

# Bickford Investment Management Services

*Intelligent Investing*

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## Portfolio Withdrawal Rates in Retirement

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How much can I afford spend in retirement? What should my investment portfolio look like? When retired – or planning to retire – these are two of the most important questions people ask. How can we answer them? First, we can analyze U.S. historical data and, second, we can consider valuation ratios in order to provide us with a better way to select both a portfolio and a retirement spending rate.

Many investors have used the rule of thumb that a retired person should not spend more than about 4% of their investment holdings each year during retirement. However, the dollars represented by this vary significantly depending upon current market values and don't take into account how long the retiree expects to live or what their asset allocation looks like.

### The Investment Portfolio

The most classic investment portfolio is often described as containing 60% stocks and 40% bonds. This is a reasonable choice for many investors, but is certainly not right for all. Stocks are generally included in a portfolio because of their superior long-term rate of return and protection against inflation. They are quite risky though and on occasion can lose 50% of their value or more. From 1926 when our most reliable data begins through 2009, the U.S. stock market has provided a compound annual return of about 9.4% per year. This is noticeably better than consumer price inflation at 3.1% per year over the same period.

Bonds and cash are generally included in a portfolio to reduce volatility risk. Cash and short-term bonds by comparison are much less risky than stocks but have provided a compound return that is only very similar to the rate of inflation.

How should an investor choose the right stock/bond ratio? We recommend an examination of the historical record combined with their personal risk tolerance and ability to sustain losses. Many investors learned during the 2007-2009 bear market that their risk tolerance was not as high as they had previously thought while other individuals found that they could stick to their plans despite plunging prices, yet still sleep at night.

### A Look at History

For various stock/bond ratios and retirement lengths, how much have we been able to spend historically without running out of money? We can now analyze various retirement periods with different investment portfolios over time. Our guidelines are:

- 1) We would like to determine our maximum retirement spending rate for various portfolios and retirement time spans.
- 2) We set our spending the first year and increase it along with inflation each year.
- 3) Our stock market investments are broadly diversified to reduce risk. For this analysis, we use the U.S. total stock market.
- 4) Five-year U.S. treasury bonds are used for the fixed-income portion due to their relatively low volatility and data availability.
- 5) The investment portfolio is annually rebalanced back to the chosen stock/bond ratio.

We currently have return data for five-year US treasury bonds and the US total stock market from 1926 through 2009. With this, we can analyze a number of simulated retirement lengths ranging from 10 to 40 years and determine the maximum initial spending rate that would have survived the retirement period without the investor running out of money.

The investor must keep in mind that this information represents U.S. history over a certain time period. Future investment returns and inflation may be quite different than those of the past. The results will be different if constructed from international country data or from other investment portfolios. The investor must consider this context and plan to adjust their spending over time to reflect their experienced reality. Figure 1 below shows the maximum historical spending rate for various retirement lengths given the guidelines above.

## Maximum Historical Spending Rate per year by Stock Percentage

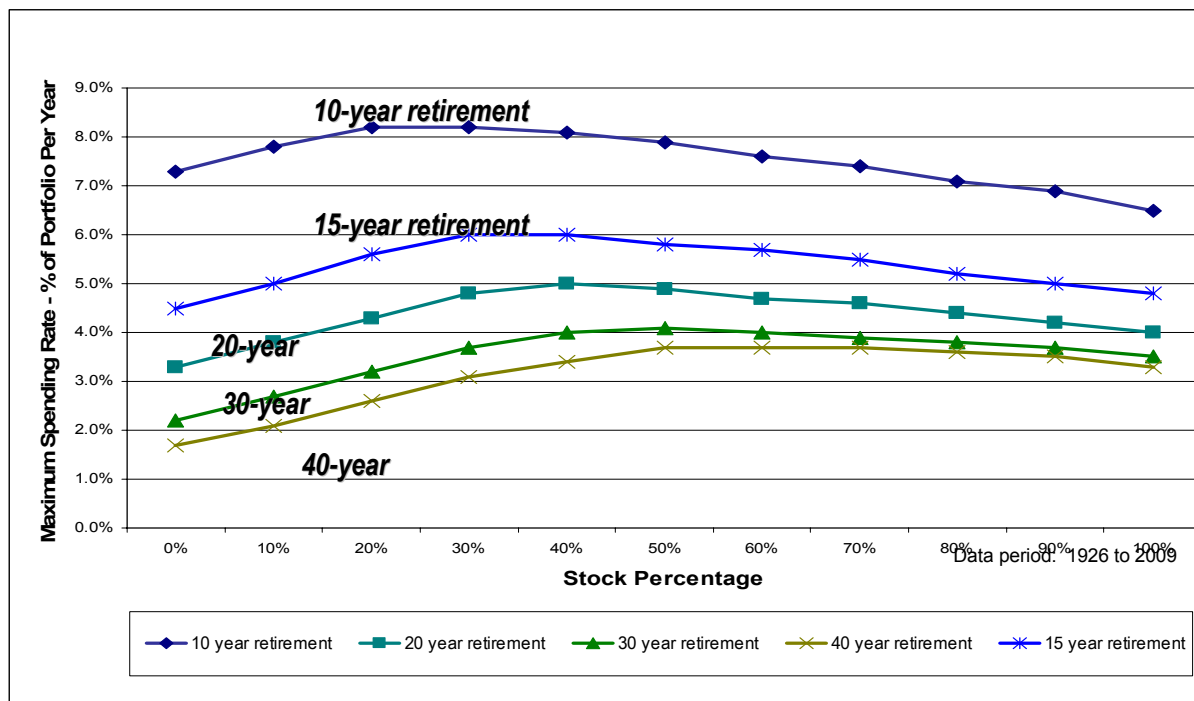


Figure 1.

From Figure 1, we can see that for shorter retirement horizons, we are least likely to run out of money with a relatively small percentage of equities. This is because stock market risk is particularly harsh on the high spending rates associated with a short retirement period. For long retirement horizons, a larger percentage of stocks is mathematically beneficial in protecting an investor from the effects of inflation.

Figure 1 is helpful in choosing an investment portfolio that would best weather a *worst-case* scenario over the time period studied. If we were to consider instead investment portfolios for the *average* case, we would find that more equities have provided a better *average* retirement due to their greater average return.

### Stock Market Price and its Effect on Retirement Portfolios

Figure 2 below is from Yale professor Robert Shiller and shows the Cyclically Adjusted Price-to-Earnings Ratio of the US stock market dating back to 1881. In this chart, earnings are averaged over the previous 10 years to adjust for temporary boom and bust cycles. This averaged P/E ratio (referred to as PE10) provides a good gauge of equity prices and sustainable earning power of the companies represented. The current P/E ratio (not averaged) is not useful for determining the relative price level of stocks due to its extreme sensitivity to the immediate economic climate.

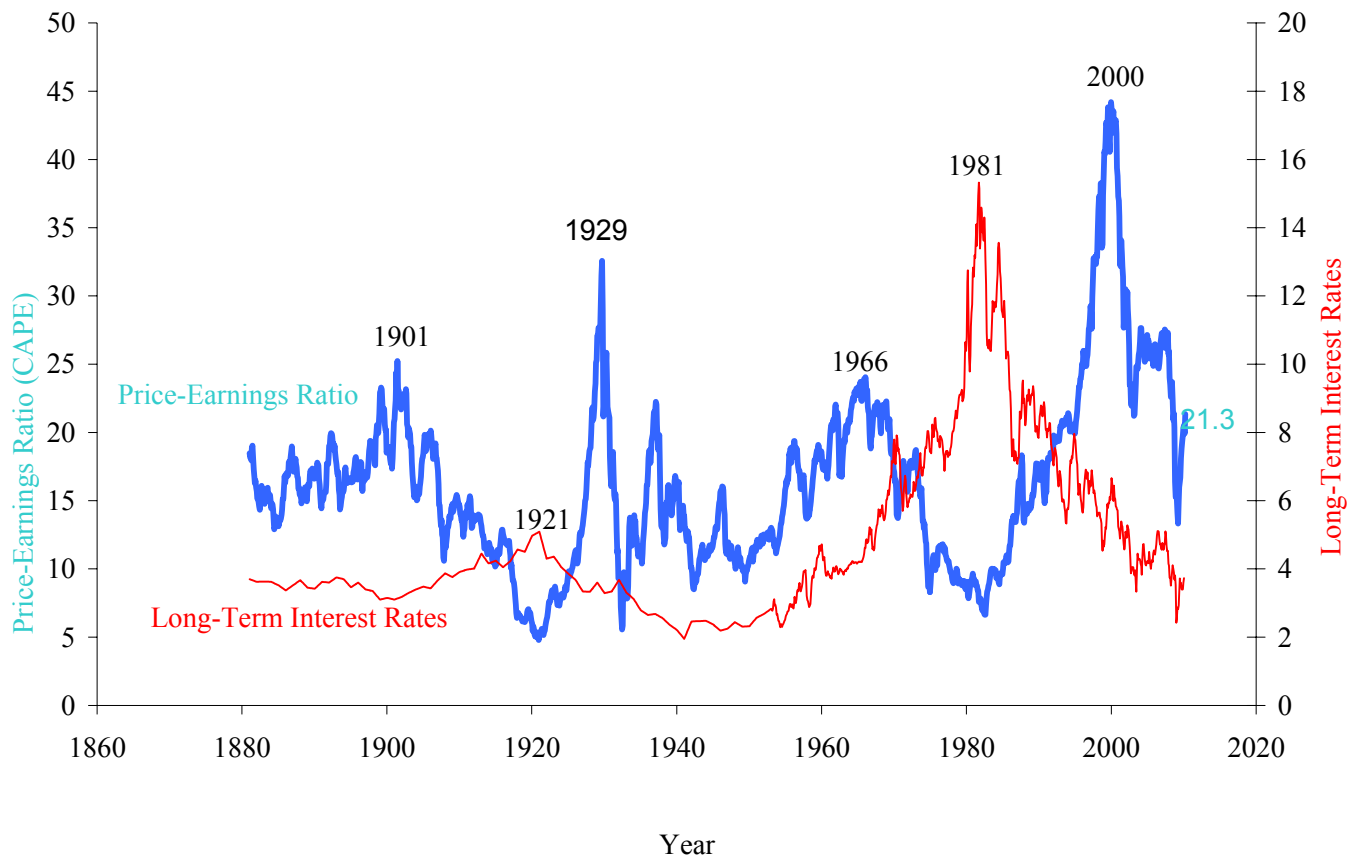


Figure 2.

When PE10 is high, future returns have tended to be relatively poor and when PE10 is low, they have tended to be high. This can clearly be seen in Figure 3 below. Note that all of the best 10-year real returns occurred when the starting PE10 level was low and all of the worst 10-year real returns have occurred when the starting PE10 level was high.

## PE10 Versus 10-Year Real Return

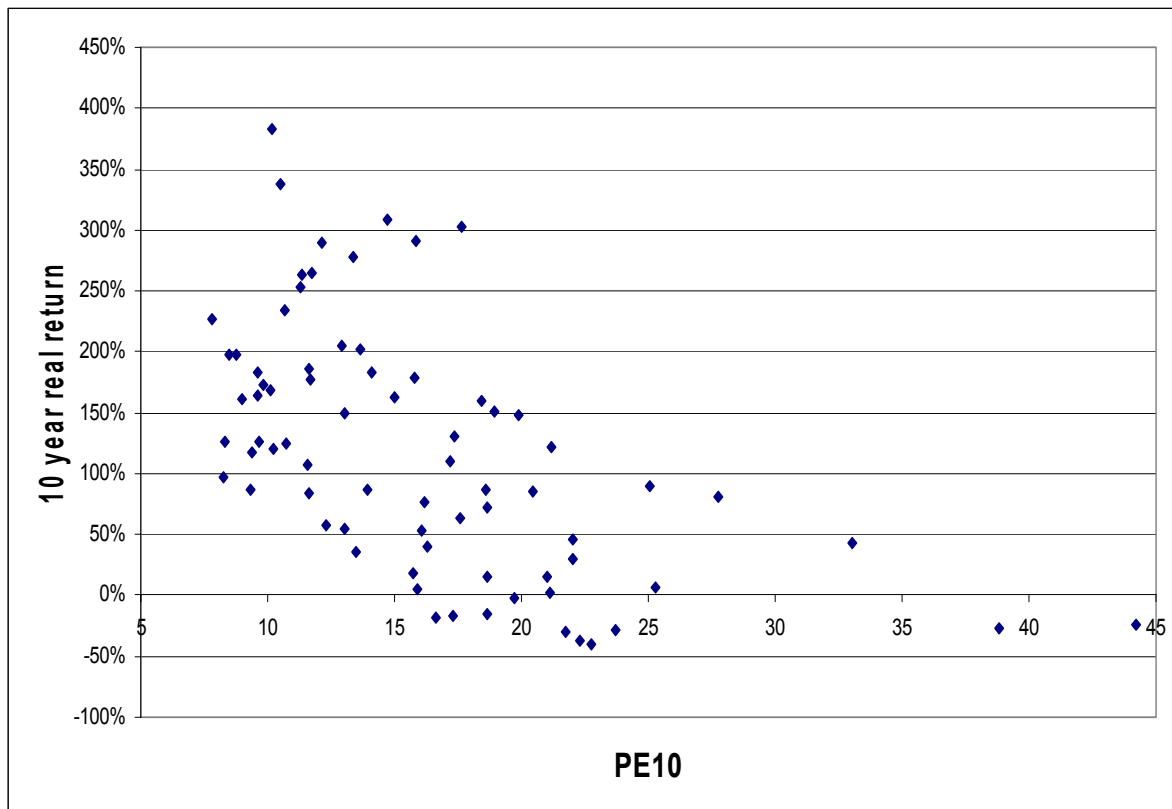


Figure 3.

It would be nice to be able to re-draw our spending rate graph to include different starting PE10 levels, but there simply isn't enough historical data to do that. An investor should bear in mind that if PE10 is higher than average, their future investment return is likely to be low. As of the end of January 2009, the Dow Jones Industrial Average was at 10,069 and PE10 was 19.6. While PE10 is higher than our historical average of 16.35, it is not excessively high indicating the likelihood of reasonable but not exceptional future stock market returns.

### Answering the Key Questions

Let's return to our two initial questions: How much can I spend and what should my portfolio look like.

The first chart above shows historically safe initial spending rates for various retirement portfolios and retirement durations. These assume a broadly-diversified stock portfolio combined with relatively short-term bonds. An investor can find mathematically attractive stock/bond ratios for various anticipated retirement lengths from this chart. An investor must then consider his or her personal risk tolerance level. A buy and hold strategy can work quite well for investors with a compatible temperament. Many investors however cannot sleep well through significant stock-market gyrations and are likely to abandon a buy and hold strategy at low prices.

We can see from the second figure that future stock returns are significantly dependent on the current price level of stocks as represented by PE10. Investors can and should adjust their expectations for future returns based on the current level of PE10, particularly when it is higher than the historical average of 16.3.

Unknown future stock market performance, interest rates, and inflation mean that all investment portfolios are risky in one or more ways. Investors should make intelligent choices while remaining prepared to adjust their future spending to reflect their future reality.

*Bickford Investment Management Services provides clients with intelligent investment portfolio construction and management on a fee-only (no commission) basis at less than half the fees charged by the average fee-only investment advisor.*

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