortality and projection table updates (RP-2014 and MP-2014). While details are still in flux, and precise impact and timing will vary by plan sponsor (and potentially plan auditor), the change will undoubtedly increase pension plan liabilities and durations.

The prospect of higher plan liabilities (and therefore lower funded statuses) has prompted calls for sponsors to re-risk plan investments, either in accordance with their glidepaths or more generally in an effort to boost expected returns. However, longer plan liability durations naturally suggest that plans should be increasing asset durations, a move typically associated with de-risking. Alternatively, use of duration leverage or derivatives could allow plans to effectively re-risk with respect to equity exposure while also adding the duration necessary to maintain desired hedge ratios.

Standish recommends that in light of the pending mortality changes, sponsors should review their strategic asset allocations, benchmarks (particularly with respect to duration), contribution policies, and glidepaths to ensure optimality based on all available information. Sponsors should avoid mechanistically implementing glidepaths or other decisions made prior to any knowledge of mortality assumption updates, pension funding relief, or other such developments.

Extension of Pension Funding Relief (HATFA)

The Highway and Transportation Funding Act of 2014 (HATFA), which was signed into law on August 8, essentially extends MAP-21 pension funding relief by five years. This relief reduces minimum required contributions, assuming certain conditions. The maximum relief allowed will remain in place through plan years beginning in 2017 (extended from 2012), and the relief will not taper to its minimum level until plan years beginning in 2021 (extended from 2016).

In addition to reducing contribution requirements, HATFA reduces the extent to which these contribution requirements are determined based on mark-to-market principles. This will serve to decrease the role that contribution planning serves in sponsors' decisions on whether to accelerate or delay steps toward LDI-based de-risking.

Partial Liability Settlements Complement LDI in Pension De-Risking Efforts

This year has seen heightened interest in and implementation of voluntary lump sum windows for former employees who have not yet started their pension payments. Partial annuity buyouts, in which some amount of pension assets and liabilities are transferred to an insurer, have been somewhat slower in materializing, even in the wake of a couple of large buyouts from 2012 (at General Motors and Verizon). However, Motorola Solutions Inc. made headlines this September for conducting a $3 billion annuity buyout covering about 30,000 of its retirees. In having borrowed $1 billion to implement their pension strategy, Motorola also shows that the approach of borrowing to fund pensions is a viable option in this historically low rate environment.

Many sponsors are taking such steps as part of a broader multi-prong de-risking effort, in which LDI plays an important role. Plans which pursue such strategies should recognize the potential impacts on the profiles of their liabilities, and should consider adapting investment approaches accordingly. For example, a partial annuity buyout focused on retirees removes the shortest duration chunk of the plan, extending the duration of the remaining plan, typically requiring a change in hedging benchmark to maintain existing risk exposures.

Steps toward Mark-to-Market (GASB 67/68) Lay Groundwork for Potential Adoption of LDI by Public Plans

Under newly effective reporting rules GASB 67/68 for state and local government pensions, public plan accounting takes two important steps closer to corporate plan accounting. Firstly, new required methods for measuring plan liabilities require the use of a lower effective discount rate (for plans that are less than fully funded). Secondly, the resulting (and newly less favorable) net pension liability must now be more directly recognized in financial statements.

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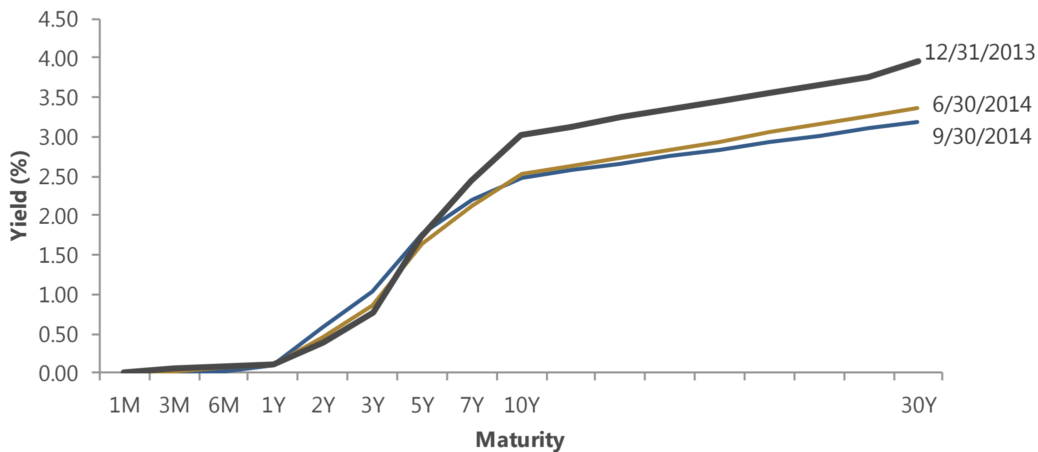
The GASB pension accounting standards still vary considerably from FASB equivalents applicable to U.S. corporate pension plans. However, this may mark the start of a shift toward the same mark-to-market principles that have helped fuel demand for long duration bonds by corporate plan sponsors.

The Economy and Interest Rates

The U.S. economy generated 248,000 jobs in September and the data for the prior two months was revised higher by a total of 69,000 jobs, alleviating concerns about the temporary slowdown in employment growth in August. Nonfarm payrolls have averaged 227,000 per month in 2014, which is the best performance since 1999. At the same time, the unemployment rate declined by two-tenths of a percent to 5.9%, which marks a new cyclical low for the series and brings us to the lower end of the Federal Reserve's 2014 forecast range. In fact, we aren't far from the Fed's longer-term projection for an unemployment rate between 5.2% and 5.5%, which they would characterize as full employment. Therefore, we continue to believe that liftoff for the federal funds rate will occur in mid-2015.

After rates declined to annual lows in August, they began a fairly steady upward trend leading up to the Federal Open Market Committee (FOMC) meeting in mid-September. Two possible drivers of the rate movements were continued improvement in U.S. growth data and expectations of rate hikes starting sometime next year. The latter thought began entering the spotlight when many observers postulated that the FOMC may remove the "considerable period" language in regards to how long the Fed plans to keep short term rates near zero. While these two important words did not leave the Fed statement, the upward trend of the "Fed dots" indicated a modest increase in future short term rates expectations compared to those in the prior meeting. Market reactions were relatively calm, potentially smoothed over by Yellen's otherwise dovish tone. Rates increased on the day, but certainly nothing similar to last year's taper tantrum spectacle and its resulting volatility that the Fed is likely trying to avoid. Rates decreased right at the end of the quarter due to troubling news abroad, erasing earlier September movements.

Chart 3: Treasury Yield Curve Change



Source: Bloomberg as of September 30, 2014

As mentioned prior, the revised figures for second quarter real GDP show that the U.S. economy expanded at an annual rate of 4.6% compared to the 4.0% initial estimation. More importantly, the composition of growth improved with real final sales – a measure of U.S. demand for domestically produced goods and services – revised higher to an annual rate of 2.8% from 2.3% initially. Much of the upward revision was the result of stronger business investment and exports. Indeed, investment in equipment rose at an annual rate of 11.2% in the second quarter and the latest new orders data suggests that much of this momentum was maintained into the third quarter. Leading indicators suggest that this strength probably continued into the third quarter. The new orders component of the ISM Manufacturing Index rose to

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a 10-year high of 66.7 in August. Historically, this series has led growth in business investment by three to six months. Both quarterly GDP and nonfarm payrolls jobs added are shown in Table 4 below. Nonfarm payrolls represents the sum of jobs added for each quarter.

Table 4: Key Economic Data

	U.S. Quarterly GDP (%)	Nonfarm Payrolls (000's)
1Q 2013	2.7%	618
2Q 2013	1.8%	603
3Q 2013	4.5%	515
4Q 2013	3.5%	595
1Q 2014	-2.1%	569
2Q 2014	4.6%	800
3Q 2014	3.0%*	671

*Bloomberg Economic Forecast Estimate

Looking abroad, the prospect of a newly independent Scotland "Yes" vote outcome gave some uncertainty and volatility in the markets. The Royal Bank of Scotland even stated that it would move its headquarters to London if Scotland broke away from the United Kingdom (UK). The campaign did, however, fail in a vote of 45-55, although the UK prime minister said that more power would be granted to Scotland.

Despite concerns from headlines, the greatest impact of heightened geopolitical risks stemming from Russia/Ukraine, Iraq, and Israel is a flight-to-safety effect on U.S. Treasury rates. Russia, Ukraine, and Iraq combined only make up 5% of world GDP, and there may only be some upward pressures on oil and gas prices if current conflicts drag on for an extended period of time. Euro area growth is slowing based on PMI and economic sentiment, and the European Central Bank has left the door open to some form of quantitative easing (QE) after cutting rates. In Asia, we have downgraded our Japan forecast for 2014 due to poor Q2 GDP. China's economy appears to be slowing from a decrease in steel & auto production and real estate, although other small emerging market economies in the region look to pick up growth in 2015, driven by Indonesia and Thailand in particular. In Latin America, Colombia and Mexico have shown positive signs while Brazil growth has been decelerating. October elections will be particularly important within Brazil.

Table 5: Standish and IMF GDP and CPI Expectations

July 2014	**Standish**				**IMF (July Update)**				**Variance (Standish - IMF)**			
	Real GDP		**CPI**		**Real GDP**		**CPI**		**Real GDP**		**CPI**	
Survey	2014^F	2015^F	2014^F	2015^F	2014^F	2015^F	2014^F	2015^F	2014^F	2015^F	2014^F	2015^F
United States	1.9	2.5	2.0	2.5	0.0	0.0	0.0	0.3	1.9	2.5	2.0	2.2
Japan	1.1	1.5	2.2	1.6	-0.2	0.6	0.1	0.2	1.3	0.9	2.1	1.4
United Kingdom	2.9	2.5	1.9	2.2	0.0	0.0	-0.1	0.0	2.9	2.5	2.0	2.2
Euro-zone	0.8	1.3	0.7	0.8	-0.2	0.0	0.0	0.0	1.0	1.3	0.7	0.8
Developing Asia	6.5	6.6	4.4	4.1	0.0	0.0	0.0	0.0	6.5	6.6	4.4	4.1
CIS	0.3	1.6	7.1	6.1	0.0	0.0	0.6	0.1	0.3	1.6	6.5	6.0
Latin America	1.8	2.7	6.4	5.7	0.0	0.0	0.0	0.0	1.8	2.7	6.4	5.7
Global	**3.2**	**3.6**	**3.7**	**3.5**	**0.0**	**0.0**	**0.0**	**0.1**	3.2	3.6	3.7	3.5

Source: Standish and the International Monetary Fund as of August 2014

Corporate Bond Market Technicals

Issuers appeared to take a breather in the summer with July/August supply coming in nearly 40% lower than the amount from the same two months last year. September brought the primary market back on its feet however, with impressive supply putting 2014 in contention for another year of record annual issuance. There were no mega deals like that of Verizon last year, but high supply in September has placed upward pressure on spreads, particularly for financial companies, which have provided 36% of issuance YTD compared to 25% for 2013. Long term corporate bond issuance continues to be at average levels, with 13+ year maturities accounting for 17% of YTD issuance, at par with 2013 annual percentage levels. The demand for long corporate bonds does not necessarily translate to above average supply as CFOs need to weigh the higher costs that steep curves present. Table 6 summarizes annual supply levels for both investment grade and high yield.

Table 6: New U.S. Bond Issuance in $Billions

Market	Q3-2013	Q3-2014	YTD 2014	Q3 YTD 2014 Yr/Yr Change (%)
U.S. Investment Grade	315	234	892	-0.9%
U.S. High Yield	80	68	242	-6.8%

Source: Standish and Barclays as of September 30, 2014

Corporate Bond Market Performance

As shown in Table 7, corporate spreads widened over the quarter, particularly in the long end. Interestingly, YTD spread movements have been overall positive for intermediate maturities and negative for longer ones. The steepness in spreads between long and shorter maturities has increased over the past several quarters.

Table 7: Average Spread (bps) of Corporate Bonds in 2013 & 2014

Barclays Index	9/30/2013	12/31/2013	3/31/2014	6/30/2014	9/30/2014	Weighting
Corporate	141	114	106	99	112	100.00%
Intermediate	125	99	89	81	91	70.92%
Long	187	152	150	146	163	29.08%
10+ vs. 7-10yrs	26	24	33	39	42	-

Source: Barclays as of September 30, 2014

Similarly, Table 8 depicts how spreads have changed for long corporate bonds, split into their credit quality segments. Lower rated segments displayed more widening over the quarter although BBB credits have still driven the majority of spread tightening on a year-over-year (YoY) basis.

Table 8: Average Spread (bps) of Long Corporate Bonds in 2013 & 2014

Barclays Index	9/30/2013	6/30/2014	9/30/2014	Q3-2014 Change	1 Year Change
Total	187	146	163	17	-24
AAA	103	90	97	7	-6
AA	123	106	117	11	-6
A	151	124	139	15	-12
BBB	231	174	193	19	-38

Source: Barclays as of September 30, 2014

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Table 9 provides statistics for the Barclays Credit Index including changes in option adjusted spreads (OAS) and excess returns (ER) for Q3 2014:

Table 9: Changes in OAS & Excess Return

	MV%	OAS	Q3 OAS Δ bp	YTD Δ bp	Q3 % ER	YTD % ER
US CREDIT	100.00	96	0	-15	-0.67	1.60
Non-Corporate	21.13	81	0	-19	-0.42	2.13
Supranationals	5.46	11	0	-7	-0.03	0.39
Sovereigns	5.17	138	0	-33	-0.90	3.69
Foreign Agency	6.02	78	0	-7	-0.30	1.50
Local Govt	4.48	105	0	-28	-0.53	3.39
Corporate	78.87	99	0	-14	-0.74	1.45
Industrial	47.13	102	0	-12	-0.90	1.53
Basics	4.32	130	0	-24	-1.18	2.44
Capital Goods	3.76	83	0	-11	-0.50	1.04
Communications	8.57	120	0	-26	-0.91	2.99
Consumer Cyclical	4.90	90	0	-12	-0.67	1.08
Consumer Non-Cyclical	10.82	90	0	-4	-0.72	0.60
Energy	8.59	108	0	-4	-1.73	1.69
Technology	4.28	83	0	-17	-0.14	1.24
Transportation	1.63	103	0	-20	-0.82	1.68
Utility	6.06	98	0	-27	-0.69	1.49
Electric	5.63	97	0	-13	-0.70	1.13
Natural Gas	0.34	97	0	-53	-0.60	2.11
Financial Institutions	25.68	96	0	-13	-0.45	1.29
Banking	16.86	88	0	-11	-0.47	1.00
Brokerage	0.72	113	0	-32	-0.06	2.44
Finance Comp.	1.97	92	0	-5	-0.37	0.88
Insurance	4.14	116	0	-16	-0.61	1.94
REITs	1.94	114	0	-31	-0.15	2.57

Source: Barclays as of September 30, 2014

Non-Corporates have outperformed corporates over the quarter and YTD. However, while most areas in U.S. Credit have provided positive excess returns over Treasuries YTD, not one segment exhibited positive excess returns over the quarter. Energy, Basics, and Communications sectors were the most significant culprits in terms of negative excess returns for the quarter. REITs, Brokerage, and Communications have been particularly strong on a YTD basis, while Consumer Non-Cyclicals, and Electric have lagged the index.

Corporate Bond Fundamentals

Fundamentals remain strong in the U.S. as the economic recovery has accelerated since Q1 2014. Q2 2014 earnings, as measured by the S&P 500 Index, exceeded expectations with 75% of companies beating analyst estimates. Revenue growth in Q2 was 4.4% YoY which exceeded the prior quarter's 3.0% growth rate, while earnings growth was 11.7% YoY.[1] Profit margins remain strong and are close to a decade high. Meanwhile, capital expenditures have grown less than 1.0% YoY. The lower capital expenditures (capex) growth rate is due to a slowdown in metals and mining capex, which declined 34% YoY in Q2 given the completion of several large projects. Companies continue to increase the allocation of cash to shareholder dividends and buybacks. Total dividends and buybacks are running approximately 29% ahead of the prior year based on last-twelve-months figures.[2] S&P 500 companies are spending approximately 95% of profits on dividends and buybacks which is at the high end of the historical range for a non-recessionary period.[1]

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Gross debt on company balance sheets has increased 7.6% YoY. Gross leverage was flat sequentially at 2.3x. Given the record level of cash on company balance sheets at $1 trillion, net leverage was flat sequentially at 1.7x.[2] Gross and net leverage are at post financial crisis highs.

Following the mass number of foreign acquisitions overseas in the pursuit of tax inversions, the pharmaceutical space was relatively active in M&A in the U.S. with several potential major takeovers having been discussed in the summer. This action comes on the heels of new laws implemented by the U.S. Treasury to curb the tax inversion deals that many U.S. companies had been using to shift their tax base overseas.

The outlook for future U.S. earnings remains positive, as can be seen in Table 10. The expectation for consensus earnings for the S&P 500 for 2014 is $118.94, and this figure has moderated by 0.4% over the last three months, while the outlook for 2015 earnings is $136.12, which has decreased 1.0% sequentially. This earnings growth should bode well for credit quality if it materializes. If it does not, and companies continue to spend on dividends & stock buybacks at the current rate, this trend may become a concern. The stock market continued to rise in Q3, driving valuations higher with the forward P/E at 16.6x, as per Table 11. This number has become increasingly reliant on accelerating earnings growth.[1]

Table 10: S&P Earnings Estimates

	Value	Yr/Yr Change
2015 Estimate	136.12	14.4%
2014 Estimate	118.94	7.6%
2013	110.52	6.5%
2012	103.81	7.6%
2011	96.44	15.1%
2010	83.77	47.3%
2009	56.86	14.8%
2008	49.51	-40.0%
2007	82.54	-5.9%

Source: Standard & Poors as of September 30, 2014

Table 11: S&P P/E Ratio Estimates

	P/E Ratio
2015 Estimate	14.5x
9/30/2014	16.6x
2013	16.7x
2012	13.7x
2011	13.0x
2010	15.0x
2009	19.6x
2008	18.2x
2007	17.8x

Source: Standard & Poors as of September 30, 2014

Improving fundamentals and low interest rates have led to an increase in announced Global M&A, which at $2.5 trillion is 41% higher YoY, led by the U.S. which is 62% higher YoY at $1.2 trillion.[3] We expect this M&A trend to continue and to result in large corporate bond issues in the coming months.

Summary & Outlook

The U.S. stands as an oasis in the global desert of growth. It is unclear whether this divergence can persist. As a result of stronger economic data in the U.S. the Fed is ending QE and moving presumably closer to raising rates. The European Central Bank (ECB) and Bank of Japan (BoJ) on the other hand will continue to fight the threat of deflation with their own QE programs. Longer-dated Treasuries are reacting to the slow growth outside the U.S. which has driven yields such as the German 10-year Bund below 1%. Relatively speaking even at these low yields, U.S. Treasuries look attractive to global investors. The lack of inflation, perhaps more apparent in the Eurozone, has also remained persistently low in the United States.

As has been the case for months now, fixed income investors among others have been carefully analyzing every word the Fed speaks, every "dot" in their rate targets, and any change in every minute phrase in their meeting minutes that may indicate that timing of Fed hikes has switched from "later" to "soon". It is possible, however, given external forces such as geopolitical conflicts, recession concerns in Europe, and low sovereign yields across the globe that U.S. long

term rates remain low for a considerable time. The eventual rise in rates seems plausible, but we are giving focus to a number of important market factors to consider.

- We expect that U.S. employment data will continue to improve albeit with moderate GDP growth in the near future. We expect this growth will be sustained despite drags in Europe.
- Our base case is that the Fed will begin to raise rates by mid-year 2015 as supported by stronger economic data. Any spillover from anemic global growth into the U.S. could challenge this timing.
- QE has artificially boosted all markets. That wave is now reaching Europe where spreads have performed well in the periphery and across corporate markets including high yield. As the Fed abandons QE, the lack of support will drive volatility higher impacting spreads and other risky assets.
- Inflation may challenge the Fed's impetus to raise rates sooner than later. A drop in commodity prices, particularly oil, can cycle back into the U.S. as lower inflation.
- Absent higher rates, we expect de-risking by pension funds to continue but at a gradual pace. Steeper curves for corporate bonds and demand not yet materializing suggest that long corporate strategies are attractive particularly if some of the interest rate risk is shed.

Risks to our outlook include but are not limited to the following:

- A sustained rise in volatility from depressed levels leading to a disruptive adjustment in financial markets that shocks risky assets including spread products.
- Escalation of geopolitical issues abroad.
- The impact of Ebola caused by the virus itself or fears around its contagion.
- Global growth weakness, such as in the euro-zone, dragging down U.S. growth.

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[1]Data sourced from Standard & Poor's

[2]Data sourced from J.P. Morgan research.

[3]Data sourced from Bloomberg.

The Standish Large Company Aggregate Pension (LCAP) Index, Traditional Pension Index and LDI pension Index each use the same assumed plan liabilities that are calculated using the present values of a hypothetical typical pension benefit cash flow schedule, with a duration of around 12.5 years. These cash flows are discounted according to a fitted curve of yields on AA corporate bonds and U.S. Treasury securities as of the end of each month. Liability returns are the percentage monthly changes in the present values of the liabilities and returns for longer periods are geometrically linked monthly returns.

The asset values and returns of each of the three indices in Chart 1 are calculated for a hypothetical portfolio with an asset allocation as follows:

	LCAP	Trad.	LDI	Index
Return Seeking Assets	60%	60%	60%	
Equities	46%	46%	46%	
US Equity	30%	30%	30%	Russell 3000 Index
International Equity	16%	16%	16%	MSCI EAFE USD
Alternatives	14%	14%	14%	
Private Equity	4%	4%	4%	S&P Listed Private Equity Index
REITs	3%	3%	3%	FTSE NAREIT Equity
Hedge Funds	5%	5%	5%	HFRI Fund Weighted Composite
Commodities	2%	2%	2%	Dow Jones-UBS Commodity Index
Hedging Assets	40%	40%	40%	
Core Fixed Income	10%	40%	0%	Barclays US Aggregate Index
Long Duration Fixed Income	30%	0%	40%	Barclays Long Gov/Credit Index

Barclays US Aggregate Bond Index is a broad bond index covering most U.S. traded bonds and some foreign bonds traded in the U.S.

Barclays Intermediate U.S. Corporate Index is a subset of the broader Barclays US Intermediate Credit Index and is representative of publicly issued, investment-grade, fixed rate, dollar-denominated, non-convertible, US corporate debt securities that have at least $250 million par amount outstanding and an average maturity between 1 and 10 years

Barclays Intermediate U.S. Treasury Index includes all publicly issued, U.S. Treasury securities that have a remaining maturity of greater than or equal to 1 year and less than 10 years, are rated investment grade, and have $250 million or more of outstanding face value.

Barclays Long Government/Credit Index measures the investment return of all medium and larger public issues of the U.S. Treasury, agency, investment-grade corporate and investment grade international dollar-denominated bonds with maturities longer than 10 years. The average maturity is approximately 20 years. Barclays Long U.S. Treasury Index includes all publicly issued, U.S. 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.

Barclay's U.S. Corporate Index, which is a subset of the broader Barclay's U.S. Credit Index, is representative of publicly issued, investment-grade, fixed rate, dollar-denominated, non-convertible, U.S. corporate debt securities that have at least $250 million par amount outstanding and an average maturity of 0 to 30 years. To qualify, bonds must be registered with the U.S. Securities and Exchange Commission (SEC).

Barclays U.S. Long Corporate Index, which is a subset of the broader Barclays U.S. Long Credit Index, is representative of publicly issued, investment-grade, fixed rate, dollar-denominated, non-convertible, U.S. corporate debt securities that have at least $250 million par amount outstanding and an average maturity greater than 10 years. To qualify, bonds must be registered with the U.S. Securities and Exchange Commission (SEC).

Barclays U.S. Treasury Index is an unmanaged index of public obligations of the U.S. Treasury.

Dow Jones-UBS Commodity Index is a broadly diversified index that allows investors to track commodity futures through a single, simple measure. The index is comprised of a basket of commonly traded commodity futures contracts.

FTSE NAREIT Equity is a free-float adjusted, market capitalization-weighted index of U.S. Equity REITs. Constituents of the Index include all tax-qualified REITs with more than 50 percent of total assets in qualifying real estate assets other than mortgages secured by real property.

HFRI Fund Weighted Composite is an equally weighted performance index (weighted by fund), All single-manager HFRI Index constituents are included in the HFRI Fund Weighted Composite, which accounts for over 2200 funds listed on the internal HFR Database. Funds are eligible for inclusion if they have more than $50M in assets or a 12 month track record.

MOVE the Merrill Option Volatility Expectations Index is designed to reflect a market estimate of future Treasury bond yield volatility. The MOVE index is a yield curve weighted index of the normalized implied volatility on 1-month Treasury options. The MOVE Index reports the average implied volatility across a wide range of outstanding options on the two-year, five-year, 10-year, and 30-year U.S. Treasury securities (with a total weight of 40 percent on the 10-year Treasury and total weights of 20 percent each on the other maturities). Note that the options underlying the MOVE Index have expiration dates of approximately one month.

MSCI EAFE index is widely accepted as a benchmark for international stock performance (excluding the United States and Canada), and measures the performance of the developed stock markets of Europe, Australia, and the Far East (EAFE).

Russell 3000 Index is an unmanaged capitalization-weighted index that is broadly representative of U.S. equity market

S&P 500 Index is considered to be generally representative of the U.S. large capitalization stock market as a whole. It is an unmanaged capitalization-weighted index of 500 commonly traded stocks designed to measure performance of the broad domestic economy through changes in the aggregate market value of those stocks. The index assumes reinvestment of dividends.

S&P Listed Private Equity Index comprises the leading listed private equity companies that meet specific size, liquidity, exposure and activity requirements. The index is designed to provide tradable exposure to the leading publicly-listed companies that are active in the private equity space.

VIX is the Chicago Board Options Exchange (CBOE) Volatility Index, a widely used measure of market risk, which shows the market's expectation of 30-day volatility.

Standish sector and fair value models use regression analysis such as multi-linear data inputs, panel data, and probit function. Variables that the models take into account are: PMI, U.S. Core CPI, Fed Fund rate, 3-month Libor, 3-month T-bill rate, foreign purchases of U.S. Government bonds, Commodity Indices , Capacity Utilization, Deficit as a percent of GDP, S&P 500 return, Chicago Fed Index, IGOV, U.S. output gap, Europe Core CPI, U.S. unemployment rate, EU unemployment rate, and slope of the yield curve. Assumptions made are that samples are representative of the population for the inference prediction; regression residuals are approximately normally distributed, uncorrelated, and have constant volatility; no high degrees of multi-collinearity in the independent variables; variable sensitivity remains constant in the short term; and no structural shift in the short term.

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