

Don't Bet Your Retirement On History Repeating Itself

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People nearing [retirement](#) should take note of the fact that U.S. financial markets have entered uncharted waters now in regards to the low bond yields and high stock market valuations facing investors.

Classic safe withdrawal rates studies such as [William Bengen's](#) and the [Trinity study](#) investigate sustainable withdrawal rates from rolling periods of the historical data, giving us an idea of what would have worked in the past. For a thirty-year retirement period, we can learn about the historical sustainable withdrawal rates beginning up to thirty years ago (i.e., 1986). The question remains whether those past outcomes provide reasonable expectations for the future.

This is worth repeating as it is important to remember and easy to forget. When looking at thirty-year retirements with historical simulations, we can only consider retirements beginning up to the mid-1980s.

Due to **sequence of returns risk**, recent market conditions only show up at the end of these retirements and have little bearing on their outcomes. This matter extends beyond academic interest, **as market conditions have witnessed historical extremes in recent years, such as the current historically low interest rates.**

The general problem with attempting to gain insights from historical outcomes is that future market returns and withdrawal rate outcomes are connected to the current values of the sources for market returns. As John Bogle says in his brilliant 2009 book [Enough](#):

“My concern is that too many of us make the **implicit assumption that stock market history repeats itself** when we know, deep down, that the only valid prism through which to view the market's future is the one that takes into account **not history, but the sources of stock returns.** [emphasis in the original]”

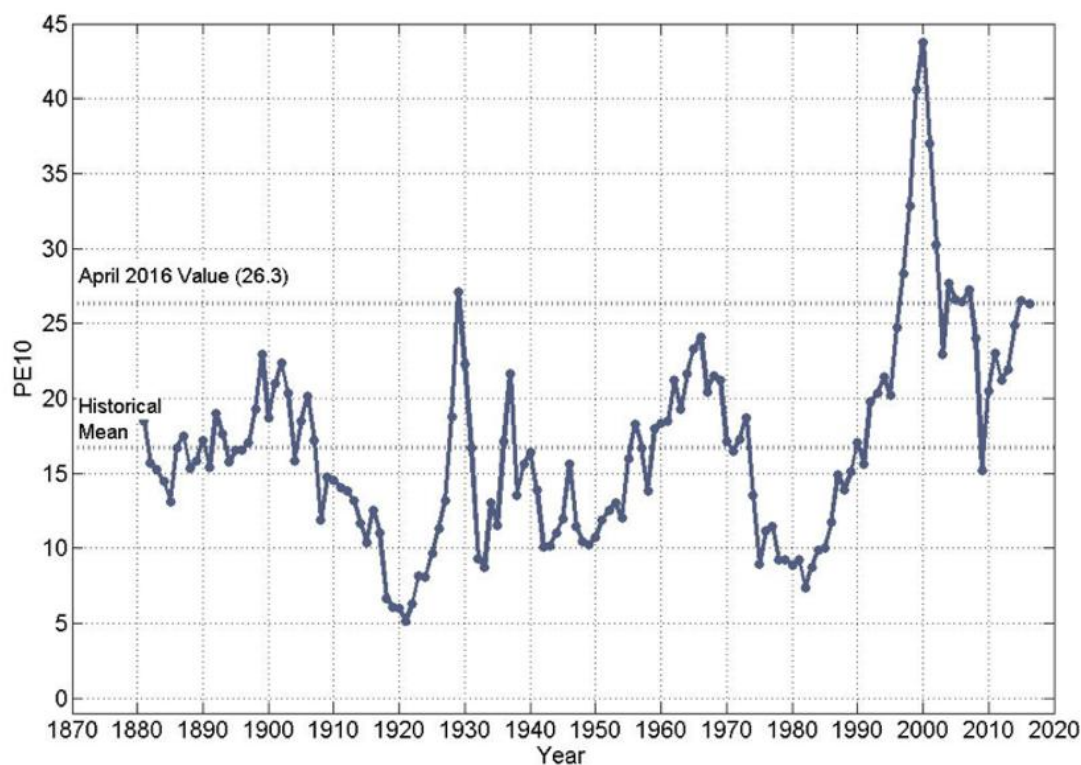
These sources include income, growth, and changing valuation multiples. Future stock returns depend on dividend income, growth of underlying earnings, and changes in valuation multiples placed on earnings.

If the current dividend yield is below its historical average, then future stock returns will also tend to be lower. When price-earnings multiples are high, markets tend to exhibit mean reversion, so relatively lower future returns should be expected.

Exhibit 1 shows that stock market valuations have been high for much of the past twenty years, relative to the period until 1986 for which we know the outcomes from thirty-year retirements.

Exhibit 1

Robert Shiller's Cyclically-Adjusted Price Earnings Ratio (PE10)



Source: Robert Shiller's Data
(<http://www.econ.yale.edu/~shiller/data.htm>)

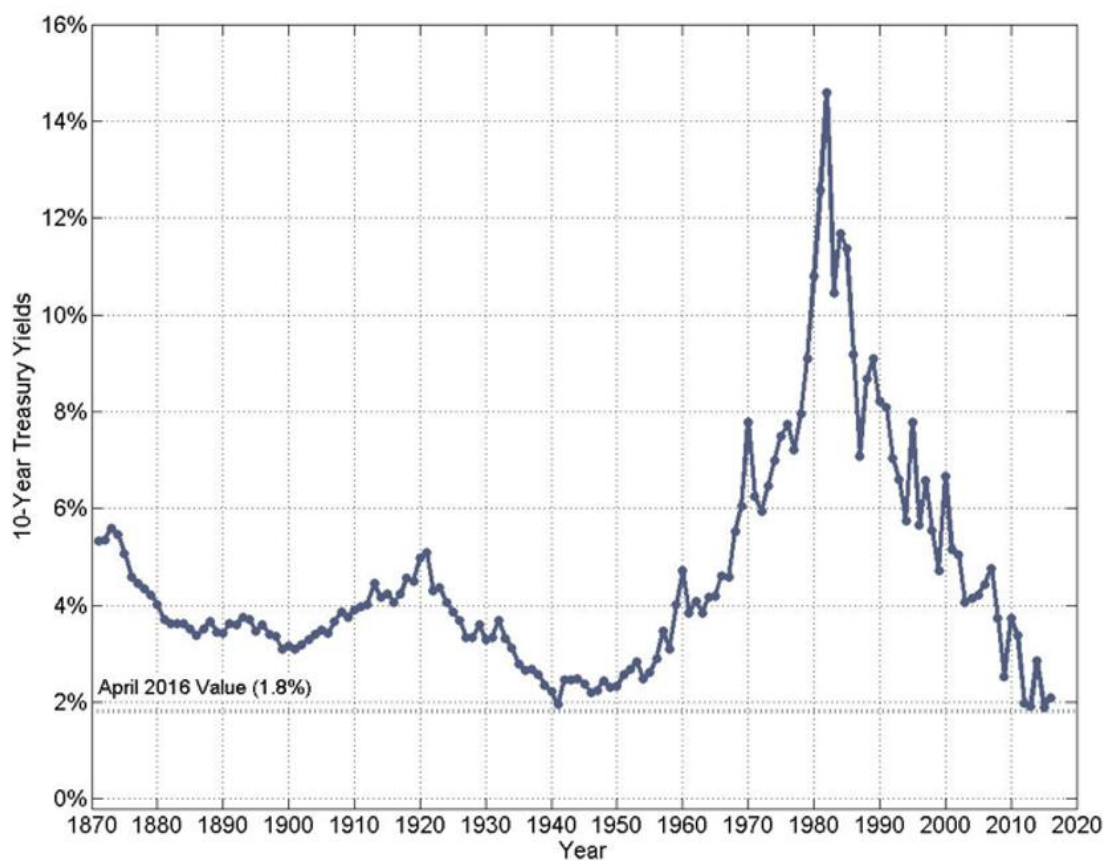
Returns on bonds, meanwhile, depend on the initial bond yield and subsequent yield changes. Mathematically, if interest rates stay the same, then current interest rates will reflect the subsequent return on bonds.

Low bond yields will tend to translate into lower returns due to less income and the heightened interest rate risk associated with capital losses if interest rates rise. This relationship is very tight.

Exhibit 2 shows that recent retirees have been dealing with low interest rates. **We do not have much experience in the historical record with this type of interest rate environment, as the early 1940s was the only other period where 10-year Treasuries fell to the 2% range.**

Exhibit 2

10-Year Treasury Yields at the Start of Each Year, 1871-2016



The PMT formula makes clear that sustainable withdrawal rates are intricately related to the returns provided by the underlying investment portfolio. With sequence of returns risk, the returns experienced in early retirement will weigh disproportionately on the final outcome.

Current market conditions are much more relevant than historical averages. Past historical success rates are not the type of information that current and prospective retirees need for making withdrawal rate decisions.

While the original Trinity study concluded that the 4% rule has a 95% chance for success, that only means **the 4% rule succeeded in 95% of the rolling historical thirty-year periods.** New retirees today should not count on the same 95% chance that the 4% rule will work for them.

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