

Investors' Actual Returns Less Than You Might Think

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Equity mutual fund investors are not even coming close to keeping up with the market averages, and the reasons have to do with a lot more than investor costs. As we will see in this paper, the biggest reason for their performance shortfall has to do with they time their investments into and out of equities, both equities in general and the various types of equities. These mistakes can be avoided by following a disciplined investment strategy, including regular portfolio rebalancing and by choosing asset allocation targets based on economic valuations rather than recent market trends.

Stocks Have Done Very Well, Thank You. How About You? - Stock markets have performed very well over the past few decades. If we consider the twenty year period ending in 2005, a period long enough to include the whole outrageous technology bubble of the late 90's and the subsequent nasty three year aftermath¹, we find that the S&P 500 compounded returns at a robust **11.9%** per year over the full period (which is about a point and half better than its really long term average going back to 1926). For small cap stocks, the return was about percentage point higher yet, at 12.8% per year. But are these figures indicative of what the average equity mutual fund investor earned over that period? The unfortunate answer is an emphatic no! According to studies by Dalbar, a well known investment research firm², the poor average fund investor earned only **3.9%** per year over that period, a huge eight percentage points less than the market.

Costs Are Only a Small Part of the Problem - Real world investor costs are a significant reason that the average investor will always lag the costless market indices. This in itself has nothing to do with market efficiency or lack thereof. If a market index is the average return of all investors in the market, but the average investor must pay investment costs, then it is just simple math that the average investor's return will be less than the market index's return, by an amount equal to the investor costs. Equity fund investors' costs -- which may include fund managers' fees and operating costs, transactions costs and advisor's fees -- are significant, generally in the range of 1% to 2.5% per year, all inclusive. But according to the Dalbar study, the average performance shortfall is more like 8% per year, or even more if we consider small cap funds. Costs cannot explain anything like this difference. There remains a huge performance shortfall, on the order of 6 percentage points or more.

¹ The S&P 500 declined by a cumulative 49% from peak to trough, between March 2000 and October 2002.

² Dalbar's reports are proprietary and must be purchased, but results such as this are widely published. My source is an article in the June 18, 2007 issue of Barron's, p. 50.

And Don't Remind Me About Inflation and Taxes – In fact, if we consider the effects of inflation and taxes, the shortfall is even more devastating. Correcting for inflation, the real 20 year return for the S&P 500 works out to 8.6% per year, versus a miniscule 0.9% for the average equity fund investor³. Finally, if we factored in taxes, which are paid on nominal rather than real returns, it is clear the average equity fund investor would not have even maintained real purchasing power over the 20 year period.

It's the Timing, Stupid⁴ - If not costs, then to what can we attribute these astoundingly bad results? Was it poor performance by the equity mutual funds themselves? No. Generally equity mutual funds have underperformed the market averages, but only by amounts about equal to their costs⁵. The primary culprit turns out to be the atrocious **timing** of investments by the individual fund investors themselves⁶. For all the talk about adopting an investment plan and sticking to it, investors generally don't do it. They vary their exposure to equities over time, and whatever basis or sentiments they may be relying on to do so, the one thing that is perfectly clear is that they are doing an extraordinarily bad job of it.

Furthermore, it is not only exposure to equities in general that is ill-timed. To an even greater degree, investors move dollars around amongst the various equity asset classes, economic sectors and individual mutual funds. The predominant investor behavior has been to chase winners and to dump whatever is cold - the classic syndrome of buying high and selling low. The evidence for such behavior is abundantly clear when observing flows into and out of equity funds. During the technology bubble of the late 90's and early 2000, assets continued to pour into the following areas, mostly after prices had skyrocketed:

- Asset classes – large cap growth
- Sectors – technology, media and telecom stocks and sector funds
- Funds – Janus funds were the poster children of the time

On the other hand, funds invested in areas not participating in the boom – like small caps, value stocks, REIT's and international stocks- were experiencing huge net outflows of assets.⁷ Of course, these are the asset classes and sectors that have performed the best for the past six years since the end of the tech bubble. Money flows did ultimately shift and began flowing into these areas in large amounts, but the net inflows did not really get going until long after they had become the best performers.

³ In 20 years, \$1 invested in the index would have grown to \$5.21 in real purchasing power, versus a mere \$1.20 for the average equity fund investor.

⁴ Or, more accurately, the “Stupid Timing”.

⁵ The average actively managed equity mutual fund underperformed the S&P 500 index by 1.42% per year over the 20 year period ending 12/31/06 according to Professor Burton Malkiel in a Schwab sponsored webinar given 7/10/07, Exhibit 5. (Burton Malkiel is the author of the famous book “A Random Walk Down Wall Street”.)

⁶ And of their advisors in some cases. When I speak of “individual investors” I am not distinguishing between those who do and do not use financial advisors, brokers, newsletter writers or investment gurus of one type or another to guide their investment behavior. The results cited in this paper have to do with equity mutual fund investors in general.

⁷ Some previously highly regarded managers – like Robert Sanborn of Oakmark – even lost their jobs because they would not swim with the prevailing tides.

And what about now? As discussed in this space several times, valuations suggest that equity prices in several of these areas⁸ may have finally begun to overshoot their marks. Nevertheless, these are perceived as the places where “money is being made,” and money continues flowing into them at record rates.

The mutual fund companies should know better, but they have a record of pandering to investors’ appetite for buying what has been hot. A recent study in an industry journal⁹ shows that fund companies tend to release the most new sector funds just when a sector’s hot streak is about over. The table below shows the calendar year in which the largest numbers of new sector funds in a given economic sector were introduced to the public, along with the average performance for funds in that sector in the year of introduction and the subsequent year. As we can clearly see, the year in which the most new funds were introduced was a terrible year for an investor to own a fund in that sector. The table below shows only the four worst sectors in this regard, but the four other sectors included in the article also showed negative sector fund returns in the year in which the most new funds were launched.

Table 1 – Years of Most Sector Fund Launches

Sector	Launch Year	# of Funds Launched	Performance	
			Year Launched	The Next Year
Technology	2001	40	-34.2%	-41.7%
REIT's	1998	14	-15.2%	-1.6%
Health	2001	17	-12.5%	-27.9%
Natural Resources	1998	5	-23.9%	29.6%

My Funds Have Done Great! How Come I Haven’t Done So Great? - Investors not only trail market index returns, they even trail the returns of the actual mutual funds in which they invest. This is a more subtle issue. It is easy to understand what it means to trail the returns of the S&P 500. But if we look at mutual fund XYZ, which is reported to have achieved returns of 10% per year, wouldn’t we expect that the returns enjoyed by its shareholders would also be about 10% per year on average? Well, we might, but we would be wrong. The actual returns earned by investors in most equity mutual funds are less than the funds’ advertised returns. The reason is that investors tend to be more heavily invested in the funds at times when they are earning lower returns and less heavily invested when they are making their best returns.

The technical reason there is a divergence between reported mutual fund returns and actual investor returns is because there are different ways of computing returns. Mutual fund returns – and in fact the returns for most money managers and investment gurus – are computed based on what is called “time weighted returns” (TWR). In TWR, we compute the return generated in each time period, without regard to how much money is invested, and then string these returns together to determine the compounded return over a longer period. For example,

⁸ This applies to all of the areas cited except international stocks; namely small caps, value (relative to growth) and domestic REIT’s. I am neutral with respect to international versus domestic stock valuations.

⁹ “The Chase Is On”, by Craig Israelsen and Eric Park, in Financial Planning, June 2004, p. 131-2.

if a fund earned 20% in year one and 5% in year two, then its compounded annualized return over the two years would be 12.2%¹⁰.

But to compute the actual investor experience, we have to compute what is called “dollar weighted returns” (DWR). Dollar weighted returns account for how many dollars are invested in the fund at any given time by weighting the returns in each time period by the cumulative amount of dollars invested during that period. Suppose in the above example that the fund’s assets under management were only \$10 million in the first year when it earned 20%, but \$100 million in year two, when it earned only 5%. This dollar flow is not atypical for mutual funds, especially new funds. They earn high returns early on, after which investors flow money their way, after which they revert to average. In this case, most of the investor money was not in the fund until the year when fund returns fell back to 5%, so the average investor return works out to only 6.3%¹¹. This is significantly less than the advertised TWR-based fund return of 12.2%.

Mathematically, DWR returns can be higher or lower than TWR returns. If there were no investor inflows or outflows during the period of interest, they would be identical. But in practice unfortunately, the DWR’s, which measure true investor returns, turn out to be significantly lower than the funds’ advertised TWR’s, with the reason being the investors’ poor timing decisions.

Before going on, it may be worth noting that “dollar weighted returns” is actually just another name for “internal rate of return” (IRR), which is the methodology we have always used at MAM to report client returns. This approach shows how much the investor *actually* earned over a given period, not how much he/she *would have* returned if there were no inflows or outflows during the given time period.

Morningstar began analyzing the difference between reported fund returns and actual investor returns a couple years ago, and began systematically publishing it for all the mutual funds it covers just last November.¹² In one study, they compared investor returns to equity fund returns over 17 different fund categories over the past 10 years¹³. They found that every category, without exception, delivered lower investor returns than reported fund returns. Across the nine diversified all-equity categories from the Morningstar style box (large cap value, large cap blend, ..., small cap growth) the underperformance ranged from

¹⁰ The simple math is this: $(1.20) \times (1.05) = 1.260 = (1.122)^2$

¹¹ The noted 6.3% is the internal rate of return for a cash flow of \$10M at time zero, \$100 M at time one year, and negative \$1,176 M at the end of year 2. \$1,176 M is how much the fund would be worth after two years given the returns and cash flows noted. A constant return of 6.3% on all cash invested would have produced the same terminal value for the fund as did the 20% in year one and the 5% in year 2. This is how IRR is defined.

¹² Morningstar’s definition of investor returns is the following: “Morningstar investor returns (also known as dollar-weighted returns) measure how the typical investor in that fund fared over time, incorporating the impact of cash inflows and outflows from purchases and sales. In contrast to total returns, investor returns account for all cash flows into and out of the fund to measure how the average investor performed over time. Investor return is calculated in a similar manner as internal rate of return. Investor return measures the compound growth rate in the value of all dollars invested in the fund over the evaluation period. Investor return is the growth rate that will link the beginning total net assets plus all intermediate cash flows to the ending total net assets.”

¹³ “Mind the Gap: How Good Funds Can Yield Bad Results”, by Russel Kinnel, in Morningstar FundInvestor, July 2005, p. 1-3.

- A low of 0.4% per year for large cap value to
- A high of 3.1% per year for small cap growth.

For sector funds, which is where investors presumably make their most purposeful timing bets, the underperformance was considerably worse, ranging from:

- 1.6% per year for financials to
- 13.4% per year for technology.

And remember, these are the compounded rates over a full *ten year period*. That's a long time to underperform, and the differences noted compound to a large cumulative wealth difference over a period that long.

How Can We Avoid These Problems? – In summary, equity fund investors underperform the broad equity market averages by far more than their investment costs alone would imply, and they even fail to earn the reported net returns of the mutual funds in which they invest. The culprit is bad timing, not only of the equity market overall, but of the various asset classes, economic sectors and specific funds within the equity universe.

How can investors avoid these making such counter-productive timing decisions? It is actually not that difficult if we can bring ourselves to take emotions and ad hoc decision making out of it, and replace it with a pre-defined and disciplined investment strategy. There is more than one way to do this. The simplest way would be to set fixed asset allocation targets (at both the primary and secondary levels) and just stick to them forever. But I believe we can do better. The approach I take for MAM clients has two key features:

- **Rebalancing** - Systematic rebalancing to asset allocation targets, generally performed two or three times per year.¹⁴
- **Valuation Based Tilting** - Periodic “tilting” of the portfolio towards or away from certain classes of stocks based on fundamental valuation measures (such as price to earnings ratios, dividend and buyback metrics, DCF valuations and more). “Tilting” means modifying our asset allocation targets for equity sub-classes, but only by small amounts at any given rebalancing event.

Rebalancing may sound like a rather mundane maintenance task, but there is actually much more to it. It is an essentially contrarian strategy in which we find ourselves selling whatever equity types have recently performed the best, while buying more of those that have performed the poorest. This is actually the exact opposite of chasing winners and buying what's hot. Moreover, to the extent that stock prices exhibit “reversion to the mean”, regular

¹⁴ How frequently and under what conditions one should rebalance is an active area of research and debate in the investment community. It is generally agreed that rebalancing too frequently or over-zealously can be counter productive. According to the research of at least one prominent analyst, the optimal rebalancing frequency is about twice per year. However, there can be considerable variation in the prescribed frequency depending on how far and how fast portfolios move away from their targets. See interview with Gobind Daryanani in Bloomberg Wealth Manager, June 2007 p 59-60. I also have copies of presentations by the same researcher at two recent conferences.

rebalancing should generate returns in excess of the simple equity class averages. Reversion to the mean is a statistical property which says if something has been moving in one direction longer or farther than usual, eventually it will switch course and move back the other way. Numerous research studies have shown that stock prices do in fact exhibit reversion to the mean over medium and longer term time periods, generally 18 months or more¹⁵.

Tilting based on valuations often (but not always) takes us even further down the contrarian road. This is because when a class of stocks that has been hot for awhile, their prices will often overshoot their true economic values, while the opposite is often true for the colder equity classes. Thus, if we rely on fundamental valuation measures, we often find ourselves tilting against the wind. For example, small cap stocks and value stocks have been big winners for several years now, but the underlying valuations have recently been suggesting that we should tilt towards larger cap and more growth oriented stocks. It is impossible to predict exactly when a performance streak will end, but it is worth noting that large caps and growth stocks finally did significantly outperform small caps and value stocks, respectively, last quarter.

Tilting means gradually increasing or decreasing the asset allocation target for a given type of stocks based on absolute and/or relative economic valuations. Such tilting generally occurs at the secondary level of asset allocation, for different types of equities like small or large cap or value or growth, or different investment styles. At the top level, I almost never tilt or otherwise change our targets for equities overall based on valuation calls. That would be market timing, a practice proven to be almost impossible to succeed at except by luck.

It is important to understand that buying more or less of something because of its economic valuation is not the same thing as forecasting what will happen in the immediate future. Because an asset class is overvalued now doesn't mean it won't be even more overvalued a year from now. And something that is undervalued now may stay that way for awhile. But over time, prices do tend to move back to their real economic values. Statistically we see this as reversion to the mean.

Conclusion - Periodic rebalancing, along with valuation based tilting of asset allocation targets are components of an investment strategy that stands in stark contrast to the kinds of behaviors that have led equity fund investors to such an atrocious record of investment timing. We have seen the dire consequences of such behaviors. They have underperformed the equity market in general by 8 percentage points, and have failed to even keep up with the returns of the funds in which they have invested. Thus, the potential benefits of our strategy should be evident.

¹⁵ On the other hand, over shorter periods, ranging from a month up to a year or so, stock prices have been found to exhibit momentum. Momentum is the exact opposite of reversion to the mean. It implies price increases will be followed by more than the usual number of increases, and the opposite for a series of price decreases. So not only does reversion to the mean usually take awhile, it is often preceded by the seemingly opposite type of behavior.