The Price of Emotion

Successful investing is built on twin pillars – diversification and self-control. Crafting a thoughtfully diversified strategy but not sticking to it is like having a fitness program without discipline – long on promise and short on results. Behavioural finance experts have identified a litany of cognitive biases that can distort investor decision-making and disrupt adherence to a sound strategy. Some of the principal ones include:

- *Overconfidence* – the tendency to overestimate one's abilities, knowledge and the reliability of the information used in decision-making.
- *Confirmation bias* - the predisposition to look for and interpret information in a manner that confirms one's preconceptions.
- *Myopic Framing* – the inclination to view facts in a narrow context.
- *Outcome bias* – the tendency of people to expect to get what they want.
- *Herding* – the tendency of individuals to follow the crowd.

As the market moves through bull and bear cycles, investor sentiment swings from optimism and hope to anxiety and fear. Emotions inevitably interplay with cognitive biases leading to adverse outcomes in which investors end up "buying high" and "selling low". Warren Buffett summed it up best with his observation that, "*Success in investing doesn't correlate with I.Q. once you're above the level of 25. Once you have ordinary intelligence, what you need is the temperament to control the urges that get other people into trouble in investing.*"

A number of academic studies have attempted to measure the returns earned by a typical investor and compare them to market returns in order to estimate the cost of emotionally-driven buying and selling. Although not a perfect proxy[i], the dollar-weighted returns of mutual funds, a calculation that accounts for the timing and size of cash flows in and out of funds, has been used as an estimate of the average investor's returns. These dollar-weighted returns are then compared against the returns of the funds themselves, a time-weighted calculation that ignores the effects of cash flow timing.

One of the first studies[ii] compared the dollar and time-weighted returns of U.S. mutual funds from December 31, 1983 to August 31, 1994. The author found that in every fund category – equities, bond, balanced and precious metals, investors suffered a chronic shortfall in return because of ill-timed movements in and out and between mutual funds. Overall, this inopportune timing of cash flows reduced returns to investors by 1.08% a year.

In another study[iii], John Bogle, the founder of Vanguard, compared the dollar and time-weighted returns of U.S. equity funds from 1980 to 2005. He found that poorly timed moves in, out and between funds by investors resulted in a shortfall of 2.7% a year. Unquestionably, the herd mentality associated with the tech bubble and its subsequent collapse added to the underperformance of investors during this period. Many investors went from piling into the hottest growth fund to hiding out in money market funds.

Asset bubbles such as the tech boom induce greater emotionally-driven buying and selling, and hence, more damage to investors' portfolio results. In confirmation, one study[iv] found that whereas U.S. fund investors lagged fund returns by 1.2% a year from 1984-1990, this performance gap climbed to 2.67% a year for the period 1991 to 2003.

At its recent asset allocation conference, Morningstar disclosed its findings from comparing the dollar and time-weighted returns of U.S. mutual funds from 2000 to 2009. Overall, the shortfall experienced by investors was 1.5% per annum. The timing of bond fund purchases and sales was no better than equity funds; in fact, investors in municipal bond funds had the highest shortfall at 1.61% annually.

Interestingly, investors in exchange-traded funds (ETFs) seem to suffer from greater timing shortfalls than their mutual fund brethren. Bogle analyzed[v] 79 ETFs in a variety of asset classes over a five-year period and found that investors in 68 ETFs underperformed. On average, investors' returns lagged the funds themselves by a whopping 4.5% annually. The annual underperformance ranged from 0.4% for large-cap value funds to 17.9% for financial sector funds. The hair-trigger trading capability of ETFs may contribute to more emotionally-driven buying and selling.

Most investors appear blithely unaware of how much damage emotionally-driven buying and selling can wreak on their portfolios over time. Instead their perspective is dominated by short-term emotional gratification. Unfortunately, the scale of emotionally-induced diminution is that much greater when shortfalls are deducted from real returns (i.e. returns net of inflation) and compounded over time.

In illustration, the following graph compares the cumulative real growth of $1.00 invested in both a "buy and hold" (in red) and an "emotionally-driven" portfolio (in green) from 1970 through 2009. Each portfolio is comprised of 40% intermediate term government bonds and 60% large company stocks but it is assumed the return of "emotionally-driven" portfolio lags the "buy and hold" portfolio by 1.5% annually.

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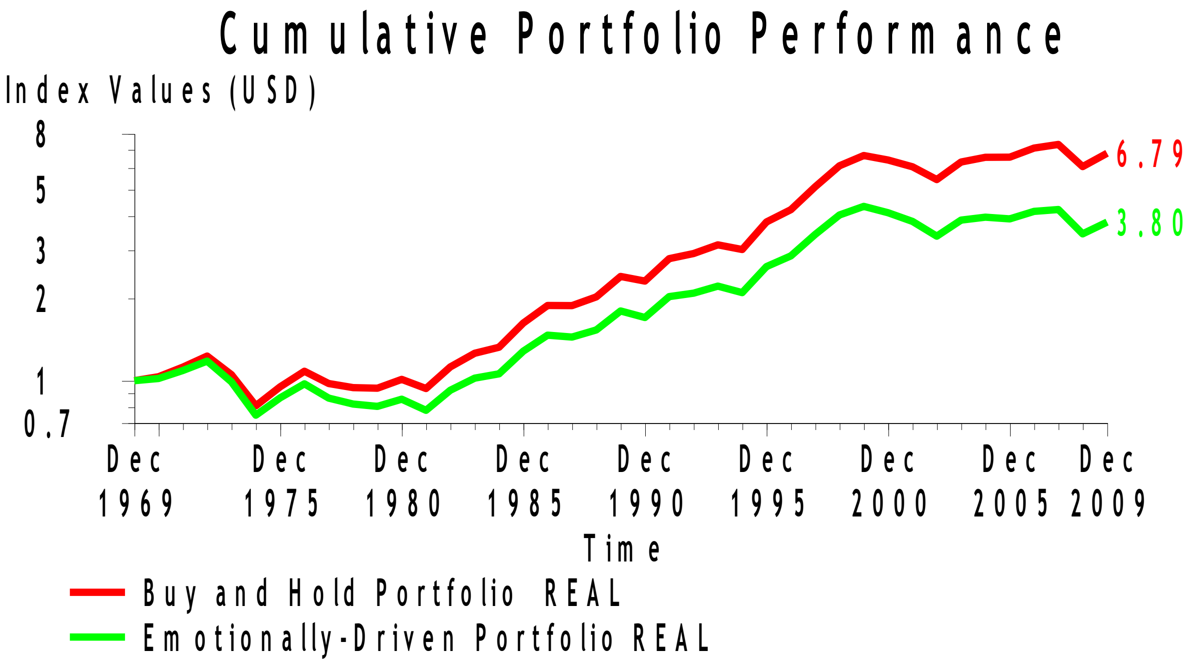

Emotionally-driven decisions exact a huge price from a portfolio over time. In this illustration, the cumulative real value of the portfolio is almost cut in half.

The antidote is a threefold exercise. First, an investor's ability to tolerate risk in financial and psychological terms must be clarified; this risk profile then serves as the primary input into portfolio design. Second, the asset class performance of the recommended portfolio should be back-tested. The 1973/74 and 2008/09 downturns provide historic stress tests that should be reviewed in-depth and in dollar terms. There is a world of difference between saying you can tolerate a 20 percent portfolio decline and saying you can watch your $5 million portfolio shrink by $1 million.

Finally, the investment strategy must be documented in writing. As Charles Ellis wrote in his investment classic "Investment Policy: How to Win the Loser's Game", "*The primary reason for articulating long-term policy explicitly and in writing is to enable the client and the portfolio manager to protect the portfolio from ad hoc revisions of sound long-term policy, and to help them hold to long-term policy when short-term exigencies are most distressing and the policy is most in doubt.*"[vi]

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[i] Davis, J. L., 2007, *Do Investors Receive Dollar-Weighted Returns,* Dimensional Fund Advisors article.

[ii] Nesbitt, S. L., 1995, "Buy high, sell low. timing errors in mutual fund allocations." *Journal of Portfolio Management,* vol. 22, no. 1, 57-60.

[iii] Bogle, J.C., "What is ahead for stocks and bonds – and how to earn your fair share". The Money Show, Las Vegas, Nevada, May 15, 2006. http://www.vanguard.com/bogle_site/sp20060515.htm

[iv] Braverman, O., S. Kandel and A. Wohl, The (Bad?) Timing of Mutual Fund Investors (September 2005). CEPR Discussion Paper No. 5243. Available at SSRN: http://ssrn.com/abstract=834624

[v] Bogle, J.C. and J. Wiandt, "An Interview with John Bogle". IndexUniverse, June 19, 2009. http://www.indexuniverse.com/sections/features/6027-a-discussion-with-john-bogle.html

[vi] Ellis, C. *Investment Policy: How to Win the Loser's Game*. Homewood, IL: Business One Irwin, 1993.