Cost of Capital 2016: Credit Risk Outweighs Interest Rate Risk

John Lonski, MD-Chief Capital Mkt Economist, Capital Markets Research Group

April 2016
2016 Will Show the Slowest 10-year Average Annual Growth Rate for Real GDP Since the Span-ended 1939
Since Year-end 1999, Average Annual Growth Rates Are 5.8% for Emerging Market Economies and 1.8% for Advanced Economies: IMF & consensus estimates in %, actual & predicted
Projections of 3% Rise by 2016's World Output Seems Too High Unless Industrial Metals Prices Firm (correlation since 1989 = 0.81): annual % changes
Industrial Metals Price Index Now Signals at Least a Stabilization of Global Economic Activity

Crude Oil Price: WTI, $/bbl (L)  Industrial Metals Price Index: (R)
Recent Dollar Exchange Rate Index Dips Year-to-Year, but Tops 2011-2013 Average by 22%
Exports Try to Stabilize as Composite Index of US Export Orders Edges Higher
Profound Shift in Age Distribution of US Population May Influence Financial Markets for Years to Come: actual & predicted annual change in millions of people; sources: US Bureau of the Census, Moody's Analytics

![Graph showing the age distribution of the US population from 1966 to 2026.](image)
Startling Numbers Regarding the Age Distribution of US Employment Growth:

- March 2016’s **8.1% cumulative increase** by “household survey” employment since June 2009’s end to the Great Recession was unevenly divided between …

- A meager **3.7% rise** for the employment of those **younger than 55 years** and a …

- **26.1% advance** for the employment of those aged **55 years and older**.

- The skewing of employment growth toward older Americans has probably curbed the growth of income and spending.
Age Distribution of Employment Goes From Being Inflation-Prone in the 1970s to Disinflationary Today:

*age cohort as % of household survey employment*
Consumers Splurge on Savings as Retail Sales Lag

Wage & Salary Income:

$yy \%$ change of moving yearlong observations

Recessions are shaded

Retail Sales

Wage & Salary Income
Both Consumers' Income Expectations and Wage & Salary Income Growth Lag Recent Recoveries:

*moving yearlong averages*

Net % of Consumers Expecting Income Growth Over the Next Six Months (L)

Wage & Salary Income: YoY % change (R)
Consumer Spending Shows Limited Response to Household Net Worth's Fading Upturn:

yy % changes of moving yearlong averages

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Moody's Analytics

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Market Value of Housing Approaches 282% of Wage & Salary Income, Topping All Ratios Prior to Q2-2002 ... Home Sales Did Not Return to 1978's Pace Until 1998: yearlong observations

Moody's Analytics

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Subpar Recovery by Employment … Payrolls Have Yet to Reach 104% of Previous Cycle Peak

Recessions are shaded
Jobs as % of Peak of Previous Cycle

Dec-82 Dec-85 Dec-88 Dec-91 Dec-94 Dec-97 Dec-00 Dec-03 Dec-06 Dec-09 Dec-12 Dec-15
Recession Risk Swells When the Unemployment Rate's Moving 3-month Average Rises Amid a Mature Economic Recovery
According to the Ratio of Payrolls to the Working-Age Population, Labor-Force Dropouts Have Skewed the Unemployment Rate Lower by Two Percentage Points: *moving 3-month averages*
Muted Response by Wage Growth to Deep Drop by Unemployment Rate Implies 4.9% Unemployment Rate Now Overstates Job Market Tightening: moving 3-month averages

![Chart showing average hourly wage and unemployment rate changes from June 1984 to June 2016.](chart)

- **Average Hourly Wage:** year-over-year % change (L)
- **Unemployment Rate:** % (R)

Moody's Analytics
Last Two Declines by Unemployment Rate to 4.9% Were Join by a 352 bp Average for the High-Yield Bond Spread: moving 3-month averages
2016’s Profits Risk Shrinking for a Second Straight Year
Yearly Increase of Business Revenues Excluding Energy Barely Improves from Q4-2015's 1.5% to Q1-2016's Prospective 1.9%:

yy % changes for yearlong sum of estimated business sales with & without energy products

Recessions are shaded

Estimated Business Revenues
Core Business Revenues: ex energy
Sluggish Core Business Revenues Curb New Orders for Nondefense Capital Goods ex Aircraft:

yy % changes of moving 12-month averages whose correlation = 0.91
Private-Sector Payrolls Now Outrun Core Business Revenues: $\%$ changes whose correlation $= 0.89$
Since 1947, Recessions Occurred Whenever Gross Value Added (or Net Revenues) Lagged Unit Labor Costs over a Yearlong Span: \( \text{yy} \% \) changes for yearlong averages
S&P 500 Sales and Operating Income With and Without Financials & Energy Companies … Note Weak Q1-2016-to-date Results for S&P 500’s Non-Energy Companies:

<table>
<thead>
<tr>
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<th>Q1-2016</th>
<th>Yearlong 2015</th>
<th>Yearlong 2014</th>
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<tr>
<td></td>
<td>Sales</td>
<td>Operating Profits</td>
<td>Sales</td>
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<td>Total</td>
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<td>Excluding Financials</td>
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<tr>
<td>Excluding Energy Companies</td>
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Extended Sell-off of Equities Requires a Prolonged Contraction by Profits ...

... Ratio of Market Value of Equity to Profits: Recent 10.7:1 Trails 1998-1999's Average of 13.5:1, but Tops 2015's 10.5:1 and 2007's 9.5:1

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Moody's ANALYTICS

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US Equities are Not Cheap and Could Get Pricier ... Higher Interest Rates Slashed the Ratio from 1971's 10.3:1 to 1978's 3.7:1
Recent Drop by Average Long-term Baa Industrial Bond Yield from Q1-2016's 5.31% to 4.85% Lends Support to Above-Trend Ratio of Market Value of Common Stock to Profits
M&A Tends to Soar When Profits Slow ... M&A Previously Peaked In 2007 and 2000: *moving yearlong sums in $ billions*
Rising Default Rate May Limit the Upside for Fully-Priced Equities

US High-Yield Default Rate: %, act & proj (R).

Moody’s Analytics

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Corporate Credit Is Past Its Prime
High-Yield Default Rate Is Likely to Approach 6.0% by Late 2016
Recessions Either Coincided With or Followed Three of the Previous Four Climbs by the US' High-Yield Default Rate to 6%
Strong Correlation of 0.93 Between High-Yield and Long-term Baa Corporate Bond Yield Spreads ... Consensus View on Baa Spread Implies a 750 bp Average for High-Yield Spread Through March 2017: actual & projected in bp
Consensus Expects a Rise by the Baa Corporate Bond Yield from 2015's 2.13% to 2016's 2.38% ... Implicitly Predicts a Widening by the Baa Corporate Bond Yield Spread from 2015's 216 bp to 2016's 247 bp: yearlong averages

<table>
<thead>
<tr>
<th>Lowest 10 Forecasts</th>
<th>Long-term Baa Corporate Bond Yield: %</th>
<th>Highest 10 Forecasts</th>
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Blue Chip Financial Forecasts as of late March 2016:

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Source for forecasts: Blue Chip Financial Forecasts, April 1, 2016
Long-Term Baa Industrial Bond Yield Spread's Moving Four-Year Average of Current Upturn Never Approached Lows of the Prior Two Business Cycle Upturns
High-Yield Bond Spread's Moving 4-year Average: Current Recovery’s 497 bp Bottom Tops Previous Bottoms of 356 bp from October 2007 and 357 bp from June 1998
High-Yield Downgrade Ratio Turns Higher Both With and Without Oil & Gas Related Revisions ... Both Ratios Are In Late-Cycle Mode

Recessions are shaded

Downgrades as % of US High-Yield Rating Changes: moving yearlong ratio

Downgrades as % of US High-Yield Rating Changes ex Oil & Gas after Q3-2014: moving yearlong ratio
Benchmark Borrowing Costs: New Multi-Decade Lows for Treasury Bond Yields after Next Recession
### Blue Chip Consensus Cuts Forecast of Yearlong 2016's Average 10-year Treasury Yield from the 3.2% of April 2015 to the 2.1% of April 2016

<table>
<thead>
<tr>
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<th>Lowest 10 Forecasts</th>
<th>10-year Treasury Yield: %</th>
<th>Highest 10 Forecasts</th>
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</table>

*Source for forecasts: Blue Chip Economic Indicators, April 10, 2016*
Fed Policy Seems Unlikely to Risk an Inverted Yield Curve... 10-year Treasury Yield Was 2.30% at Time of December 2015 Rate Hike
Narrowing Premium of 10-year Treasury Yield Over Core PCE Price Index Inflation Reflects (i) Declining Return from Real Assets and (ii) Expected Long-Term Containment of Inflation Risks
10-year Treasury Yield Shows an Inverse Correlation of -0.83 with Percent of Employment Aged 55-years and Older ... Approaches 10-Year Treasury Yield’s +0.90 Correlation with Fed Funds
Ten-year Government Bond Yields:
Recent US Treasury Yield of 1.92% Tops Japan's -0.11%, Germany's 0.29%, Canada's 1.56%, and the UK's 1.65%
Lackluster Showing by Index of Pending Home Sales Implies Limited Upside for Treasury Bond Yields
Blue Chip Consensus Expects Averages for Next 10 Years of 4.2% for Nominal GDP and 3.7% for 10-year Treasury Yield: 10-year observations, actual & predicted
Blue Chip Consensus Puts Averages Over the Next 10 Years At 3.7% for both Profits Growth and 10-year Treasury Yield:

10-year observations, actual & predicted

10-year Treasury Yield: moving 10-yr avg
Pretax Profits from Current Production: 10-year average annualized % change
Consensus Outlooks for Profits and GDP Assume Ratio of Profits to GDP Will Top 9.2% Average of 25-years-ended 2010 Indefinitely: *Blue Chip consensus projections*
In Summary …
Blue Chip Consensus Forecasts for 2016 through 2022 Move to New Lows: average annual projections for 2016-2022

<table>
<thead>
<tr>
<th>Date of Forecast</th>
<th>Real GDP Growth</th>
<th>GDP Price Index Inflation</th>
<th>Nominal GDP Growth</th>
<th>Profits from Current Production Growth</th>
<th>10-year Treasury Yield</th>
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</tbody>
</table>

percentage point difference from March 2011 to March 2016:

|                  | -0.4           | -0.1                      | -0.6               | -2.1                                   | -2.0                  |