

Volatility vs. Investment Success Rates

While maximizing return is often theorized as the proper investment objective, the impact losses can have on an investor's risk tolerance, time horizon, and ability to maintain target-spending levels can render it a moot objective in the real world. Instead, maximizing the probability of earning a minimum required return may be more important, especially when spending needs are supported by portfolio returns. This requires knowledge of an investment strategy's distribution of returns over finite time periods (i.e. volatility of return), not just its average return.

How much does mean return need to rise to offset a higher standard deviation, assuming one's goal is to maintain fixed odds of earning a target return over a finite time period? We used a Monte Carlo simulation to determine the geometric mean return needed from a strategy to maintain a fixed probability of earning an 8% (or higher) return over any 60-month period as volatility/standard deviation increased. An 8% (or higher) return was chosen as a successful return target since it would allow most investors to cover taxes, inflation and needed spend rates while maintaining corpus. The results appear below:

Rate of Return Needed to Maintain Fixed Odds of Earning Over 8%¹

<u>Annual Standard Deviation</u>	<u>% Odds Of Success Over 5 Year Periods</u>				
	<u>60%</u>	<u>70%</u>	<u>80%</u>	<u>90%</u>	<u>95%</u>
±21.3%	12.8% (Return)	15.1%	17.7%	21.5%	24.8%
±16.0%	11.4	13.1	15.3	18.1	20.3
±10.7%	10.2	11.4	12.7	14.7	16.4

Key Observation #1 – *The return from a high-volatility approach must be significantly higher than from a low-volatility approach to maintain the same odds of earning >8% over a 60-month period.* For example, a strategy with 11.4% return and ±10.7% standard deviation has the same 70% odds of earning >8% return over a 5-year period as an approach with 15.1% return and ±21.3% standard deviation.

Key Observation #2 – *The more important reaching the target return objective is, the more important lowering volatility becomes.* For example, to increase the odds of success from 60% to 95%, a low-volatility approach with a ±10.7% standard deviation must increase its return from 10.2% to 16.4%, an increase of 6.2% (or 61%). In contrast, the return of an approach with a ±21.3% standard deviation must increase from 12.8% to 24.8%, a 12% increase (almost twice as much as the low-volatility approach). *Since it is nearly impossible to find investment approaches offering sustainable returns near 20%, investors wanting high odds of earning 8% over 5-year periods have little alternative but to reduce volatility.*

The above odds play out in real life - not just in simulations. For example, as shown on the attached graph², the S&P 500 provided an 8% or higher annualized return in 55% of 274 rolling 60-month periods since 1986, and indices with the lowest volatility generally provided the higher odds of success.

Conclusion

Since volatility plays a significant role in determining investor success rates, and since excess returns/alphas tend to be low relative to standard deviations while standard deviations are large relative to mean returns, investors should find volatility minimization to be a more reliable path in achieving their investment objectives than return maximization (as long as mean returns are market-like). A less volatile return distribution should appeal to individuals and endowments who cannot sustain long periods of poor absolute returns, whether due to fixed spending needs, retirement objectives or psychological intolerance for risk.

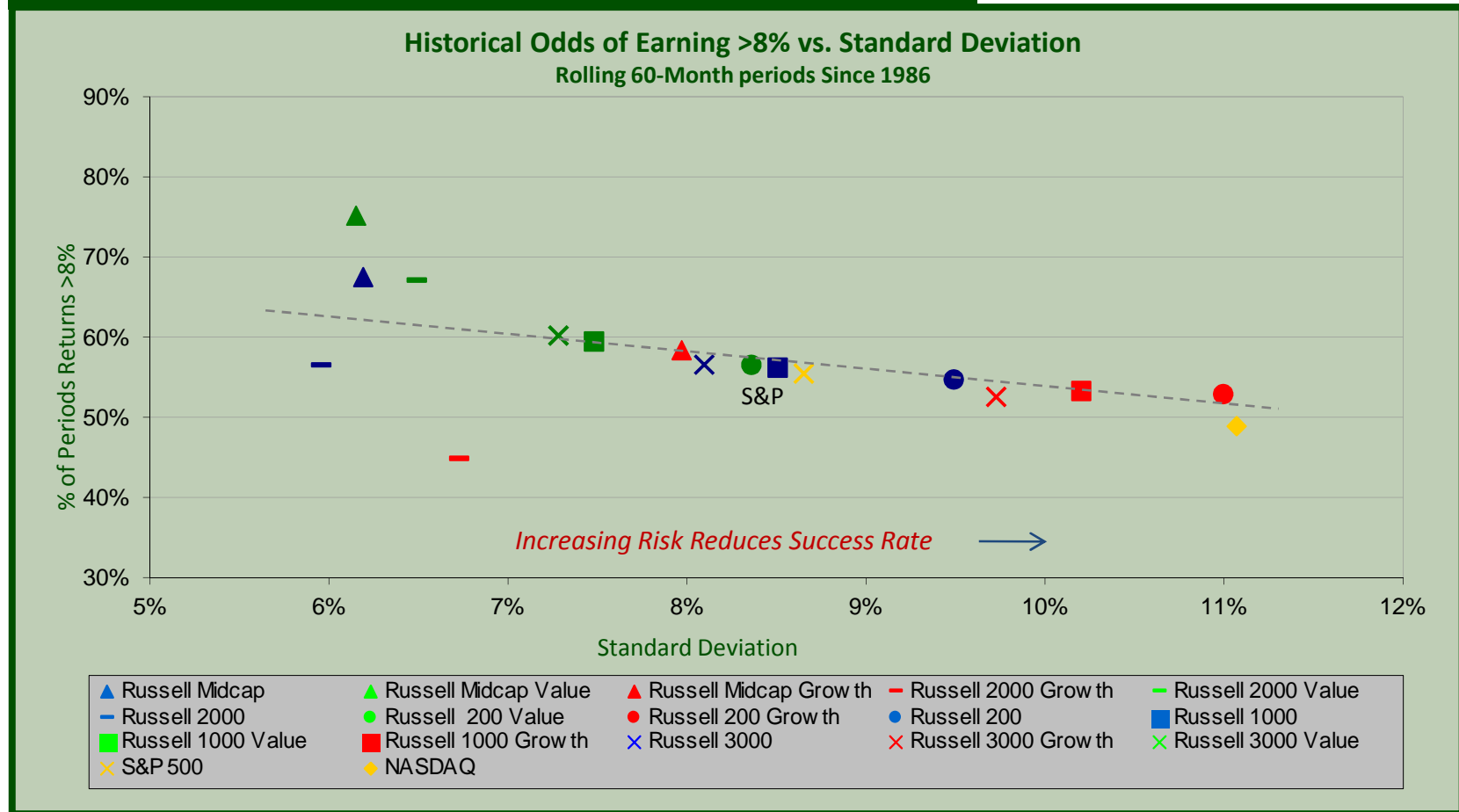
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¹ *The simulation results were determined using the AASim Monte Carlo program from FinanceWare.com by iteratively altering the geometric mean return until a given probability of success was reached. All simulation results are geometric means and exclude fees for illustrative purposes. Standard Deviation is a statistical measure describing the degree of variability around an average. Assuming a normal distribution, two-thirds of observations fall within the historical mean, ± 1 standard deviation.*

² *The graph illustrates the historical frequency that each index provided an annualized return of 8% or higher over 274 rolling 60-month periods from 1986 through September 30, 2013. All index returns include reinvestment of dividends, and exclude fees and commission costs. Results are historical, and do not imply future rates of returns or volatility for EIC or indices, which may be materially different from the past. See above for standard deviation definition.*

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Higher Risk/Volatility Has Reduced Success Rate....



There have been 274 rolling 60-month periods from EIC's inception on January 1, 1986 through September 30, 2013. Index returns are before fees and commissions. All returns include reinvestment of dividends. Standard Deviation is a statistical measure describing the degree of variability around an average. Results are historical and do not imply future rates of return or volatility, which may be materially different from the past and from one another. Index descriptions can be found at the end of the book.