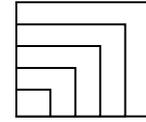


Realistic Financial Projections



**Wenzel
Analytics
Inc**

Financial Plans

The average couple at age 62 will have at least one of them living another thirty years. That means half will have one of them living longer than that. Most Boomers will not be financially prepared for retirement.

There is an old myth that one should move more into bonds and “safer” investments as one gets older. A lot of people will not have enough, no matter how they invest because they haven’t been investing enough. A lot of other people will have far more than the habits of their lifestyle will ever permit them to consume. Most of their assets will go to heirs, charities or estate taxes; security for old age has nothing to do with an appropriate investment strategy for a major portion of their wealth.

In planning for the future, protecting the current nest egg is not nearly as important as the degree of certainty that one will have the required or desired assets as given time points in the future. In going from my house to your house, to go straight “as the crow flies” is not nearly as important or practical as the easiest way to get there with the greatest degree of certainty. In investing, the variation of returns along the way is not nearly as important as the degree of certainty in reaching the destination.

Too many financial projections are built using a constant annual rate of return. While equities might have returned an average of 10% annually over the last many years, it is almost a certainty that it will not return 10% in each of the years going forward. The market returns will vary widely, even more widely than the normal statistical distribution of a bell curve. This paper presents a way to look at the probabilities of future returns.

Most people either under-plan or over-plan for their financial future. The under-planners don’t have a clue. They procrastinate and say that they just don’t like doing that kind of thing. The over-planners often have plans with more complexity and unknown assumptions than anyone can understand. The over-planners, often with professional help, try to be to overly precise in predicting an unknowable future.

Especially with the uncertainty surrounding both governmental and private pension programs, it is very important for everyone to have a general but realistic picture of different probabilities for their financial future.

I believe that the most common errors are:

1. Not having any kind of financial plan that covers multiple years and includes variables such as varying income, investment returns, inflation and expenses.
2. Trying to plan with too much detail and too precisely for the future, and then consequently being anxious when things do not unfold that way.
3. Leaving the planning to someone else and not having a thoroughly understood plan that fits.
4. Doing plans with fixed average annual rates for things such as inflation and investment returns. The concepts of risk and variation need to be taken beyond abstract numbers, fear and anxiety to some concrete pictures that can be understood.

I recently had someone 86 years old who wanted to be sure she had enough money for the rest of her life, did not like risk, and was being encouraged by her daughter to not have all of her investable assets sitting in cash at the bank. So what is the probability that 3% interest will do better after her modest expenses for the next 14 years than she would do in the stock market?

The results were so interesting that I changed the numbers and decided to present a generic set of findings to stimulate your investigation. My Excel template is available for your use, or I would be happy to work with you to incorporate your numbers.

An alternative to mutual funds.

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Setting up a Random Selection of Returns from Prior Years

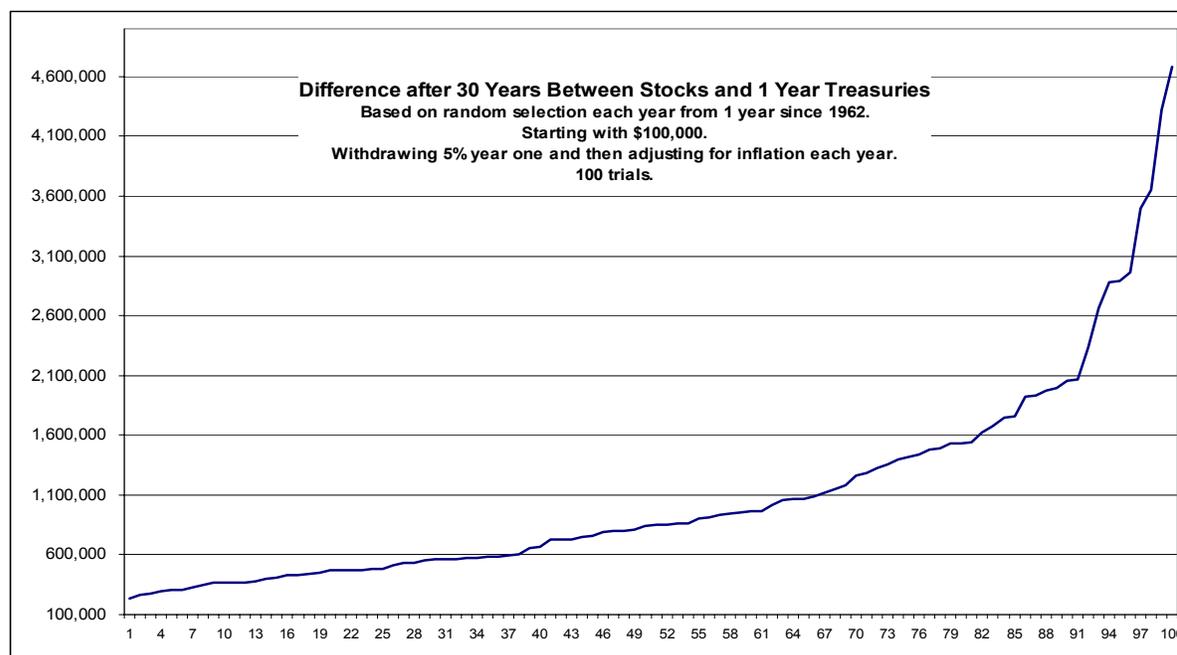
In order to compare probable interest returns to equity returns, I created my own Monte Carlo type simulation on a spreadsheet. On the Internet I found data since 1962 for annual market returns (Composite New York Stock Exchange), inflation (Consumer Price Index), and short-term interest rates (average of one-year Treasuries during each year). Using the random-between function in Excel, I selected at random one of the last 43 years for each of the next thirty years. For each of the future years, the respective short-term interest, stock market return and inflation rate were applied from the randomly selected year of the past 43 years. Granted we don't know that the next thirty years will be anything like the last 43 years, but that is a starting point. It is more realistic than a Monte Carlo simulation which is built on assumptions of a normal distribution, and easier to understand.

Each investor will do better or worse than the market average used in these calculations. Wenzel Analytics is having returns about three times the market return.

Results

In the charts that follow, five percent of an initial \$100,000 was taken as a living allowance withdrawal prior to the beginning of the year. That amount was increased each year according to the inflation rate from the randomly selected year. I then set up the spreadsheet to run the random thirty-year simulation one hundred times, and sorted the results. Chart 1 shows the dollar difference after thirty years between investing in the stock market (dividends were not included, which are normally 43% of stock market returns) and investing in one-year Treasuries.

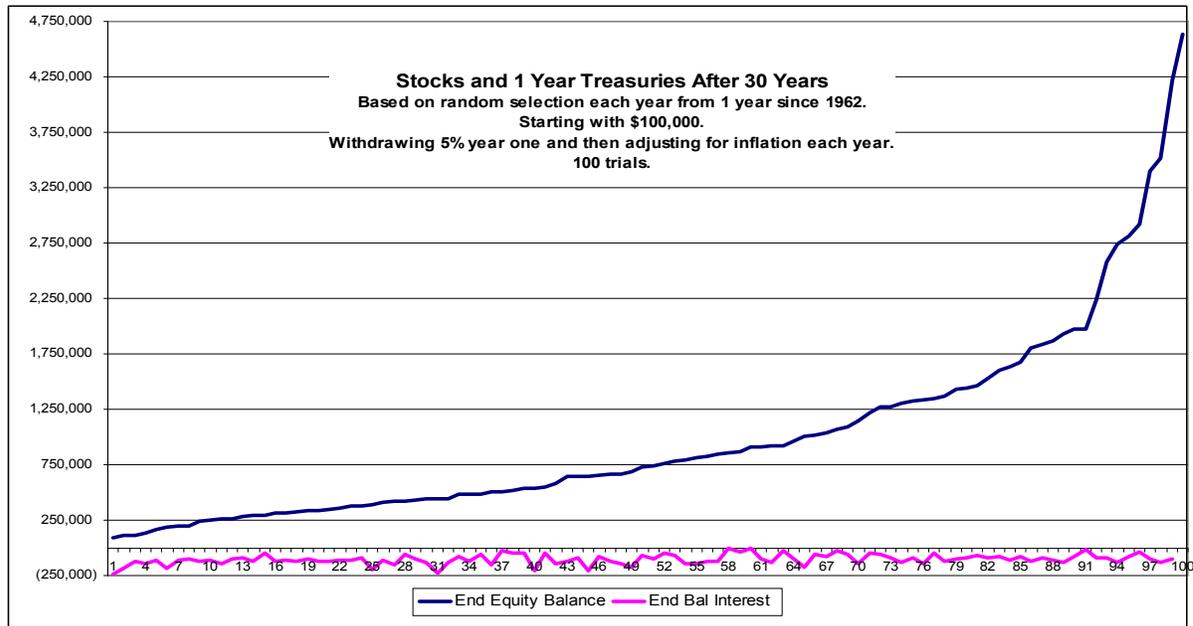
Chart 1. Thirty Years, Difference



Market returns for the thirty years exceeded interest returns for all of the 100 trials. The minimum difference was that the market exceeded the Treasuries by \$235,000. The maximum difference was \$4,678,000. Half the trials beat the interest returns by \$844,000 or more. Of the 3,000 years in the simulation (30 times 100), the Treasuries beat the market 5% of the time. I was surprised at the variation. Calculating with an average rate of return definitely does not give an realistic picture.

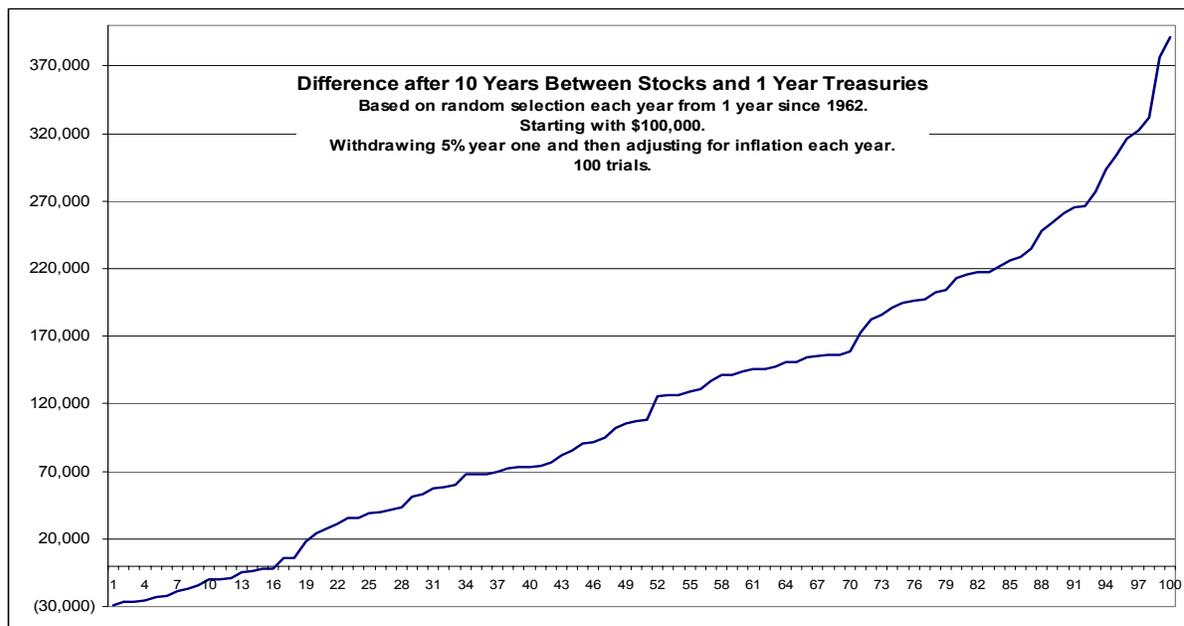
Instead of showing the difference, Chart 2 shows an ascending sort of the ending values from equities, and the corresponding ending value from Treasuries for the same year. The minimum end value for equities was \$95,000 and maximum was \$4,631,000. Of the 100 trials, the best outcome from Treasuries, given the initial 5% withdrawal and consequent withdrawals adjusted for inflation, was a negative -\$2,134. The worst outcome was a negative -\$235,000. If one needed the initial 5% withdrawal rate to live on, which investment has the most risk?

Chart 2. Thirty Years, Equities and Treasuries



If you were playing with the spreadsheet, you could obviously adapt the numbers to fit your interest and situation. Your next question might be, “What are the probable outcomes after ten years?”

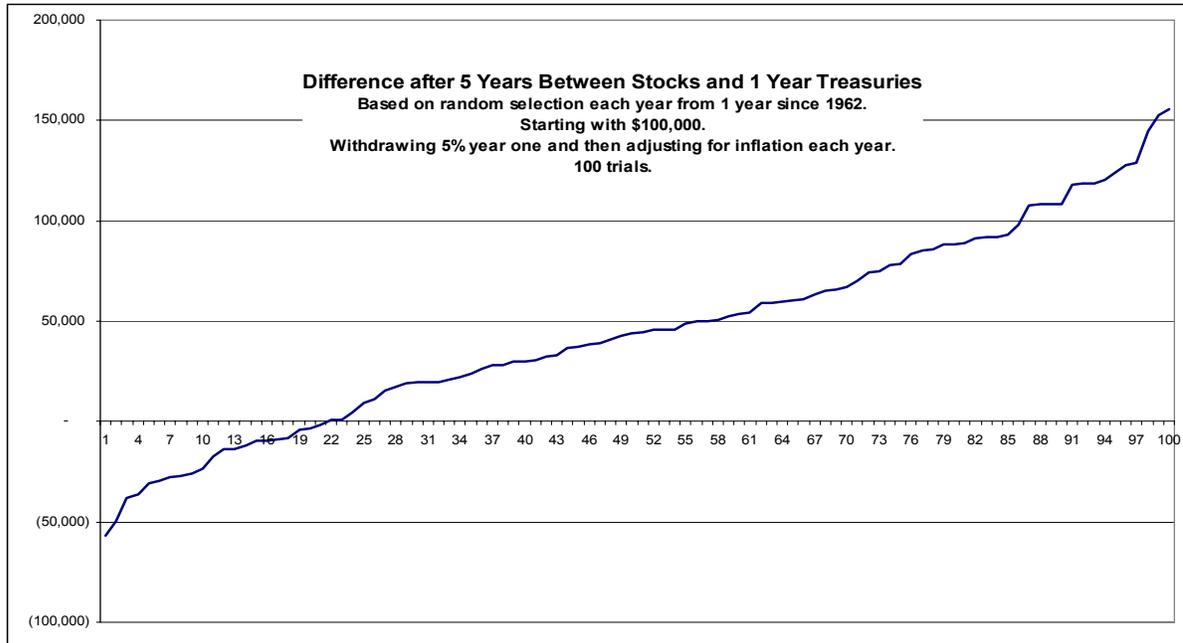
Chart 3. Ten Years, Difference



When looking at only a ten year time-span, in 16 out of 100 trials interest from Treasuries did better than the market. The range was from Treasuries exceeding the market after the specified withdrawals by \$29,000 to the market exceeding Treasuries by \$391,000. The median with half the trials on either side was a market advantage of \$107,400.

For only five years, in 21 out of 100 trials interest from Treasuries did better than the market. The reliability of equities surpassing Treasuries is less as the time period or time diversification lessons. The range was from Treasuries exceeding the market after the specified withdrawals by \$57,000 to the market exceeding Treasuries by \$156,000. The median for half the trials on either side was \$44,000. With the odds at roughly 80 to 20, which investment has the greater risk?

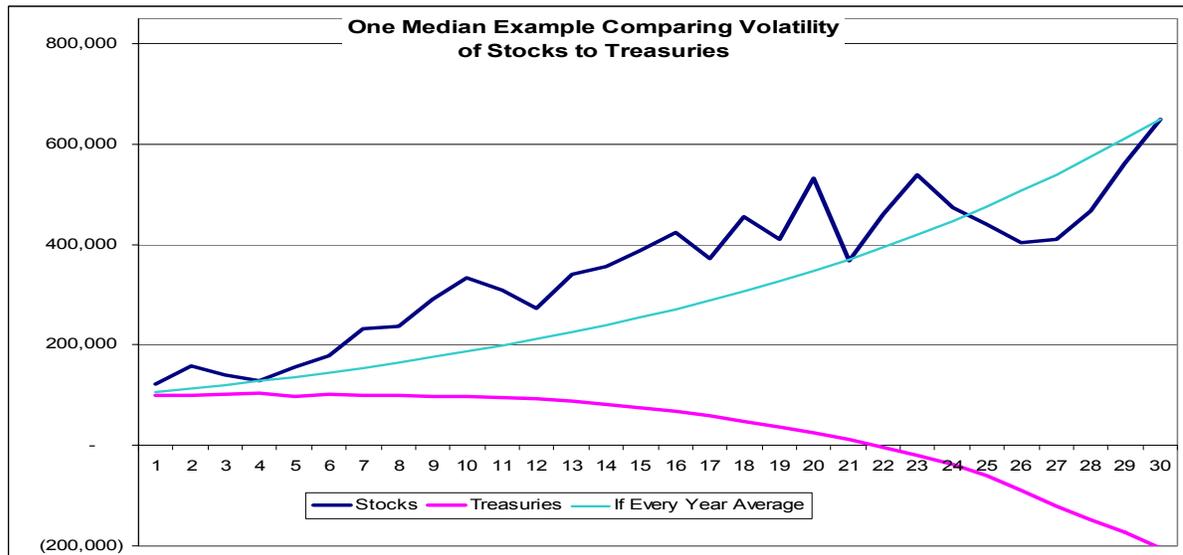
Chart 4. Five Years, Difference



Returns Along the Way

All of the above charts show the end result after five, ten or thirty years. They don't show anything about the ups and downs on the way to the end result, which is very different than if one took an average rate of return and applied it progressively each year. As you might expect from the charts above, each trial or random selection of returns from previous years is going to look very different. For Chart 5 I selected one that produced a result near the median. One cannot expect nice even returns such as represented by the teal-colored line. Nor can one expect to end up at either the median or the average.

Chart 5. Median Example.



Conclusion

Investing is a matter of probabilities. If one doesn't have a good understanding of what those probabilities look like in concrete terms, one is likely to be surprised one way or the other. Given the nature of probabilities, it is possible to have considerable volatility (risk) on the way towards a goal, but still have relative confidence in the probabilities that given sufficient time, the volatile results will exceed the consistent fixed returns.