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The Long and Short (Runs) of Investing in Equities

by Peter Yoo

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Many people have re-evaluated the share of equities in their portfolios as a result of recent stock market fluctuations. In their deliberations, most undoubtedly encountered this advice: Invest in equities for the long term and ignore the short-run fluctuations of the stock market because stocks offer a higher rate of return than

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many other types of investments. Many have heard a corollary: Investors with short investment horizons should lower their exposure to the volatility of equities.

Historically, holding an investment in equities for a long horizon has lowered the risk of losing money. Monthly total returns (returns with dividends reinvested) on Standard & Poor's 500 Composite Index (S&P 500) averaged 0.8 percent and had a standard deviation of 4.1 percent between 1871 and 1998. So an investment in the S & P 500 held for one month would have lost money nearly 40 percent of the time, but one held for 10 years would have lost money less than 2 percent of the time.

However, as noted by Paul Samuelson 35 years ago, lengthening the investment horizon does not reduce all of the uncertainties associated with equity investments. Although a long investment horizon decreases the probability of losing money, it does not reduce the variability of an investor's portfolio value. Rather, a longer horizon increases the range of probable values of her wealth. Consider a simple game where a player wins one dollar if a coin comes up heads, and loses a dollar if it comes up tails.

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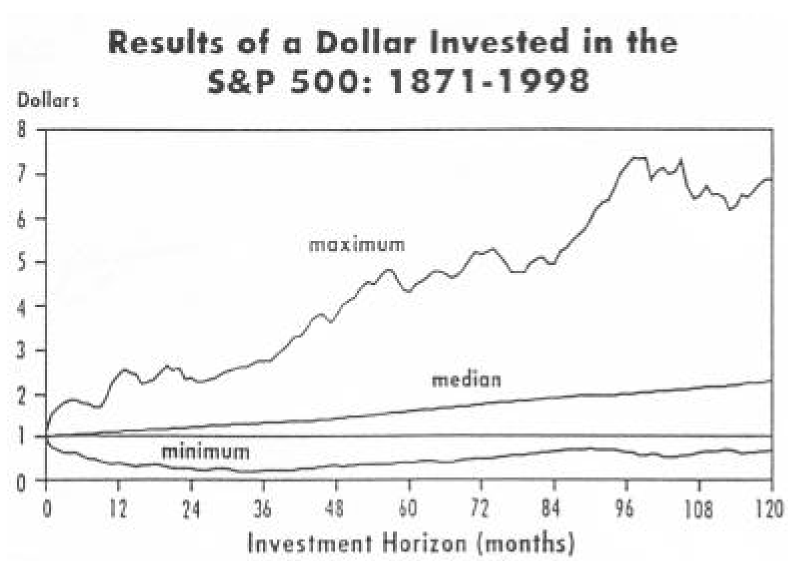
As an inducement, the coin is weighted so that the probability of heads is 0.6. If the coin is flipped once the player will lose one dollar with probability 0.4. But if she plays the game 100 times, the probability of a net loss falls below 0.02, largely due to the expected gain from each toss. Yet, the range of probable outcomes does not shrink; it increases. The player who tosses the coin once expects to win \$0.20 and may win or lose a dollar. If she tosses it 100 times, she expects to win \$20, may win or lose up to \$100, and will win less than \$15, or more than \$25, nearly a third of the time.

Investing in the stock market has similar implications. The chart below shows the maximum, median and minimum results of a dollar invested in an arbitrary month between 1871 and 1998 for various investment horizons. It clearly shows that holding equities for a long horizon rarely produced a loss, but it did not shrink the range of probable outcomes.

Instead, the range of investment results grew with the investment horizon. So, investing for the long term may reduce one uncertainty associated with equities, but it does not reduce all of them.

Peter Yoo is an editor for National Economic Trends, located in St. Louis, Missouri.



SOURCE: Author's calculations based on data from Robert Shiller