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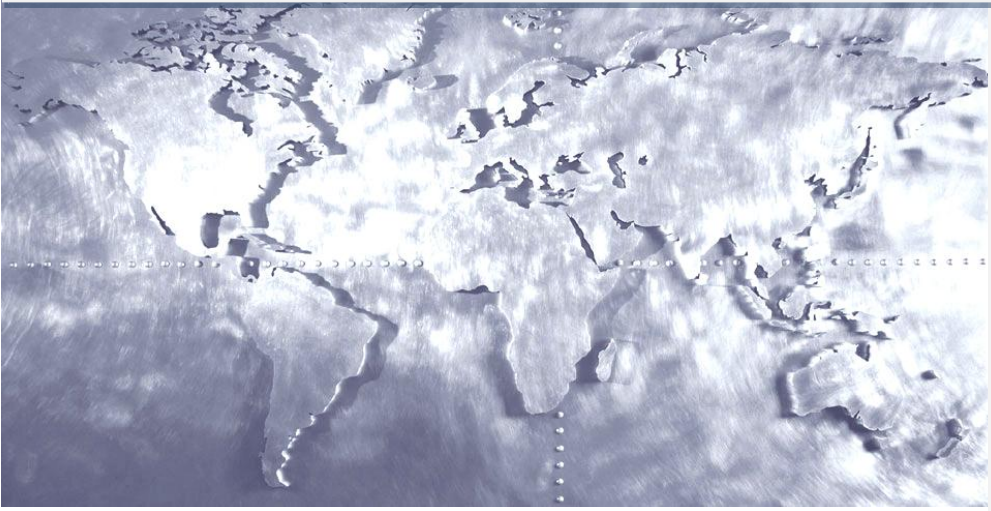
Windham Investment Review



Rules of Prudence for Individual Investors

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Rules of Prudence for Individual Investors[1]

The proverbial silver lining in this extraordinarily dark financial cloud is that investors have a new found appreciation for prudent investment practices. We would like to seize this opportunity by reviewing three rules of prudent investing – the ones we believe are most important: 1) diversify, 2) invest passively, and 3) avoid taxes.

Rule 1: Diversify

Although most investors accept the wisdom of diversification, they do so inefficiently. The typical investor relies on domestic equities to drive portfolio growth. This investor will, therefore, seek to diversify this exposure by including assets believed to have low correlations with domestic equities. Yet the correlations, as typically measured over the full sample of returns, often belie an asset's diversification properties in market environments when diversification is most needed. Consider, for example, the correlation of U.S. stocks and foreign stocks. When both markets produce returns greater than one standard deviation above their mean, their correlation equals -17%. When both markets produce returns greater than one standard deviation below their mean, their correlation rises to +76%.[2]

This pattern is the opposite of what we need. The assets chosen to complement a portfolio's main engine of growth should diversify this asset when it performs poorly and move in tandem with it when it performs well. The evidence shows that most asset pairs have significantly asymmetric downside and upside correlations. Therefore, full sample correlations reveal virtually nothing about the diversification properties of assets during periods when investors need diversification. Investors should instead rely

[1] The arguments put forth here are summarized from an essay entitled, "Rules of Prudence for Individual Investors," *Economics and Portfolio Strategy,* February 1, 2009.

[2] These correlations are based on monthly returns from the period starting in January 1970 and ending in February 2008.

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on conditional correlations to construct portfolios that provide diversification in down markets and unification in up markets.

Rule 2: Invest Passively

Most actively managed funds underperform their passive benchmarks, especially net of expenses.[3] As discomforting as this should be to those who seek alpha, the reality is much worse than previously reported. A new study by Laurent Barras, Olivier Scaillet, and Russ Wermer (BSW), called "False Discoveries in Mutual Fund Performance: Measuring Luck in Estimated Alphas,"[4] shows that only 0.6% of managers produce alpha as a consequence of skill. Most of the alphas that show up in mutual fund performance data reflect luck as opposed to skill. BSW examined the returns of 2,076 U.S. mutual funds. They took into account the following fact. In a universe in which alpha does not exist, but noise does, some fraction of observed alphas will nonetheless appear to be significantly positive. If, for example, we require 95% confidence to declare an outcome a true positive alpha, even in a universe without any true alphas, 5% of the observed alphas will appear as true positive alphas. After reducing the total fraction of observed positive alphas by the fraction that was really due to luck, BSW made the following discoveries[5]:

- 75% of funds had zero alphas, which means that their active returns were just sufficient to offset their costs.
- The number of skilled funds, in which alpha exceeded costs, was statistically indistinguishable from 0.
- 24% of the funds produced negative alphas, which means that these funds charged fees in excess of their active returns.
- From 1989 to 2006, the fraction of skilled managers (active returns exceed costs) declined from 14.4% to 0.6%. BSW attribute this shift to an increase in unskilled managers who nonetheless charged high fees.

As bleak as these results may seem, the story of alpha for most individual investors is far worse than BSW report, which brings us to rule 3: avoid taxes.

[3] See, for example, Gruber, Martin, 1996, "Another Puzzle: The Growth of Actively Managed Mutual Funds, *Journal of Finance*; Jensen, Michael, 1968, "The Performance of Mutual Funds in the Period 1945 – 1964, *Journal of Finance*; and Lehmann, Bruce and David Modest, 1987, "Mutual Fund Performance Evaluation: A Comparison of Benchmarks and Benchmark Comparisons, *Journal of Finance*.
[4] As far as I know, this paper has not yet been published but can be obtained from the Social Science Research Network.
[5] The authors also control for funds that apparently have no alpha but in fact do.

Rule 3: Avoid Taxes

BSW define alpha as active return less costs, which they consider to include administrative fees, management fees, and transactions costs, but they do not include taxes. This omission is not an oversight on their part. It is difficult to generalize about taxes because the tax burden varies across investors. For example, most institutional investors pay no taxes. At the other extreme, the effective tax rate for Massachusetts residents, including federal and state taxes, is 20% for dividends and long-term capital gains, and 47% for short-term capital gains. If we were to include these costs in the calculation of alpha, it is much less likely than even 0.6% that any fund could generate an alpha.

So how do we avoid taxes? The best way to avoid taxes is to follow rule 2; invest passively. The main source of taxes is turnover. Passively managed funds experience very little turnover, because they rebalance only when the index is reconstituted. Actively managed funds, by contrast, generate significant turnover, because their managers continually attempt to replace overvalued securities with undervalued securities. Because taxes on capital gains, especially short-term gains, are hardly trivial, we should estimate expected returns, standard deviations, and correlations from after-tax returns when constructing portfolios. That way, we can use optimization to construct portfolios that are tax efficient as well as mean-variance efficient. Moreover, we should harvest tax losses judiciously to offset future gains.

Our Closing Argument

Perhaps you still cling to the quixotic belief that you can identify actively managed funds that will generate a sufficiently large alpha to overcome the drag imposed by their incremental fees, transaction costs, and taxes. If so, the following example should help to cement our case. Imagine you are an investor who resides in a jurisdiction with a tax burden similar to that of Massachusetts, and that you are in the 35% federal tax bracket. You are presented with three investment options: an index fund with an expected return of 10%, a mutual fund with an expected return of 13.5%, and a hedge fund with an expected return of 19%. The relevant assumptions of these funds are shown in Exhibit 1.

Exhibit 1: Investment Options	Index Fund	Mutual Fund	Hedge Fund
Expected return	10.00%	13.50%	19.00%
Dividend yield	1.50%	1.50%	0.00%
Standard deviation	16.00%	16.00%	16.00%
Turnover	4.00%	95.00%	200.00%
Transaction Cost	0.40%	0.40%	0.40%
Long-term gain	20.00%	20.00%	20.00%
Short-term gain	47.00%	47.00%	47.00%
Qualified dividend	20.00%	20.00%	20.00%
Management fee	0.07%	1.40%	2.00%
Performance fee	0.00%	0.00%	20.00%

Assuming you have a 10-year investment horizon and plan to liquidate these funds at the conclusion of your horizon, which of these funds should you prefer? We can simulate how expenses reduce the gross returns of the three funds to produce their returns net of all expenses.

Exhibit 2: Simulated Return Net of Expenses	Index Fund	Mutual Fund	Hedge Fund
Return gross of all expenses	10.00%	13.50%	19.00%
Transaction costs	0.02%	0.38%	0.80%
Taxes	1.64%	3.90%	5.42%
Management fee	0.07%	1.40%	2.00%
Performance fee	0.00%	0.00%	3.17%
Total expenses	1.73%	5.68%	11.39%
Return net of all expenses	8.27%	7.82%	7.61%

The index fund is by far the best choice, despite the substantial alphas of the mutual fund and hedge fund. In order to break even with an index fund, a mutual fund must produce an annualized alpha of 400 basis points over 10 years and 430 basis points over 20 years. For a hedge fund the breakeven alphas equal 1,000 basis points for 10 years and 1,100 basis points for 20 years.

It is very hard, if not impossible, to justify active management if your goal is to grow wealth. If, instead, you view active management as a source of entertainment, you may wish to consider less costly ways to amuse yourself.