The Word on Wall Street

The Good, the Bad, and the Seriously Ugly

February 2016
Paul B. Queally  
Co-President  
Welsh, Carson, Anderson & Stowe

Mr. Queally is co-president of Welsh, Carson, Anderson & Stowe (WCAS) and a member of the Management Committee, having joined WCAS in 1996. He focuses on investments in the healthcare industry. Prior to joining WCAS, Mr. Queally was a general partner at The Sprout Group, Donaldson, Lufkin & Jenrette's private equity group. Mr. Queally received a B.A. degree from the University of Richmond in 1986 and an M.B.A. from Columbia Business School in 1990. Mr. Queally is a member of the University of Richmond Board of Trustees.
Mr. Blandford serves as president and chief investment officer and has been with Spider Management since 1999. Prior to 2012, Mr. Blandford served as the director of investments, working on all aspects of asset allocation, manager selection, and team development. Before joining Spider Management, he held senior portfolio positions with Lowe, Brokenbrough & Co. and Virginia Retirement System. Mr. Blandford holds a Bachelor of Science in Business from the University of Richmond, an M.B.A. from Virginia Commonwealth University, and is a Chartered Financial Analyst. He is also a past President of The Richmond Society of Financial Analysts.
Mr. Boggs is chairman of Property Investment Advisors Inc. (PIA), a company he founded in 1993 to provide real estate investment management services to endowment funds, foundations, and high net worth individuals. Prior to founding PIA, Mr. Boggs was a partner in Laveer Properties, a developer of office and light industrial properties in the Richmond area. He graduated from Old Dominion University in 1968 with a degree in economics. He received an M.B.A. from the University of Richmond’s E. Claiborne Robins School of Business in 1978. Mr. Boggs is a member of the University of Richmond Board of Trustees.
Joseph P. Jangro  
Principal and Senior Partner  
Water Street Capital  

Mr. Jangro is a principal and senior partner at Water Street Capital, a private investment partnership in Jacksonville, Florida. The firm has approximately $4.7 billion in assets under management and employs an opportunistic long short equity model. Mr. Jangro is a 1982 graduate of Dartmouth College and 1986 graduate of the Tuck School at Dartmouth. He is a member of the University of Richmond Board of Trustees.
Herbert H. McDade, III
Managing Partner
River Birch Capital LLC

Mr. McDade is managing partner of River Birch Capital LLC. River Birch, founded in 2009, is a global long/short credit trading hedge fund. Prior to River Birch, Mr. McDade worked at Lehman Brothers for 25 years. He spent the majority of his career in fixed income in trading roles. He ran global fixed income from 2000 to 2005, global equities from 2005 to 2008, and was named the president and chief operating officer of Lehman in June 2008. Mr. McDade received a B.A. in economics from Duke University and an M.B.A. in finance from the University of Michigan in 1983. He is a member of the University of Richmond Board of Trustees.
Mr. Moelchert is chairman and chief investment officer of Private Advisors LLC, which he founded in 1997. Private Advisors provides both hedge fund and private equity investments to institutional and high net worth clients. Private Advisors is a subsidiary of New York Life Insurance Company. Mr. Moelchert retired from the University of Richmond in 2005 after 30 years of service. He joined the University in 1975 as vice president for business and finance and treasurer and later was the founding president of Spider Management Company, the endowment management company of the University. Mr. Moelchert received his B.B.A. and Master of Accountancy from the University of Georgia. He is a member of the University of Richmond Board of Trustees.
Good: Power of Compounding

The power of compounding
S&P 500 price return versus total return, growth of $10,000, quarterly

- Dec. 2015: $914,424
- Dec. 2015: $228,042

With dividends reinvested
Price return only
Good: The Market Trends Up

S&P 500 Price Index

<table>
<thead>
<tr>
<th></th>
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<th></th>
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</tr>
</thead>
<tbody>
<tr>
<td>Index level</td>
<td>1,527</td>
<td>1,565</td>
<td>2,044</td>
</tr>
<tr>
<td>P/E ratio (fwd.)</td>
<td>27.2x</td>
<td>15.7x</td>
<td>16.1x</td>
</tr>
<tr>
<td>Dividend yield</td>
<td>1.1%</td>
<td>1.8%</td>
<td>2.3%</td>
</tr>
<tr>
<td>10-yr. Treasury</td>
<td>6.2%</td>
<td>4.7%</td>
<td>2.3%</td>
</tr>
</tbody>
</table>
Bad: Pullbacks Are Painful
Good: Strong EPS Growth Expected


- Cons. Des: 13.1%
- Cons. Staples: 4.4%
- Energy: -9.1%
- Financials: 7.9%
- Health Care: 27.8%
- Industrials: 5.7%
- Technology: 17.0%
- Materials: 9.8%
- Telecom: 5.2%
- Utilities: 4.4%
- Total S&P: 11.6%
Bad: Analysts Are Like Weathermen

Forecasted vs. Realized EPS Growth

- Forecast EPS Growth
- Actual EPS Growth
Good: P/E Ratios Near Normal

S&P 500: Aggregate Price to Earnings Ratio

Median = 16.7x

16.8x
Good: Corporate Balance Sheets

**S&P 500 Debt to Equity**

-52%

**S&P 500 Net Debt to EBITDA**
Good: Low Gas Prices
Bad: Profit Margins Historically High

S&P 500 Index Net Margin 1979-2015

- Recession
- Net Margins
Good: Inflation Under Control

CPI and core CPI
% change vs. prior year, seasonally adjusted

<table>
<thead>
<tr>
<th>50-yr. Avg.</th>
<th>Nov. 2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Headline CPI</td>
<td>4.2%</td>
</tr>
<tr>
<td>Core CPI</td>
<td>4.1%</td>
</tr>
<tr>
<td>Headline PCE</td>
<td>3.6%</td>
</tr>
<tr>
<td>Core PCE</td>
<td>3.6%</td>
</tr>
</tbody>
</table>
Good: Labor Costs Under Control

BLS Employment Cost Index*

- Unemployment Rate
- BLS Employment Cost Index
Good: Commercial Real Estate

Commercial real estate vacancy rates by sector

NCREIF ODCE Index

<table>
<thead>
<tr>
<th>Sector</th>
<th>Current</th>
<th>25-year range</th>
</tr>
</thead>
<tbody>
<tr>
<td>Index</td>
<td>7.1%</td>
<td></td>
</tr>
<tr>
<td>Office</td>
<td>11.7%</td>
<td></td>
</tr>
<tr>
<td>Retail</td>
<td>6.5%</td>
<td></td>
</tr>
<tr>
<td>Apartment</td>
<td>5.6%</td>
<td></td>
</tr>
<tr>
<td>Industrial</td>
<td>5.2%</td>
<td></td>
</tr>
</tbody>
</table>
Good/Bad: Return of Volatility

Chicago Board Options Exchange Volatility Index (VIX)*
Good: Households Are Healthy
Good/Bad: The $ is King

U.S. dollar
Year-over-year % change, quarterly, USD major currencies index

<table>
<thead>
<tr>
<th></th>
<th>S&amp;P 500 revenues</th>
</tr>
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<tbody>
<tr>
<td>U.S.</td>
<td>52%</td>
</tr>
<tr>
<td>International</td>
<td>48%</td>
</tr>
</tbody>
</table>

4Q15: 9.3%
Good: US Banks Are Healthier

Banks’ Common Equity Capital - Ratio

Q1-09 5.5%  Q2-09 6.7%  Q3-09 7.8%  Q4-09 8.3%  Q1-10 8.5%  Q2-10 9.0%  Q3-10 9.3%  Q4-10 9.7%  Q1-11 10.0%  Q2-11 10.2%  Q3-11 10.2%  Q4-11 10.5%  Q1-12 10.9%  Q2-12 11.0%  Q3-12 11.2%  Q4-12 11.3%  Q1-13 11.4%  Q2-13 11.9%  Q3-13 12.2%  Q4-13 12.4%  Q1-14 12.4%  Q2-14 12.4%  Q3-14 12.5%  Q4-14

Dotted line indicates upward trend.
Good: Housing Affordability

Housing Affordability Index
Avg. mortgage payment as a % of household income

Nov. 2015: 13.6%

Average: 19.6%
Bad: Tight Lending Standards

Lending standards for approved mortgage loans
Average FICO score based on origination date

Nov. 2015: 745
Good: My Buddy Jax
Bad: US GDP Growth is Anemic

Real GDP
Year-over-year % change

<table>
<thead>
<tr>
<th></th>
<th>3Q15</th>
</tr>
</thead>
<tbody>
<tr>
<td>YoY % chg:</td>
<td>2.1%</td>
</tr>
<tr>
<td>QoQ % chg:</td>
<td>2.0%</td>
</tr>
</tbody>
</table>

Average: 2.9%

Expansion average: 2.2%
Bad: European Economy

Growth of the real gross domestic product (GDP) in the European Union and the Euro area from 2010 to 2020 (compared to the previous year)

Additionall Information:
EU: IMF
Bad: 2105 International Markets
Bad: FANGs Market Impact

Top 10 Contributors to S&P 500 Performance as Percentage of Total Positive Returns

<table>
<thead>
<tr>
<th>Year</th>
<th>% Contribution</th>
</tr>
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<tbody>
<tr>
<td>2003</td>
<td>23%</td>
</tr>
<tr>
<td>2004</td>
<td>24%</td>
</tr>
<tr>
<td>2005</td>
<td>23%</td>
</tr>
<tr>
<td>2006</td>
<td>26%</td>
</tr>
<tr>
<td>2007</td>
<td>30%</td>
</tr>
<tr>
<td>2009</td>
<td>27%</td>
</tr>
<tr>
<td>2010</td>
<td>22%</td>
</tr>
<tr>
<td>2011</td>
<td>34%</td>
</tr>
<tr>
<td>2012</td>
<td>25%</td>
</tr>
<tr>
<td>2013</td>
<td>17%</td>
</tr>
<tr>
<td>2014</td>
<td>24%</td>
</tr>
<tr>
<td>2015</td>
<td>39%</td>
</tr>
</tbody>
</table>
Bad: Commodity Prices in a Free Fall

Commodity prices and inflation
Year-over-year % change

- Headline CPI
- Bloomberg Commodity Index

Graph showing the year-over-year percentage change in commodity prices and inflation from 1996 to 2016.
Ugly: European Banks

Banks leverage (tangible assets/tangible equity)

- US
- Europe
Ugly: Shipping Activity
Bad: Global Debt

Total debt to GDP (Private + Public), 4Q moving average

240%  
230%  
220%  
210%  
200%  
190%  
180%

*Trend calculated from Q1 1995 onwards
Ugly: Corporate Credit Spreads
Bad: SWFs Selling Equities

Sovereign Wealth Funds - 89% of Total SWF Assets
Aggregate Amount in Listed Equities

- Dec 2014: $3,256.14
- Dec 2015: $3,042.77
- Dec 2016: $2,638.47
Bad: Increased Government Regulation
Ugly: Federal Government Spending

Federal budget surplus/deficit
% of GDP, 1990-2025, 2015 CBO Baseline

2015: -2.6%

Forecast
Ugly: Unfunded Entitlement Spending
Ugly: US Dependency Ratio

US Population Ratio: Working Age to 65 and Over

<table>
<thead>
<tr>
<th>Age Group</th>
<th>2011 Level (Thous)</th>
<th>2050 Level (Thous)</th>
<th>Growth Rate 2011 to 2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>18-64</td>
<td>196,264</td>
<td>230,147</td>
<td>17%</td>
</tr>
<tr>
<td>65 and over</td>
<td>41,394</td>
<td>83,739</td>
<td>102%</td>
</tr>
</tbody>
</table>

Ratio and Projections from 1980 to 2060
Good: Rob’s Baby Picture
Bad: Ineffective ECB

ECB Bank Balance Sheet Assets

Weekly Data from Jan 2005 to 1/22/16

ECB Balance Sheet Assets in Billion Euro
Good/Bad: Living Longer

Probability of reaching ages 80 and 90
Persons aged 65, by gender, and combined couple

- 89% for both Men and Women at age 80
- 72% for Women and 62% for Men at age 90
- 47% for Men and 33% for Women at age 90

Perceived retirement shortfall by country
- Expected savings shortfall (years)
- Savings expected to last (years)

- Average: 10, 8, 14, 9, 11, 11, 9, 12, 10, 10, 5, 8, 6
Bad: China GDP Slowing
Ugly: China’s Commodity Consumption
Ugly: Oil Production Costs

Cash cost curve, North Dakota oil output
$ per bbl, cost structures as of August 31, 2015

Bakken crude oil cash price at Clearbrook, MN
Average for December 1-18, 2015:
$36.18 per bbl

At the average realized price in Dec-15, approx. 520 thousand b/d of ND production capacity will receive a price below its cash breakeven.
## Bad/Ugly: World Oil Production Costs

<table>
<thead>
<tr>
<th>Country</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom</td>
<td>$52.50</td>
</tr>
<tr>
<td>Brazil</td>
<td>$48.80</td>
</tr>
<tr>
<td>Canada</td>
<td>$41.00</td>
</tr>
<tr>
<td>United States</td>
<td>$36.20</td>
</tr>
<tr>
<td>Norway</td>
<td>$36.10</td>
</tr>
<tr>
<td>Angola</td>
<td>$35.40</td>
</tr>
<tr>
<td>Colombia</td>
<td>$35.30</td>
</tr>
<tr>
<td>Nigeria</td>
<td>$31.60</td>
</tr>
<tr>
<td>China</td>
<td>$29.90</td>
</tr>
<tr>
<td>Mexico</td>
<td>$29.10</td>
</tr>
<tr>
<td>Kazakhstan</td>
<td>$27.80</td>
</tr>
<tr>
<td>Libya</td>
<td>$23.80</td>
</tr>
<tr>
<td>Venezuela</td>
<td>$23.80</td>
</tr>
<tr>
<td>Algeria</td>
<td>$20.40</td>
</tr>
<tr>
<td>Russia</td>
<td>$17.20</td>
</tr>
<tr>
<td>Iran</td>
<td>$12.60</td>
</tr>
<tr>
<td>UAE</td>
<td>$12.30</td>
</tr>
<tr>
<td>Iraq</td>
<td>$10.70</td>
</tr>
<tr>
<td>Saudi Arabia</td>
<td>$9.90</td>
</tr>
<tr>
<td>Kuwait</td>
<td>$8.50</td>
</tr>
</tbody>
</table>
Good/Bad: The Market favors the Professional

20-year annualized returns by asset class (1995 – 2014)

- REITs: 11.5%
- S&P 500: 9.9%
- 60/40: 8.7%
- 40/60: 8.1%
- Bonds: 6.2%
- Gold: 5.9%
- Oil: 5.7%
- EAFE: 5.4%
- Homes: 3.2%
- Average Investor: 2.5%
- Inflation: 2.4%
Good: Asset Allocation Wins

2000 - 2015
