



Implications of the Current Shiller P/E Ratio

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This article expands on ideas presented in a previous article, “Return Distributions and the Shiller P/E Ratio.” Here we study the historical behavior of U.S. stocks during three-year holding periods that began at with valuations comparable to recent market conditions, as measured by the Shiller P/E ratio.

A recent article of Keith’s, [Return Distributions and the Shiller P/E Ratio](#), received numerous responses from readers, many of whom asked, “What is the Shiller P/E ratio today, and what does it imply for the stock market?” Together, we endeavored to answer that question by measuring the historical distribution of three-year returns for stocks when the beginning valuation level for the market was comparable to current conditions.

According to Shiller’s [web site](#), stocks ended the month of February with a Shiller P/E of 20.01, placing the market’s recent valuation within the most expensive quartile of its historical range dating back to 1884. Since the “most expensive quartile” constitutes a wide range of valuations – 19 to 44 for the Shiller P/E – we decided to narrow the focus of the study to periods for which the beginning Shiller P/E fell between 18.00 and 22.00, within two points of the current value. This range captures approximately 18% of all monthly observations since 1884, and might be considered “expensive” in the context of the metric’s history, but not extraordinarily so.



U.S Stock Market*
1884 – 2009
Rolling 3-Year Holding Periods
1,512 Monthly Observations

	When the beginning Shiller P/E is...	
	<u>18.0-22.0</u>	<u>Entire History</u>
Average 3-Year Return (annualized)	7.99%	10.58%
Median 3-Year Return (annualized)	7.58%	9.44%
% of Periods with Negative Return	21.90%	15.50%
Best 3-Year Return (total)	134.08%	194.52%
Worst 3-Year Return (total)	(61.99%)	(80.84%)

*U.S. stock market returns for the period 1884 through 1926 are derived from the Shiller market index [here](#). Returns from 1926 through 1969 represent the “Large Company Stocks” category from Ibbotson Associates. Returns from 1970 onward represent the S&P 500 Index.

Sources: Robert J. Shiller, Standard & Poor’s; Ibbotson Associates; Capital Advisors, Inc.

The results of this study conform to logical expectations – a beginning Shiller P/E near its recent level, which is expensive by historical standards, corresponds to a less- favorable-than-average distribution of outcomes relative to the total history of the stock market. Specifically, an investor in the stock market today might expect to earn approximately 8% per annum over three years in exchange for about a one-in-five probability of losing money over the same time period. This compares for the baseline expectation of a return near 10% per annum in exchange for a 15% probability of losing money that investors in the U.S. stock market have historically faced.

Clearly, exposing oneself to a higher risk of loss in pursuit of a lower expected return over three years is not ideal for U.S. stockholders. But when the alternatives include three-year Treasury Notes yielding 1.40%; investment-grade corporate bonds yielding 3.30% (A-rated, non-callable, industrial, 3-year maturity); or the sovereign debt of Greece to yield 5.6% for three years; the risk-reward tradeoff from U.S. stocks looks more respectable by default.¹

¹ The source for all of these yield levels is Bloomberg as of early March, 2010.



We can quantify *how* respectably stocks might compare to these alternatives by using the current yield-to-maturity for these alternatives as benchmarks for U.S. stocks. For instance, we can measure how frequently stocks have outperformed the yields available on these alternatives over rolling three-year holding periods in the past when the Shiller P/E was comparable to what it is today. This same logic can be applied to a benchmark for the stock market against itself by measuring how frequently stocks have achieved their “average” return near 10% per annum from a starting point near today’s valuation level.

U.S Stock Market*
1884 – 2009
Rolling 3-Year Holding Periods with a Beginning Shiller P/E of 18-22
279 Monthly Observations

<u>Benchmark Return</u>	<u>How Often Stocks Outperformed...</u>
1.40% (3-Year U.S. Treasury YTM)	73%
3.30% (3-Year A-Rated Corp. YTM)	65%
5.60% (3-Year Sovereign Debt of Greece)	59%
10.00% (Common Expectation for Stocks)	38%

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Clearly, investors willing to expose their savings to the uncertainty of the stock market seem likely to be rewarded relative to the safety of short-term Treasury notes and high quality corporate bonds. The historical data suggest about a 70% probability of success for this tradeoff over a three-year time horizon.

These data can also provide a framework for considering the merits of a troubled sovereign credit like Greece. Will countries in the euro zone stand aside while Greece defaults within three years? What is the likelihood of default versus restructuring of Greece’s debt? Will Greece even need a bailout within three years? Rational people might answer “no” to all of these questions, and for them, the prospect of a 5.6% yield on short-term Greek bonds may seem attractive at a time when U.S. stocks only offer a 59% chance of doing better, according to the historical data.



There is downside risk for all of these investment choices. Let's hope that U.S. Treasury bonds still have a negligible risk of default over the next three years, but A-rated corporate debt is not as certain, and the sovereign debt of Greece seems considerably less so. As for U.S. stocks, their downside risk is material from today's valuation level if one considers the magnitude of possible losses in addition to their historical frequency:

U.S Stock Market*
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Downside Risk...

Frequency of Losing 10%+ After 3-Years	14%
Frequency of Losing 20%+ After 3-Years	5%
Frequency of Losing 30%+ After 3-Years	3%
Frequency of Losing 40%+ After 3-Years	1%

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Sources: Bloomberg, Robert J. Shiller, Standard & Poor's; Ibbotson Associates; Capital Advisors, Inc.

Successful investing is all about balancing risk and reward, but there is more than one way to consider this tradeoff. The standard academic framework is built upon "mean-variance" analysis, wherein every major asset class is "scored" by its historical return and standard deviation metrics. This mean-variance framework underpins the highly useful – and marketable – platform of investment analysis known as Modern Portfolio Theory, or "MPT."

As useful (and ubiquitous) as MPT may be, its practitioners need to recognize its limitations. Specifically, MPT only produces the optimum portfolio solution in a world of efficient markets and random asset market returns. Remove the assumption of random returns and the math that "proves" MPT falls apart.



Our research, and the work of countless others before us, demonstrate that asset markets are *not* totally random. Holding periods that begin with a low valuation produce much better outcomes than those that proceed from high valuations. Asset markets produce *cycles* as they wiggle and crash their way toward the long-term mean condition that MPT plugs into its formulas as a “truth” for every asset class. By assuming random returns in the asset markets, MPT blinds its practitioners to the cycles that build wealth for investors when exploited successfully or destroy it when timed poorly.

Our research suggests that investors deserve an alternative conversation with the professionals that serve them. Investors who have grown weary of the same old “buy-and-hold” advice from practitioners of MPT might benefit from a thoughtful approach to market timing; one that is designed with empirical data as its primary input, rather than the instincts and biases of the professional advisor.

More importantly, the empirical record shows that every investor should have *multiple* “optimum portfolios” – one portfolio designed for markets when they are cheap and another for when they are expensive. In between, there can be numerous shades of grey where certain asset sectors are over-weighted when they are statistically most likely to perform well, while other sectors are under-weighted when the opposite seems true. The mean-variance analysis of MPT does not promote this kind of flexibility.

Today virtually all asset markets look expensive, with stocks trading well above their long-term mean valuation level and bonds offering very low yields. The one exception may be high-quality stocks. An investor can purchase shares in numerous “blue chip” companies today at a low P/E ratio and an attractive dividend yield well above the yields available on U.S. government bonds and short-term corporate debt.

At a time when the “market” as a whole is trading within the most expensive quartile of its historical range, many blue chip stocks have characteristics reminiscent of the lower two quartiles of the market’s valuation record. Due to this more favorable starting point, blue chips *might* provide investors with the kind of risk-reward tradeoff they typically expect from equities (i.e. returns near 10% with about a 15% chance of losing money over three years) at a time when the overall stock market seems less likely to do so.

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