Passive Capital Management

Making the Case for Fixed Income – Portfolio Volatility and "The Flaw of Averages"

The Conclusion

1) Over time, stocks generally offer higher average returns than the fixed income asset class.

2) Depending upon the volatility, higher average returns do not necessarily generate higher terminal portfolio values.

3) The fixed income asset class can be an effective tool to reduce the volatility of your portfolio and enhance risk-adjusted returns.

Risk Matters

While some aggressive investors are inherently opposed to having any exposure to the fixed income asset class, I believe there is a strong case to be made that it belongs in all portfolios. This opinion is not based upon my guesses, hunches or predictions; rather, it is based upon historical data[1] and simple, yet counter-intuitive, math. It is important to understand that *a higher average return does not necessarily generate a higher portfolio value and it is important to manage risk.*

Since 1927, the S&P 500 index has generated a 10.4% annualized return with a 16.8% annualized standard deviation of returns (a measure of volatility and risk). By contrast, Five-Year U.S. Treasury Notes have generated a 5.3% annualized return with a 4.4% annualized standard deviation of returns. While this fixed income category did not generate the same level of returns as domestic large company stocks, the returns that were generated came with much lower volatility and risk. Additionally, since 1927, the returns from this fixed income category had a very low correlation with the returns from the S&P 500 index. This low correlation tells us that the two asset classes behave differently from one another and do not always go up and down at the same time. This data implies that:

1) the fixed income asset class can improve a portfolio by providing additional diversification and lowering overall portfolio risk; and

2) an investor should not own fixed income to bolster returns; fixed income should be used to dampen the volatility of the equity markets and mitigate risk.

While many investors only consider and analyze their *returns,* it is critical that portfolio *risk* also be analyzed and managed such that risk-adjusted returns are maximized. Not all returns are created equal and investors should only take additional risk if it is reasonable to assume that they will be compensated for doing so. A 5% return might be generated by owning high-quality bonds or it could be generated by buying a company on the verge of bankruptcy, working long hours to ensure profitability, and then ultimately selling the company. Are the 5% returns in those two examples the same? Of course not. Risk matters.

"The Flaw of Averages"

While future asset class returns are unpredictable, the rules of arithmetic will undoubtedly endure. Table 1 below quantifies why volatility matters and how it can impact the value of a $100,000 portfolio at the end of a hypothetical two-year investment period. This example also illustrates what I call "The Flaw of Averages"; data can be helpful but it can also be misleading if not properly understood. Average portfolio returns are no different. *A higher average return does not necessarily generate a higher terminal portfolio value.*

[1] *Historical data from Ibbotson Associates, Standard & Poor's, and Dimensional Fund Advisors.*

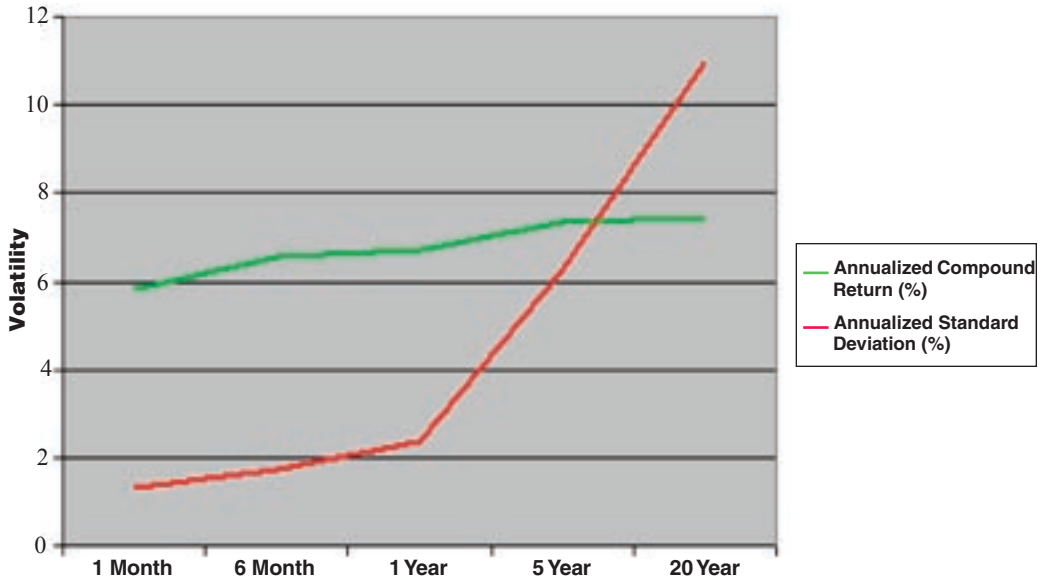
Table 1: Volatility Matters – The Impact on a $100,000 Portfolio

	Yr 1 Return	Yr 2 Return	Average	Value at End of Yr 2
Portfolio 1	+27%	-9%	+9%	$115,570
Portfolio 2	+15%	+1%	+8%	$116,150
Portfolio 3	+13%	+3%	+8%	$116,390

The portfolio with the *highest average return* and *highest volatility* (Portfolio 1) actually has the *lowest ending value* after two years and the portfolios with only an 8% average return, but *lower volatility*, have the *highest ending values*. Portfolio 3 has the lowest volatility and, in this example, has the highest ending value. While this is a very simple example, it shows that volatility and variability matter. *The fixed income asset class can be a very effective tool to help manage and mitigate the overall volatility of your portfolio and can help generate improved risk-adjusted returns. This is why even an aggressive investor, in my opinion, should care about the fixed income asset class.* It may be prudent to sacrifice a little average return if the volatility of your overall portfolio (standard deviation of returns) can be reduced.

Additionally, not all fixed income categories are created equal. Corporate bonds, high yield bonds, emerging market bonds, and long-term U.S. Treasuries all have unique risk and return characteristics and, in my opinion, are not the best means to mitigate risk. Passive Capital Management uses short-duration, high-quality U.S. government bonds to manage portfolio risk. Chart 1 below illustrates the reason why. The horizontal axis represents the duration of various fixed income securities while the vertical axis represents the volatility of returns. As you move to the right along the horizontal axis and increase the duration, you will notice that the standard deviation of returns (red line) increases meaningfully at about 5 years. In sum, taking additional maturity risk or credit risk might marginally improve yields (green line) but those yields come at a high cost (much higher annualized standard deviation of returns). Once again, it is critical that investors evaluate the risk, not just the expected return, of an investment.

Chart 1: Analyzing the Fixed Income Risk/Return Tradeoff



Maturity	1 Month T-bills	6 Month T-bills	1 Year T-notes	5 Year T-notes	20 Year Govt Bonds
Annualized Compound Return (%)	5.81	6.55	6.73	7.34	7.46
Annualized Standard Deviation (%)	1.33	1.73	2.35	6.23	10.93

Duration

Source: Dimensional Fund Advisors. Quarterly data from 1964 to 2006.

In conclusion, don't let your emotions get in the way of maximizing risk-adjusted returns. It is important to remember that asset classes are simply tools that enable you to accomplish your investment goals and objectives.

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