Is The Stock Market Cheap?

***e*Research Corporation** is pleased to provide an article by Jill Mislinski of Advisor Perspectives.

Ms. Mislinski looks at P/E Ratios from various perspectives, and answers the question.

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Bob Weir, CFA: Director of Research

Is The Stock Market Cheap?

April 4, 2017
By: Jill Mislinski

Here is the latest update of a popular market valuation method using the most recent Standard & Poor's "as reported" earnings and earnings estimates, and the index monthly average of daily closes for the past month.

For the earnings, see the table below created from Standard & Poor's latest earnings spreadsheet.

- **TTM P/E ratio = 23.7**
- **P/E10 ratio = 29.0**

The Valuation Thesis

As-Reported Earnings	
Month	TTM Earnings
Jun 2016	86.92
Jul 2016	87.64
Aug 2016	88.37
Sep 2016	89.09
Oct 2016	90.91
Nov 2016	92.73
Dec 2016	94.55
Jan 2017	96.27
Feb 2017	97.98
Mar 2017	99.70
Apr 2017	101.71
May 2017	103.71
Jun 2017	105.72

Standard & Poor's as of 3/31/2017

A standard way to investigate market valuation is to study the historic Price-to-Earnings (P/E) ratio using reported earnings for the trailing twelve months (TTM). Proponents of this approach ignore forward estimates because they are often based on wishful thinking, erroneous assumptions, and analyst bias.

TTM P/E Ratio

The "price" part of the P/E calculation is available in real time on TV and the Internet. The "earnings" part, however, is more difficult to find. The authoritative source is the Standard & Poor's website, where the latest numbers are posted on the earnings page.

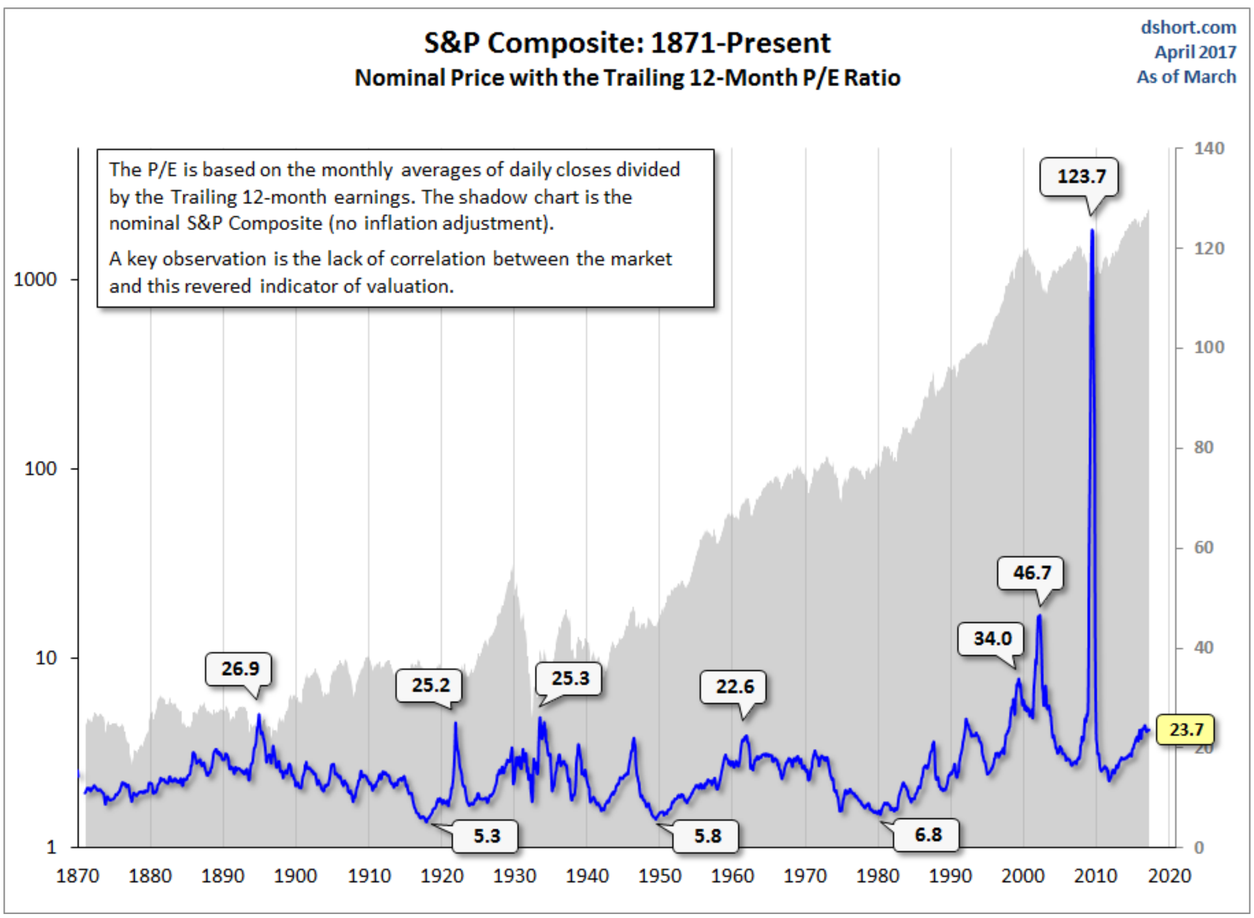
The table here shows the TTM earnings based on "as reported" earnings and a combination of "as reported" earnings and Standard & Poor's estimates for "as reported" earnings for the next few quarters.

The values for the months between are linear interpolations from the quarterly numbers.

The average P/E ratio since the 1870s has been about 16.7. But the disconnect between price and TTM earnings during much of 2009 was so extreme that the P/E ratio was in triple digits — as high as the 120s — in the Spring of 2009. In 1999, a few months before the top of the Tech Bubble, the conventional P/E ratio hit 34. It peaked close to 47 two years after the market topped out.

As these examples illustrate, in times of critical importance, the conventional P/E ratio often lags the index to the point of being useless as a value indicator. "Why the lag?" you may wonder. "How can the P/E be at a record high after the price has fallen so far?" The explanation is simple. Earnings fell faster than price. In fact, the negative earnings of 2008 Q4 (-$23.25) is something that has never happened before in the history of the S&P 500.

Let us look at a chart to illustrate the unsuitability of the TTM P/E as a consistent indicator of market valuation.



The P/E10 Ratio

Legendary economist and value investor Benjamin Graham noticed the same bizarre P/E behavior during the Roaring Twenties and subsequent market crash. Graham collaborated with David Dodd to devise a more accurate way to calculate the market's value, which they discussed in their 1934 classic book, Security Analysis.

They attributed the illogical P/E ratios to temporary and sometimes extreme fluctuations in the business cycle. Their solution was to divide the price by a multi-year average of earnings and suggested 5, 7, or 10-years.

In recent years, Yale professor and Nobel laureate Robert Shiller, the author of Irrational Exuberance, has popularized the concept to a wider audience of investors and has selected the 10-year average of "real" (inflation-adjusted) earnings as the denominator. Shiller refers to this ratio as the Cyclically Adjusted Price Earnings Ratio, abbreviated as CAPE, or the more precise P/E10, which is our preferred abbreviation.

The Correlation between Stocks and Their P/E10

As the next chart below illustrates, the P/E10 closely tracks the real (inflation-adjusted) price of the S&P Composite. In fact, the de-trended correlation between the two since 1881, the year when the first decade of average earnings is available, is 0.9977. (Note: A perfect positive correlation would be 1 and the absence of correlation would be 0).

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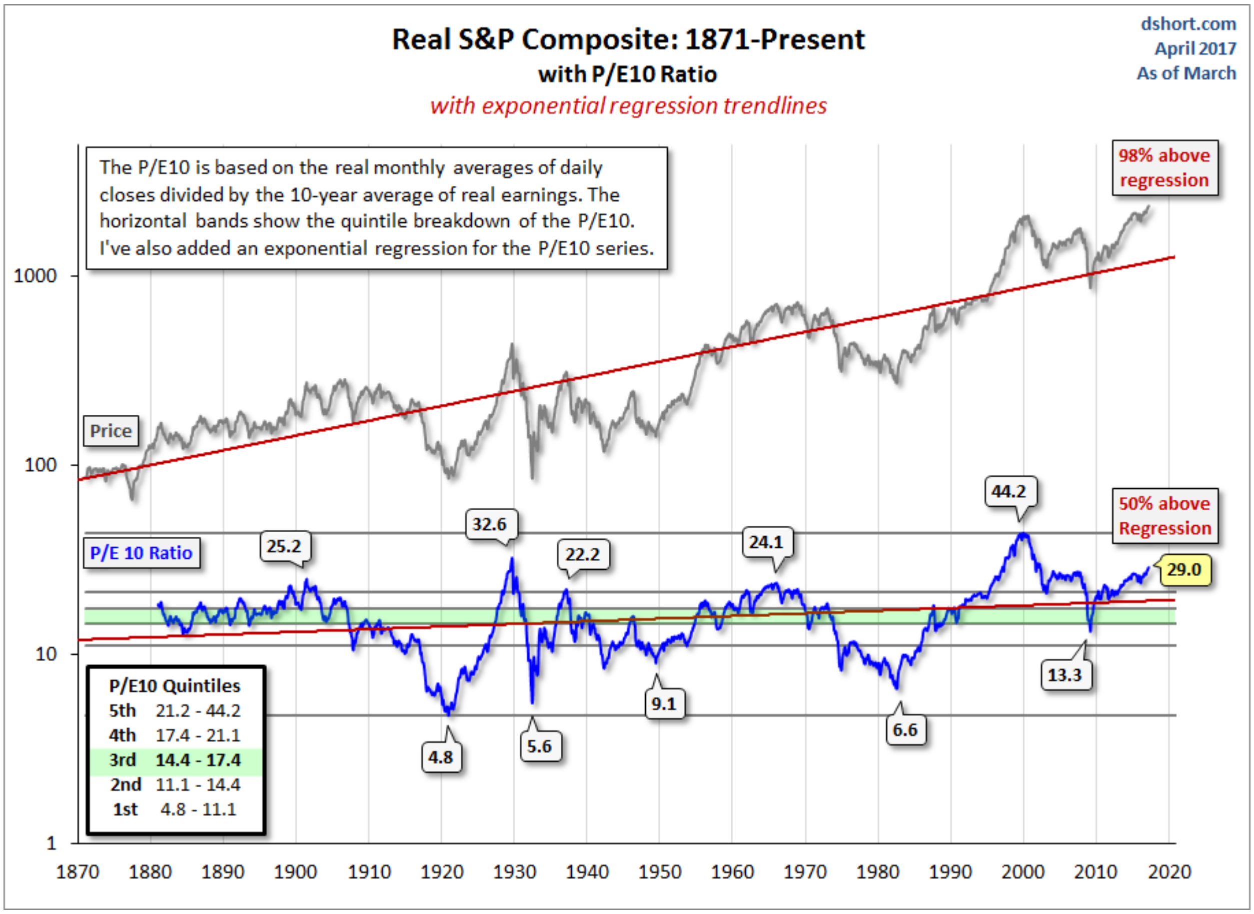

The historic P/E10 average is 16.7. After dropping to 13.3 in March 2009, the ratio rebounded to an interim high of 23.5 in February of 2011 and then hovered in the 20-to-21 range. It began rising again in late 2013 and hit an interim high of 27.0 in August of 2015. It has now reached a new interim high of 29.0.

Of course, the historic P/E10 has never flat-lined on the average. On the contrary, over the long haul it swings dramatically between the over- and under-valued ranges. If we look at the major peaks and troughs in the P/E10, we see that the high during the Tech Bubble was the all-time high above 44 in December 1999. The 1929 high of 32.6 comes in at a distant second. The secular bottoms in 1921, 1932, 1942, and 1982 saw P/E10 ratios in the single digits.

The chart also includes a regression trend-line through the P/E10 ratio for the edification of anyone who believes the price-earnings ratio has naturally tended higher over time as markets evolve. The latest ratio is 50% above trend, up from 48% above last month.

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Where Does The Current Valuation Put Us?

For a more precise view of how today's P/E10 relates to the past, our chart includes horizontal bands to divide the monthly valuations into quintiles — five groups, each with 20% of the total.

Ratios in the top 20% suggest a highly overvalued market, and the bottom 20% a highly undervalued market.

What can we learn from this analysis? The Financial Crisis of 2008 triggered an accelerated decline toward value territory, with the ratio dropping to the upper second quintile (from the bottom) in March 2009. The price rebound since the 2009 low pushed the ratio back into the top quintile, hovered around that boundary, and has now moved higher.

A cautionary observation is that when the P/E10 has fallen from the top to the second quintile, it has eventually declined to the lowest quintile and bottomed in single digits. Based on the latest 10-year earnings average, to reach a P/E10 in the high single digits would require an S&P 500 price decline well below 1000. Of course, a happier alternative would be for corporate earnings to continue their strong and prolonged surge. If the 2009 trough was not a P/E10 bottom, when might we see it occur? These secular declines have ranged in length from over 19 years to as few as three.

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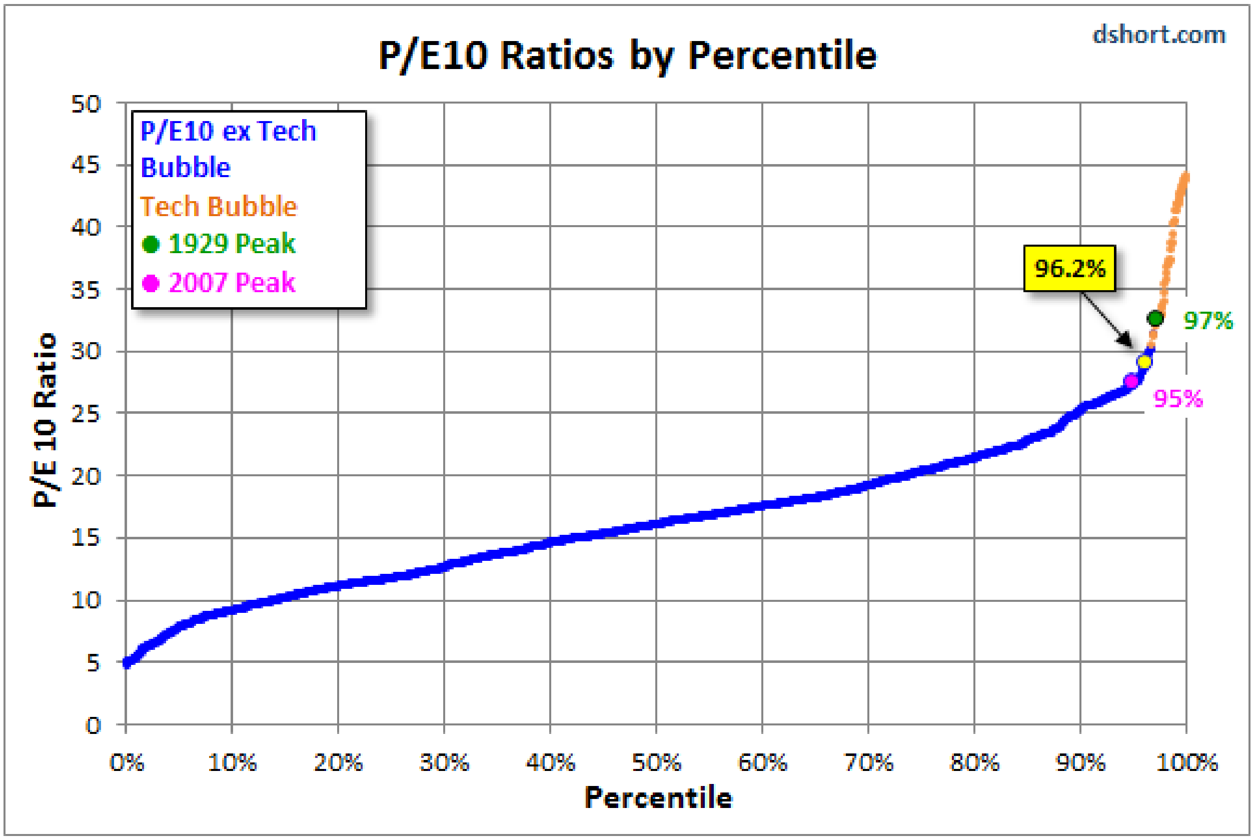
Percentile Analysis

We can also use a percentile analysis to put today's market valuation in historical context. As the chart below illustrates, latest P/E10 ratio is approximately at the 96th percentile of this series.



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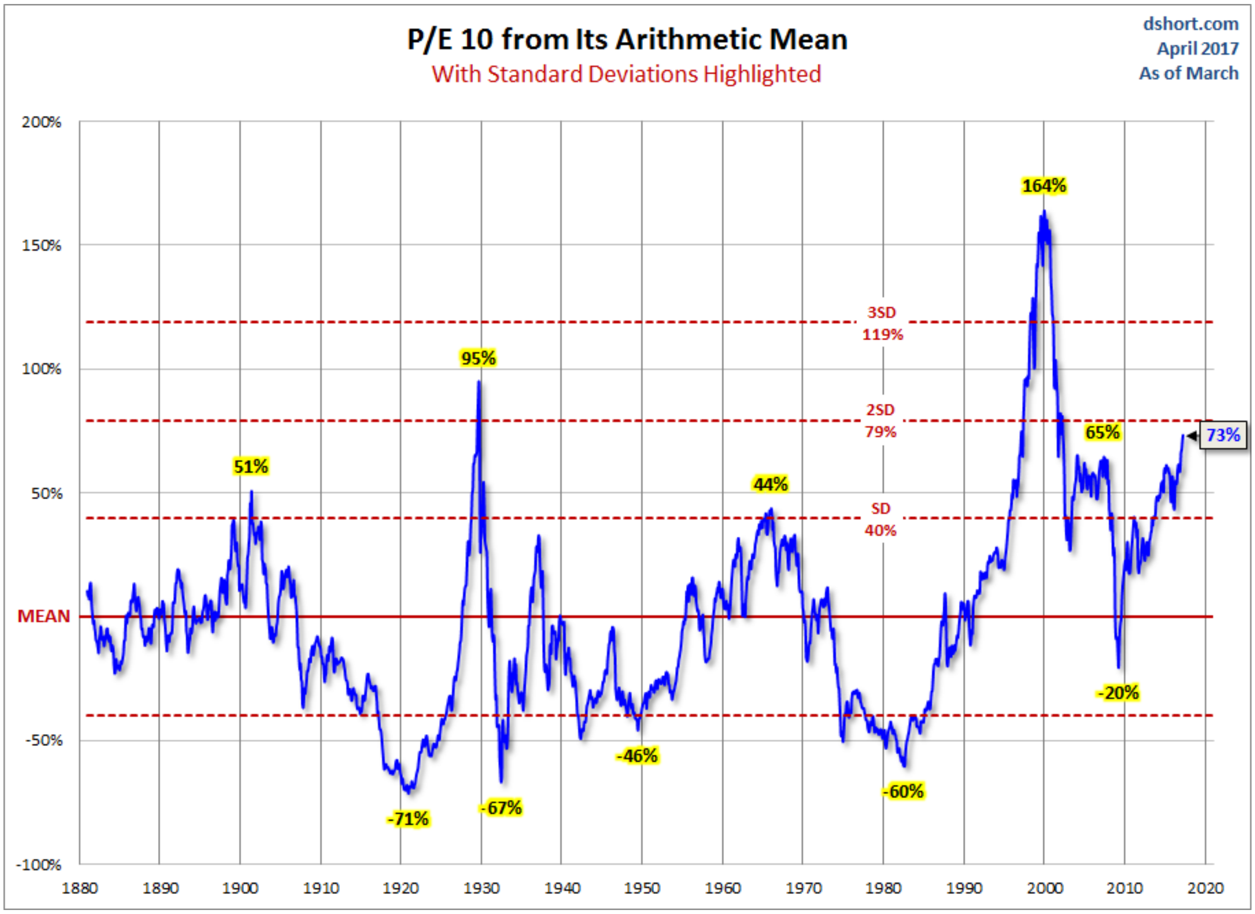
Deviation from the Mean

Here are a pair of charts illustrating the historic P/E 10 ratio from its mean (average) and geometric mean with callouts for peaks and troughs along with the latest values.



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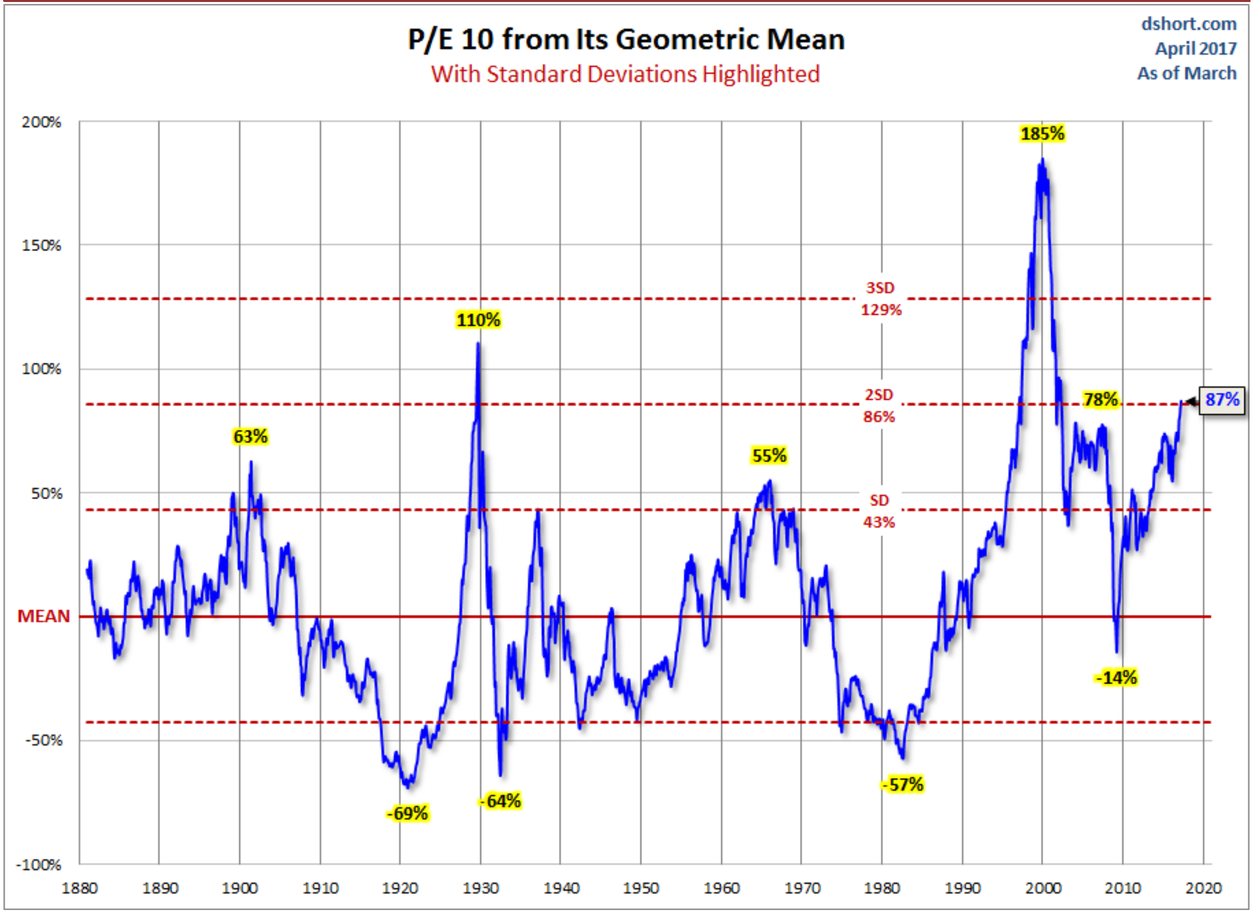

Relative to the mean, the market remains quite expensive, with the ratio approximately 73% above its arithmetic mean and 87% above its geometric mean.

The Prevailing Question...

Was March 2009 the beginning of a secular bull market? Perhaps, and certainly, the new all-time highs repeatedly set over the past year are conspicuous tick marks for the optimists. But the history of market valuations suggests a cautious perspective.

Additional Notes

What Are the Impacts of Low-Interest Rates and Inflation on Market Valuations?

For more on this topic, see our monthly update:

- Market Valuation, Inflation, and Treasury Yields: Clues from the Past

Wouldn't Valuations Be Much Lower If We Exclude the Financial Crisis Earnings Crash?

This is an often asked question, the assumption being that the unprecedented negative earnings of the Financial Crisis skewed the P/E10 substantially higher than would otherwise have been the case. While that may seem a reasonable assumption, a simple experiment shows that the earnings plunge did not dramatically impact the ratio. Let's assume that the December 2007 TTM earnings of 66.18 remained constant for the next 29 months, totally eliminate the collapse in earnings of the Great Recession. What impact does this have on the P/E 10? The mean (average) only drops from 16.6 to 16.5. The lower bound of the top quintile drops from 21.2 to 20.8.

Where Can I Find the Latest Earnings Data for the S&P 500?

Follow these steps to access the Standard & Poor's earnings spreadsheet:

1. Go to the S&P 500 page on the S&P Dow Jones Indices website. Here is a: direct link to the page.
2. Click the "ADDITIONAL INFO" button in the left column.
3. Click the Index Earnings link to download the Excel file. Once you've downloaded the spreadsheet, scroll down to the "As Reported Earnings" data in column L.

Exactly What Is the S&P Composite index?

For readers unfamiliar with the index, see this article for some background information.

BW: Information on the Author is provided below.

Jill Mislinski works for Advisor Perspectives, a leading interactive publisher for Registered Investment Advisors, as Research Director. She analyzes economic and market data for the "dshort" portion of its website, concentrating on short-term and long-term trends. She is a CFA candidate.

BW: Information on Doug Short, dshort.com, and Advisor Perspectives is provided on the following pages.

ABOUT THE AUTHOR AND DSHORT.COM

My original dshort.com website was launched in February 2005 using a domain name based on my real name, Doug Short. I'm a first wave boomer with a Ph.D. in English from Duke and a lifelong interest in economics and finance. In 2011 my website was acquired by Advisor Perspectives.

My first career was a faculty position at North Carolina State University, where I achieved the rank of Full Professor in 1983. During the early '80s I got hooked on academic uses of microcomputers for research and instruction. In 1983, I co-directed the Sixth International Conference on Computers and the Humanities. An IBM executive who attended the conference made me a job offer I couldn't refuse.

Thus began my new career as a Higher Education Consultant for IBM — an ambassador for Information Technology to major universities around the country. After 12 years with Big Blue, I grew tired of the constant travel and left for a series of IT management positions in the Research Triangle area of North Carolina. I concluded my IT career managing the group responsible for email and research databases at GlaxoSmithKline. In mid-2006 economic analysis became my full-time occupation.

My interest in economics and financial planning was triggered by the bear market of 1973-74. My wife and I bought our first home in August 1973, a month after our second child was born. Two months later, the Oil Embargo tripled gas prices, and I began commuting to work on a bicycle. During the decade of stagflation, I became fascinated with economics, finance, and market behavior (my wife claims it's an addiction).

Charting financial data is something I've been doing for over thirty years. I was an early user of first-generation spreadsheet software (VisiCalc, SuperCalc, and Lotus 1-2-3), and I participated in the beta program for the original release of both Excel and Quicken.

I use the word "chart" for my visualizations of data rather than "graph", which has always struck me as a bit pretentious. I suppose my language preference was conditioned decades ago by the terminology used in spreadsheet software.

Contrary to what many visitors assume based on my last name, I'm not a bearish short seller. It's true that some of my content has occasionally been a bit pessimistic in recent years. But I believe this is a result of economic realities and not a personal bias. For the record, my efforts to educate others about bear markets date from November 2007, as this Motley Fool article attests.

Unless I've been coerced into a vacation to a remote location without Internet access, I'm usually at home in North Carolina watching the economy and markets on my handy Ultrabook or iPad.

Doug Short, Ph.D.
Advisor Perspectives

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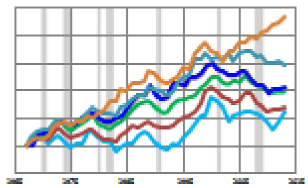

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