ANALYTICS INVESTMENT ADVISORS, LLC

Price Earnings Ratios and Interest Rates

Richard C. Hoyt
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It has been postulated recently by commentators and economists[1] that there is an inevitable discerning upward trend in prices and interest rates which will soon have a negative economic impact on the U.S. economy. This commentary examines the efficacy of this supposition.

What?

- U. S. real GDP (Gross Domestic Product) increased an average of 3.1% during the last three consecutive quarter (3.1%, Q2 2017; 3.2%, Q3 2017; and 2.9%, 4Q 2017), compared to 1.3% between 2007-2016; and, 3.2% between1997-2006[2].
- For Q1, 2018 the estimated earnings growth rate for the S&P 500 is 17.1%, which is the highest first quarter earnings growth estimate since Q1, 2011 (19.5%)[3].
- For the Q1, 2018, 53 companies in the S&P 500 have issued positive EPS guidance, well above the five year average of 28[4].
- At the sector level, Information Technology (38) and Consumer Discretionary (24) have the highest number companies issuing positive guidance since Q2 2006[5].
- Industry analysts predict the S&P 500 will increase 16.2% in price over the next twelve months, and that all eleven sectors will report double digit earnings growth[6]. During the last 12 months (March to March), the S&P 500 recorded an increased in value of 11.6%, while the estimated forward 12-month P/E ratio is 16.5, above the five year average of 16.1, and 10-year average, 14.3[7].
- The price-to-earnings ratio (P/E) is the ratio of the market price of a company's earnings, which reflects investor optimism, or lack thereof, because it is based on the required rate of return; i.e., as the required rate of return increases, the P/E ratio decreases.
- In turn, the required rate of return is related to interest rates. As interest rates increase, the required rate of return on all securities, including bonds, also increases. Accordingly, P/E ratios reflect investors' expectations about the growth potential of an equity and the risk involved. The greater the risk, the lower the P/E ratio; however, growth prospects that offset risk lead to higher P/E ratios.
- The following regression analysis and bar chart summarize the historical relationship of P/E ratios[8] and interest rates[9] between January 1950 and January 2018.

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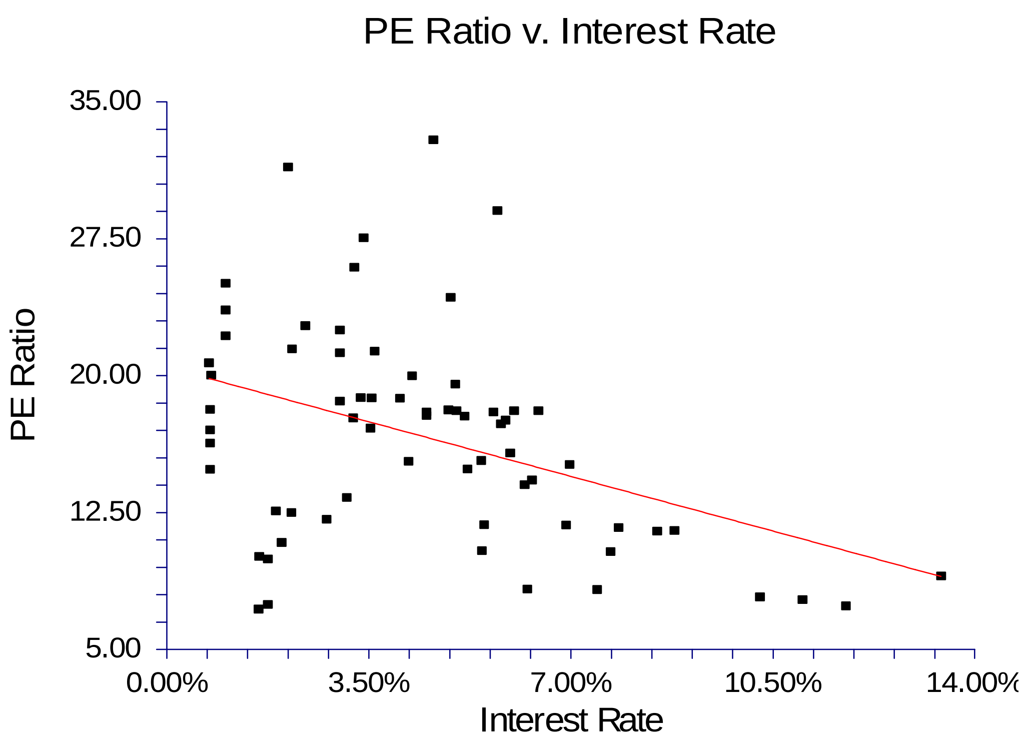
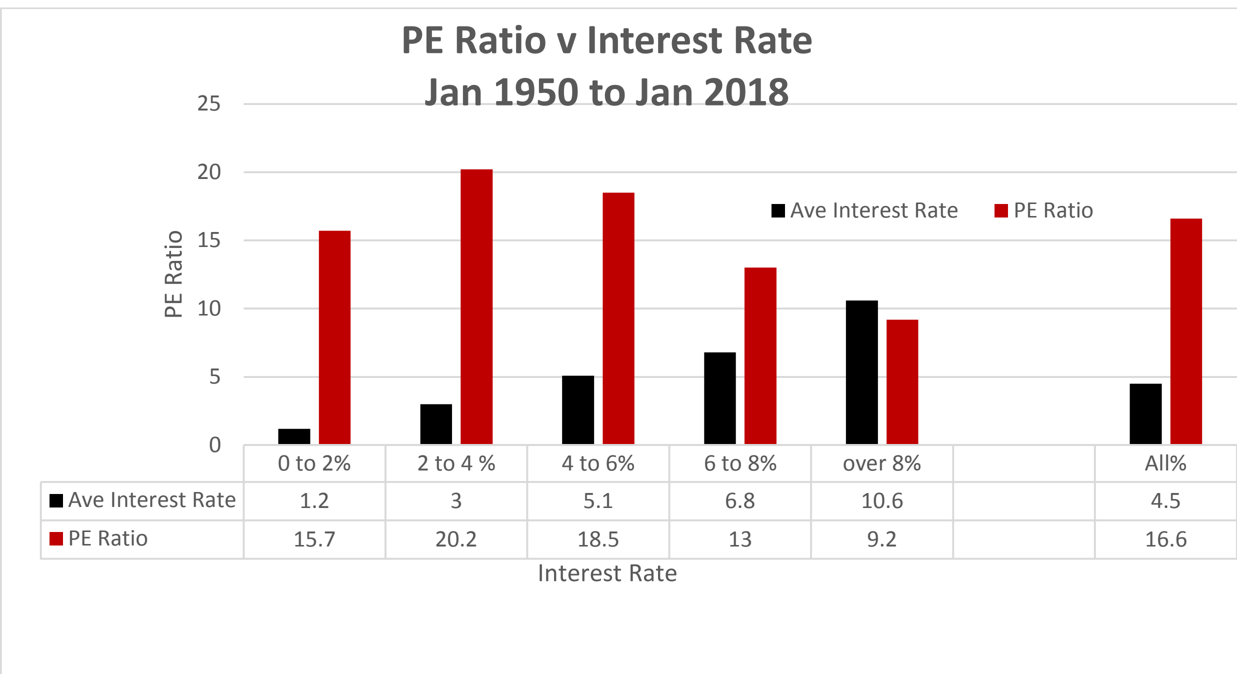
[1] For example: Goldfarb and Daniel Kruger, "Investors Prepare for Inflation", *Dow Jones*, Jan 9, 2018 wsj.com/articles/u-s-government-bonds-pull back; and Feldstein, Martin, "Stocks Are Headed for a Fall". Dow Jones, January 16, 2018, wsj.com/articles/stocks –are-headed-for-a fall-1516145624.
[2] Briefing.com, and AIA, LLC Commentary, Labor Productivity and GDP Growth, April 5, 2017.
[3] *FactSet*, April 6, 2018, p1
[4] Ibid., p2.
[5] Ibid., p2.
[6] Ibid., p5.
[7] Ibid., p11.
[8] S&P 500 PE Ratio by year; multpl.com/table.
[9] Consumer price index, all urban consumers, all items; Federal Reserve Economic Data, https://fred.stlouisfed.org.





	0 to 2%	2 to 4 %	4 to 6%	6 to 8%	over 8%		All%
Ave Interest Rate	1.2	3	5.1	6.8	10.6		4.5
PE Ratio	15.7	20.2	18.5	13	9.2		16.6

- The above chart indicates that between January 1950 and January 2018 the average P/E ratio for an average interest rate of 4.5% was 16.6; and for an interest rate range between 4% and 6%, the average P/E was 18.5. These historical data suggest that with the present core CPI of 1.8%, unchanged from the 12 month period ending January 2018, inflation is not trending in a fashion that is going to require more than three interest rate increases in 2018.

- The jobless rate remains at 4.1% for the sixth consecutive month, while average hourly earnings increased 2.7% from the year earlier. Strong hiring in 2017 and average payroll growth are sufficient to push unemployment down further, which currently remains the lowest since 2000.
- The number of Americans claiming new unemployment benefits fell to the lowest level since 1973, signaling continued health in the labor market, while the four-week moving average for continuing claims decreased to 1,861,500, the lowest level for this average since January 1974.
- Black and Latino jobless rates declined to record lows in December 2017, when the unemployment rate for African-Americans was an astonishing 6.8%, the lowest ever recorded, For the same period, Latino unemployment was 4.9%, close to the record low of 4.8% in 2006.

Why?

- The reason for the above plethora of concurrent positive economic news is simply- "pro-growth fiscal policies"[10] which have :
- Increased productivity by reducing debilitating and wasteful federal regulations[11];
- Intensified stock buybacks and corporate dividends which benefits companies, shareholder and consumers to the degree companies have the incentive maximize profits by providing market driven products and services;[12]
- Promoted wage growth driven by productivity gains, which is not inflationary;[13]
- Expanded economic output which historically has resulted in lower, rather than higher prices;[14]
- Generated the highest economic optimism in 15 years of the chief executive of America's largest companies for spending, hiring and sales;[15]
- Resulted in the highest recorded small-business owners optimism recorded in 35 years;[16]
- Allowed consumer optimism and spending to continue as evidenced by the University of Michigan index of Consumer Sentiment, which remains at its highest level since April 2004;[17]
- Stimulated massive deflationary power of FAANG companies (Facebook, Apple, Amazon, Netflix, Google) which have global platforms (30% of S&P500 revenue growth, not including healthcare), while encouraging billions of repatriation dollars to the U.S (Apple $245 billion alone).

How?

- Focus on the broader economic conditions and remember the long-term realities of stock market movements. Resist the temptation to time the market using arbitrary market levels. The value of equities are ultimately driven by the profitable economic activity they represent. Overall there is no sign of the current economy faltering in the near term; to the contrary, the U.S. economy seems to gaining momentum, domestically and worldwide.
- To quote Warren Buffet: "Stick with a simple investment strategy rather than chasing returns, favoring stocks even though they can be riskier in the short-term. It is a terrible mistake for investors to measure risk by their portfolios ratio of bonds to stocks".[18]

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[10] Rublin, Lauren R. "Bright Outlook for the Economy and Stocks", *Barron's*, January 13, 2018 for wide-ranging commentary by Barron's 2018 Roundtable of 10 experts on the state of U.S. economy.

[11] Kudlow, Larry and Stephen Moore, "Who's afraid of Higher Wages?", *Wall Street Journal*, Opinion Section, March 13, 2018, A15

[12] Cochrane, John H., "Stock Buybacks Are Proof of Tax Reform's Success", *Dow Jones* March 5, 2018, wsj.com/articles/stock-buybacks-are proof -1520292384.

[13] See Ma, Henry, "Will Wage Growth Drive up Inflation", Tactical Investment Insights, March 21, 2018.

[14].Kudlow, op.cit.

[15] Chaney, Sarah: wsj.com/articles/tax-revamp-drive-corporate-ceos-1520963290.

[16] Ibid,

[17] Torry, Harriet, "U.S. Household Net Worth In Record Territory", March 8, 2018, wsj.com. articles/u-s-household net worth-1520538473.

Performance Summary

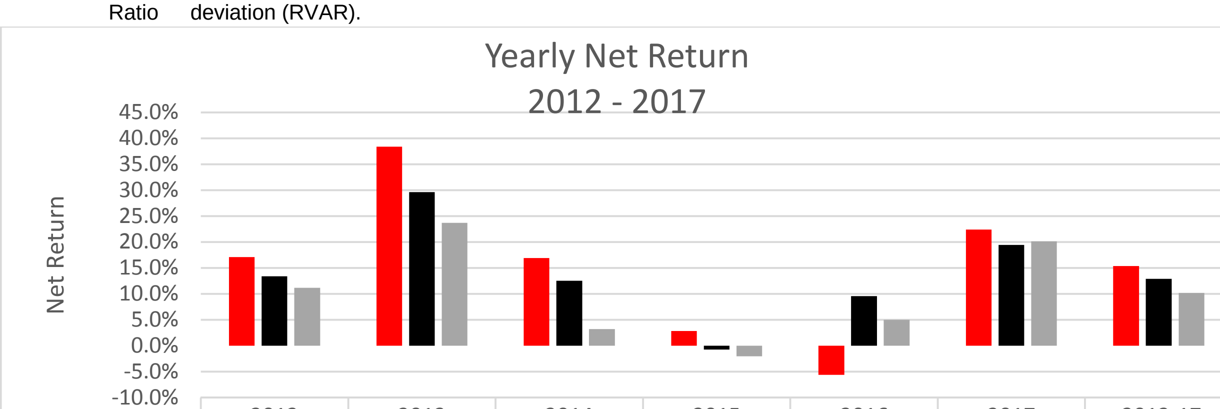
- **Cautious Strategy**: Cautious investors seeking better than nominal returns, but with low risk and emphasis on preservation of wealth (Risk Score: 111-200).
- **Moderate Strategy:** Prudent investors desiring a portfolio designed to accomplish medium to long term financial goals and an investment strategy which accounts for taxes and inflation. Calculated risk is acceptable to achieve good returns (Risk Score: 201-290).
- **Assertive Strategies 1 & 2:** Assertive investors with sufficient income to invest mostly for capital growth. Higher volatility, moderate risk, and more aggressive investments are acceptable to accumulate wealth over time (Risk Score: 291-390).
- **Aggressive Strategy:** Aggressive investors intending to compromise portfolio balance in pursuit of higher long term returns. Security of capital is secondary to potential wealth accumulation (Risk Score: 391-450).

	2012-2017 Avg.*	**YTD* 3/31/2018**				
S&P500	**12.87%**	**-1.22%**				
Barclay US TR	**2.48%**	**-1.46%**				
			Beta	**R^2**	**SD**	**Sharpe****
Cautious	9.88%	-3.03%	.88	90	9.13	1.22
Moderate	12.81%	-0.95%	1.08	92	11.09	1.46
Assertive 1	15.34%	-1.20%	1.34	90	13.89	1.34
Assertive 2	20.13%	-0.37%	1.58	97	15.82	1.39
Aggressive	22.58%	-2.76%	2.20	93	22.58	1.49

*Net Average Return, Portfolio Center, Schwab Portfolio Technologies. Returns are negotiable and range between 50 and 125 basis points.

** Risk Statistics, Morningstar Advisor Workstation; most recent 5 years, computed quarterly.

Beta	Expected change in portfolio return per 1% change in market index return.
R^2	Percent of variation in regression equation explained by the independent variable (S&P500).
SD	Standard deviation of the dependent variable (Net Return).
Sharpe Ratio	Reward-to-Variability Ratio; i.e., portfolio return above risk free rate of return divided by standard deviation (RVAR).



	2012	2013	2014	2015	2016	2017	2012-17
Assertive 1	17.1%	38.4%	16.9%	2.9%	-5.6%	22.4%	15.3%
S&P 500	13.4%	29.6%	12.6%	-0.7%	9.5%	19.5%	12.9%
MSCI World	11.2%	23.7%	3.2%	-2.0%	5.0%	20.1%	10.2%

[18] Berkshire Hathaway (BRKB) 2017 Annual Letter to Stockholders. See also, AIA, LLC Commentary, Bond Blahs, April 4, 2015.