
2011 QAIB

Quantitative Analysis of Investor Behavior

Advisor Edition

Prepared by
DALBAR, Inc.
Research & Communications
Division

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Compliments of:
Robert Barry, CFP
Barry Capital Management, Inc.
908-979-1505

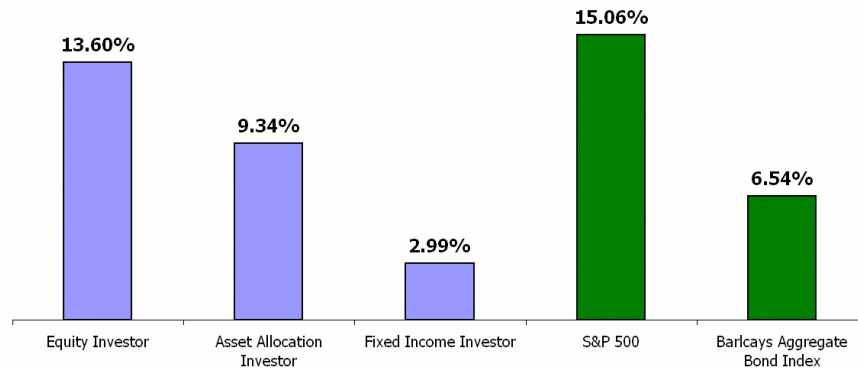


Federal Reserve Plaza
600 Atlantic Ave, FL 30
Boston, MA 02210
617.723.6400
www.dalbar.com

Investor Returns

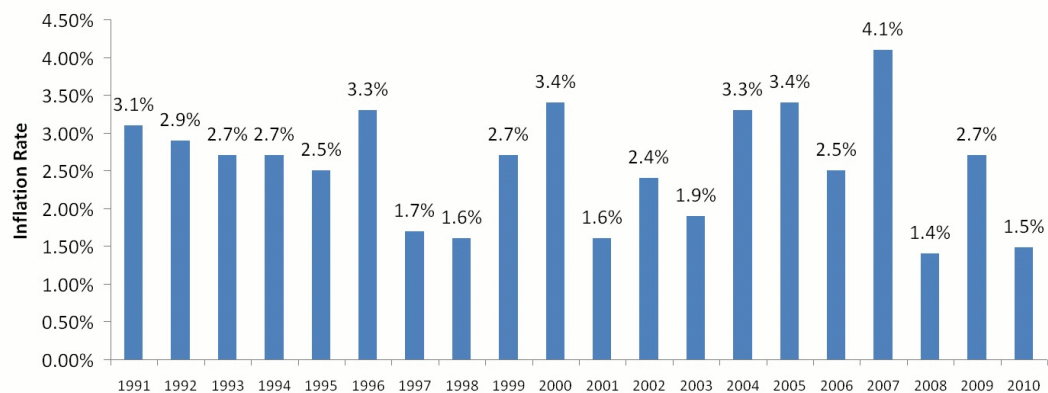
The 2011 QAIB report shows that equity and fixed income investors have underperformed the broad indices over the 20 years ending in 2010. The one year 2010 return for the average equity investor underperformed the S&P 500 by almost one and one half percent. The fixed income investor underperformed the Barclays Aggregate Bond Index by over three and one half percent.¹

One-Year Returns for 2010



QAIB found average annualized returns for all investor types, equity, fixed income and asset allocation, exceeded the inflation rate for a ten year period. This was the first time this has occurred in QAIB history. Unfortunately, this was caused by unusually low inflation rates in 2001, 2003, 2008 and 2010 and due less so to improved investor returns.

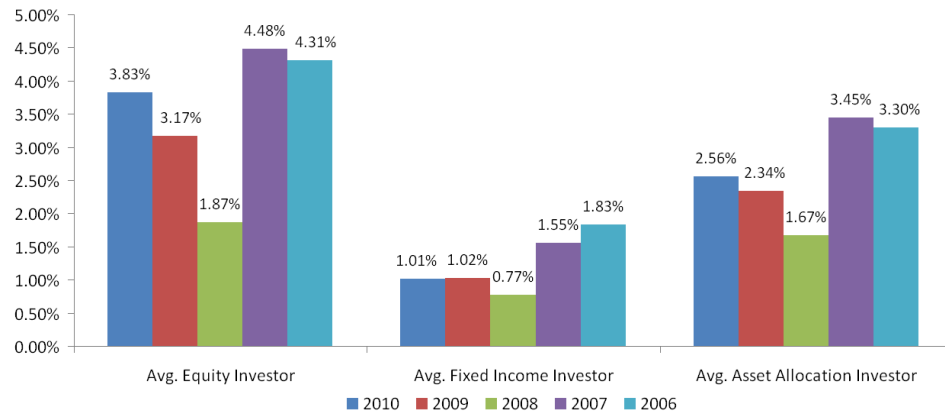
Annual Inflation Rate 1991 - 2010



¹ Average stock investor, average bond investor and average asset allocation investor performance results are calculated using data supplied by the Investment Company Institute. Investor returns are represented by the change in total mutual fund assets after excluding sales, redemptions and exchanges. This method of calculation captures realized and unrealized capital gains, dividends, interest, trading costs, sales charges, fees, expenses and any other costs. After calculating investor returns in dollar terms, two percentages are calculated for the period examined: Total investor return rate and annualized investor return rate. Total return rate is determined by calculating the investor return dollars as a percentage of the net of the sales, redemptions and exchanges for each period.

The chart below shows that in all asset classes, the average investor continued to react to negative news about the market. The year of 2008 illustrates this point. That year had one of the worst market corrections with the S&P 500 falling -37.72%, the Barclay Aggregate Index returning 5.24% and inflation at 1.5%. The proliferation of the 24/7/365 news coverage that focused heavily on the negative market news in 2008 was undoubtedly one reason investors reacted poorly.

Annualized 20-Year Investor Returns



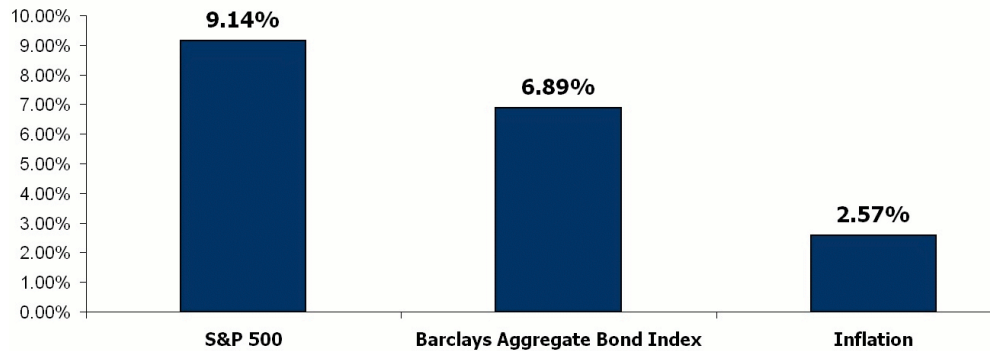
Strong returns in 2009 and 2010 have erased the 20, 10 and 5 year cumulative losses created by the 2008 markets.

Annualized Investor Returns by Fund Type vs. Inflation

	20-year	10-year	5-year	3-year	1-year
Equity	3.83%	1.55%	1.61%	-4.21%	13.60%
Fixed Income	1.01%	0.77%	0.86%	0.33%	2.99%
Asset Allocation	2.56%	1.31%	0.96%	-2.27%	9.34%
Inflation	2.57%	2.48%	2.46%	1.86%	1.48%

Mutual fund firms are required by law to only advertise the results of “buy and hold investors,” and use market indices to illustrate their added value. For example, the chart below shows the return a 20-year buy-and-hold investor in the S&P 500 and the Barclays Aggregate Bond Index would have earned on an annualized basis since 1991, compared to inflation.

Benchmark Returns and Inflation for the 20 Years Ended 12/31/2010



Benchmark Returns

	20-year	10-year	5-year	3-year	1-year
S&P 500	9.14%	1.41%	2.29%	-2.86%	15.06%
Barclays Aggregate Bond Index	6.89%	5.84%	5.80%	5.90%	6.54%

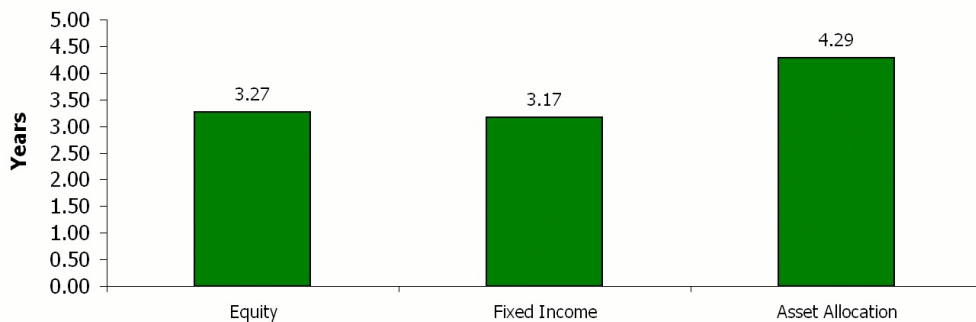
Equity mutual fund investors continue to outperform bond investors. To take full advantage of any alpha created by portfolio management, investors need to remain invested and must not step in and out of the market. Bond holders over the long-term will see fairly consistent returns, which continue to support that a properly constructed investment portfolio should take advantage of multiple asset classes, consistent with the investors’ timeframe and comfort with risk.

Investor Behaviors Continue to Fall Prey to Market Forces

The following charts illustrate that investors continue to react to market movements and the news. One of the most startling and ongoing facts is that at no point in time have average investors remained invested for sufficiently long enough periods to derive the benefits of a long-term investment strategy.

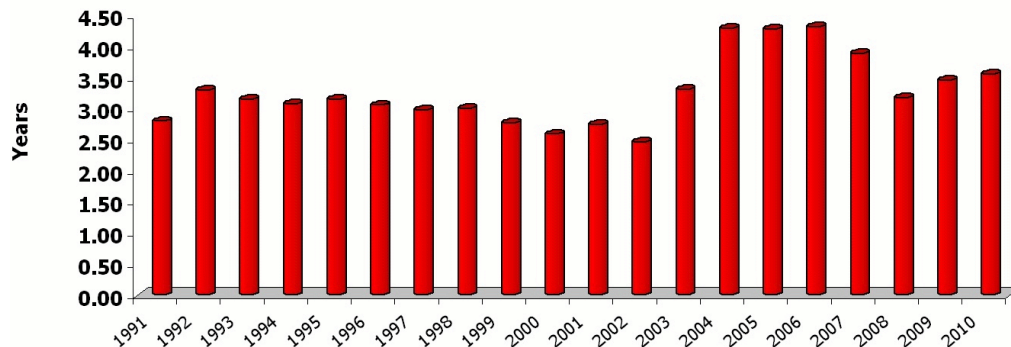
While we still see that investors will react to market corrections over the 20 years since 1991, since 2003 the reaction has been more muted. These charts show that recommendations by many mutual fund companies to remain invested have had little effect on what investors actually do. The result is that the alpha created by portfolio management is lost to the average investor, who generally abandons investments at inopportune times, often in response to bad news.

**Average Mutual Fund Retention Rates
(Based on 20-Year Analysis)**

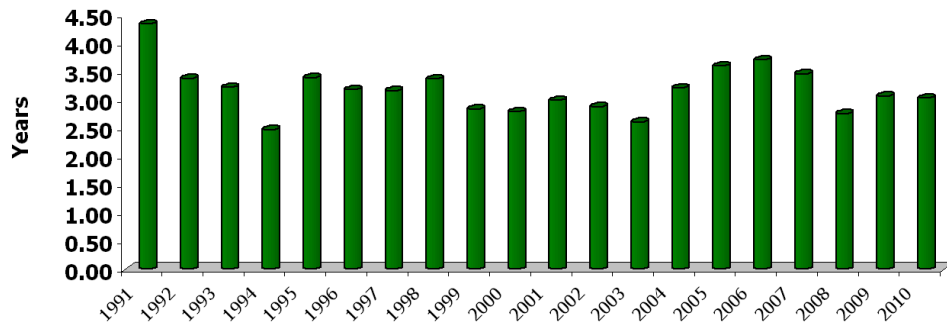


In 2010, as in years past, asset allocation fund investors have retention rates that are over one year longer than equity or fixed income investors, which is a significant difference.

Retention Rates: Equity Funds

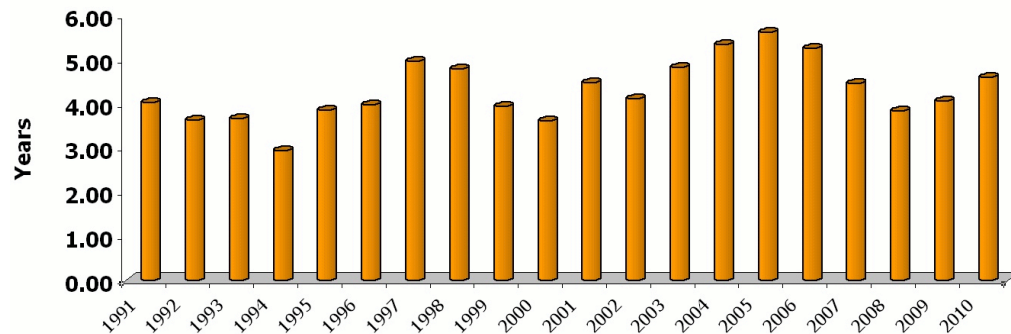


Retention Rates: Fixed Income Funds



The investors in asset allocation funds have historically held on to their funds for the longest periods of time and this continues to be the case in 2010.

Retention Rates: Asset Allocation Funds



Behavioral Finance Helps Explain Irrational Actions

The psychological factors of behavioral finance help explain why investors often make buy and sell decisions that contradict the best investment practice. In order to correct the behavior, advisors and others need to apply antidotes to the factors that drive the poor choices that investors make:

- **Loss aversion:** Expecting high returns with low risk
- **Narrow framing:** Making decisions without considering all implications
- **Anchoring:** Relating to familiar experiences, even when inappropriate
- **Mental accounting:** Taking undue risk in one area and avoiding rational risk in others
- **Diversification:** Seeking to reduce risk by simply using different sources, giving no thought to how such sources interact
- **Herding:** Copying the behavior of others even in the face of unfavorable outcomes
- **Regret:** Treating errors of commission more seriously than errors of omission
- **Media response:** Reacting to news without reasonable examination
- **Optimism:** Believing that good things happen to "me" and bad things happen to "others"

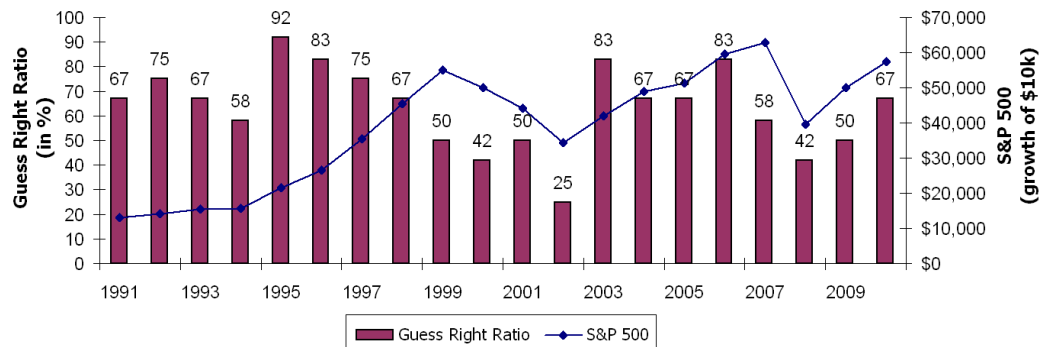
Guess Right Ratio's Effect on Investors Alpha

DALBAR continues to analyze the investor's decision making process for their purchases and sales. This analysis, known as the Guess Right Ratio, examines fund inflows and outflows to determine how often investors correctly anticipate the direction of the market.

DALBAR looks at the data to determine if an investor can correctly guess the timing of their purchases or sales and what impact those decisions have on the returns earned by the investor. The guess right ratio shows that poor timing and fear will impact and erode return or alpha created by portfolio managers. Alpha is erased for investors that execute purchases or sales in response to something other than a prudent investment decision, and are frequently unsuccessful. Investors guess right when a net inflow is followed by a market gain, or a net outflow is followed by a decline.

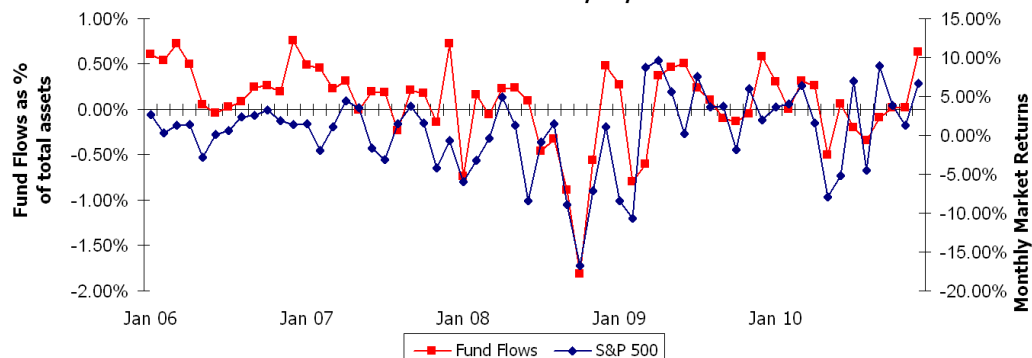
In general, investors make money when the Guess Right Ratio exceeds 50%.² Over the 20-year period ended December 31, 2010, the overall Guess Right Ratio was 67%. Analyzing the chart below, we notice that investors made money 14 out of the 20 years represented. During the six years when investors made poor decisions, correlates to trying times for investors. As the markets have improved in 2009 and 2010, we notice that it is easier for investors to make the right decision when markets are rising and their fear of loss is not the major decision driver.

How Often Do Investors Guess Correctly?



The following chart further supports the findings of the Guess Right Ratio. It illustrates how market inflows and outflows compare with monthly market returns.

Investor Fund Flows and Market Performance for the 5 Years Ended 12/31/10



² Please note that the Guess Right Ratio is not dollar weighted, so it cannot be used to measure returns.

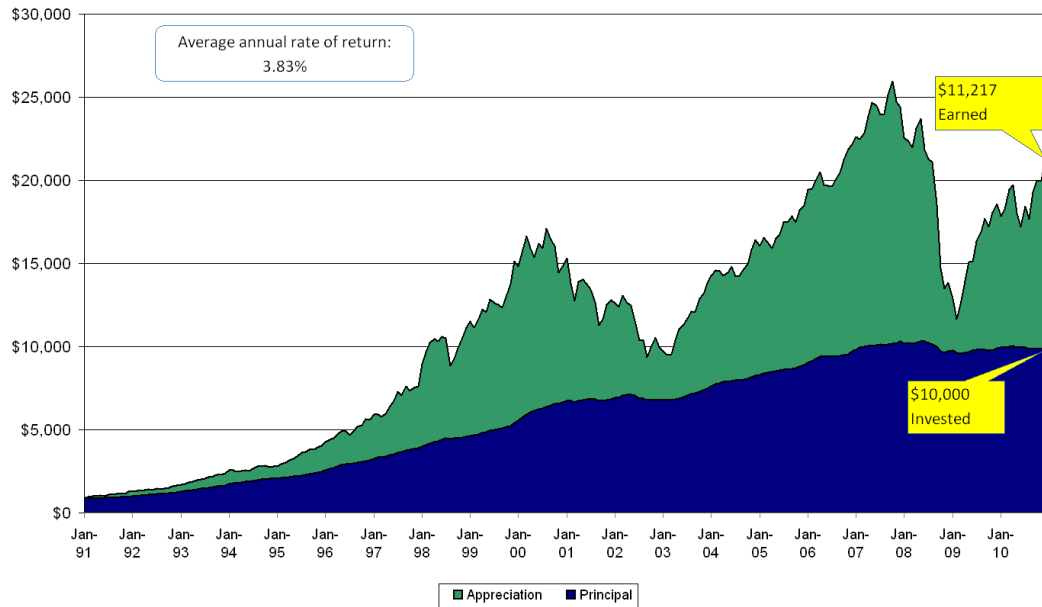
Systematic Investing - Changes Occurring

On the next three pages you will find charts that compare a hypothetical \$10,000 investment made by an average investor in equity, fixed income or asset allocation mutual funds and the results of the same hypothetical investment used in a process of systematic investing over a comparable twenty year time horizon.

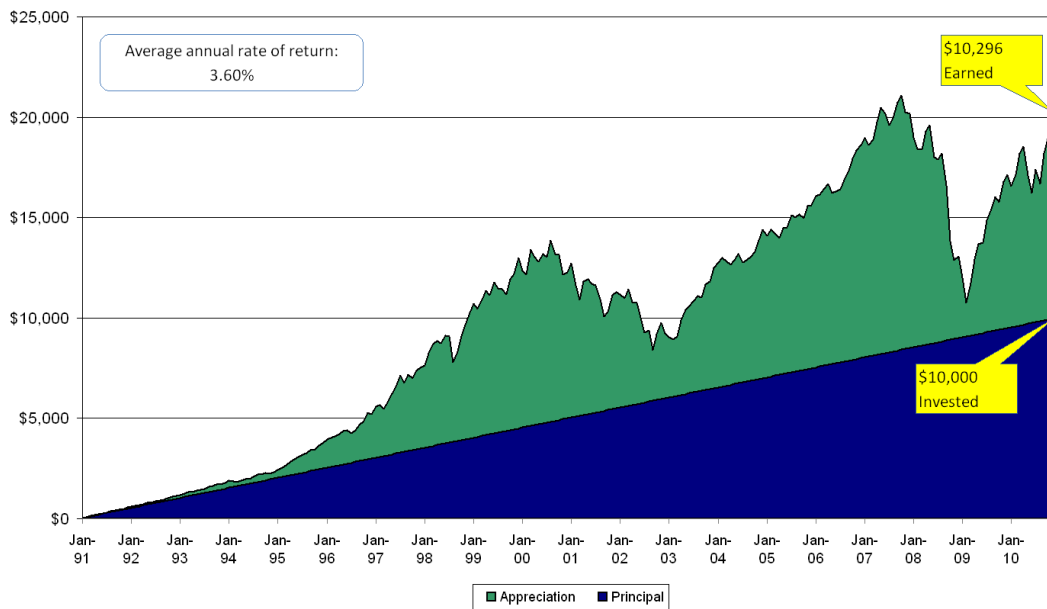
Findings

- ✓ This is the first time in 17 years since the QAIB Report was first published that we have observed the systematic equity investor failing to outperform the average equity investor. (see charts, page 9);
- ✓ Since the systematic equity investor failed to outperform the average equity investor it does not mean that investors should abandon the concept of systematic investing. It should however cause investors or the financial advisors that support them, to seek new strategies to counteract investor behavior that loses alpha. (see charts, page 9);
- ✓ The average systematic fixed income investor did, however, outperform the average fixed income investor over the twenty year period by earning over four times as much. (see charts, page 10);

Average Equity Fund Investor 1991 - 2010

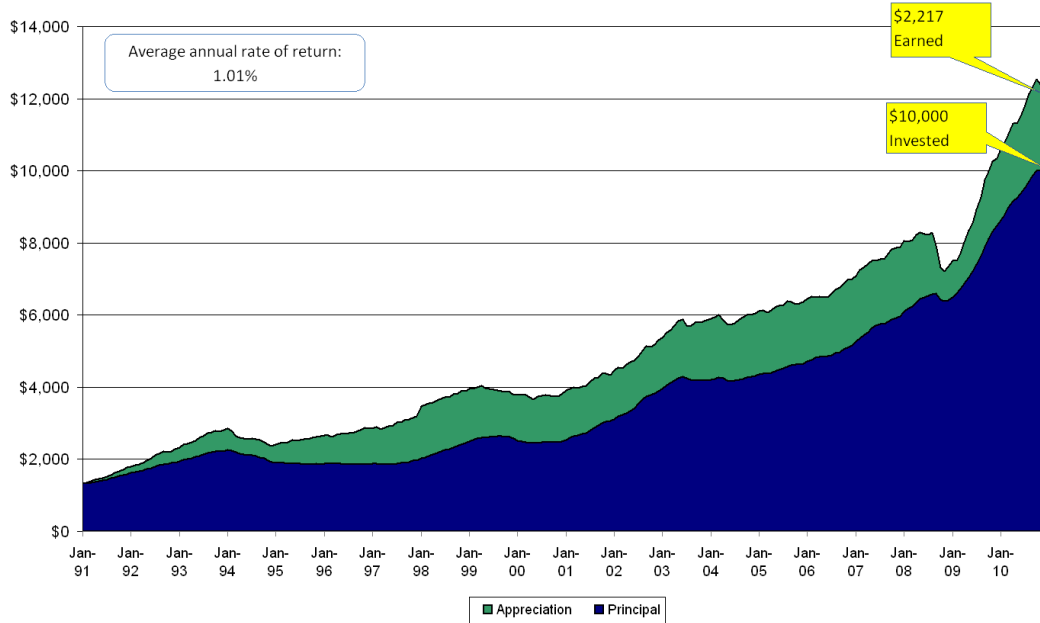


Systematic Equity Investor 1991 - 2010

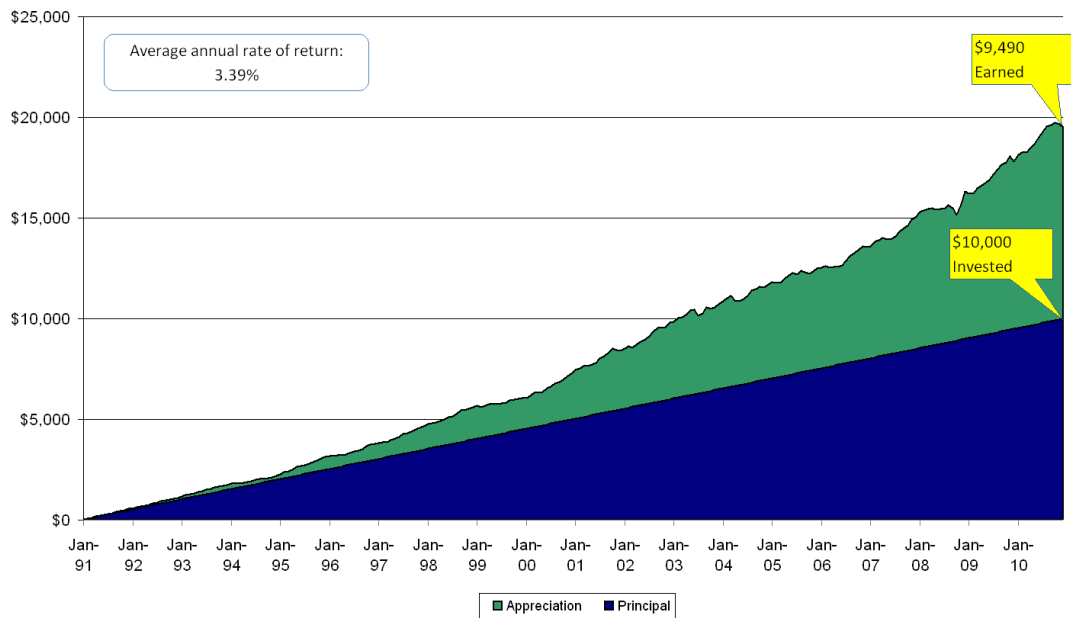


The systematic equity investor is represented by the S&P 500, an unmanaged index of common stock. Data supplied by Standard & Poor's. Indexes do not take into account the fees and expenses associated with investing, and individuals cannot invest directly in any index. Past performance cannot guarantee future results. Systematic investing involves continuing investing in securities regardless of price levels. It cannot assure a profit or protect against loss during declining markets. Past performance cannot guarantee future results.

Average Fixed Income Fund Investor 1991 - 2010

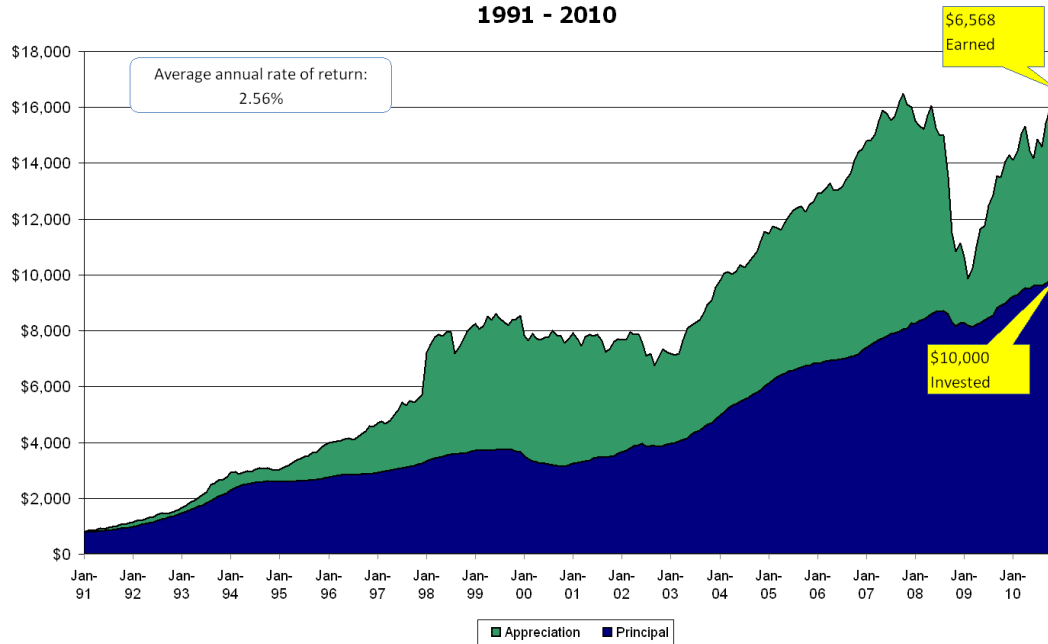


Systematic Fixed Income Investor 1991 - 2010

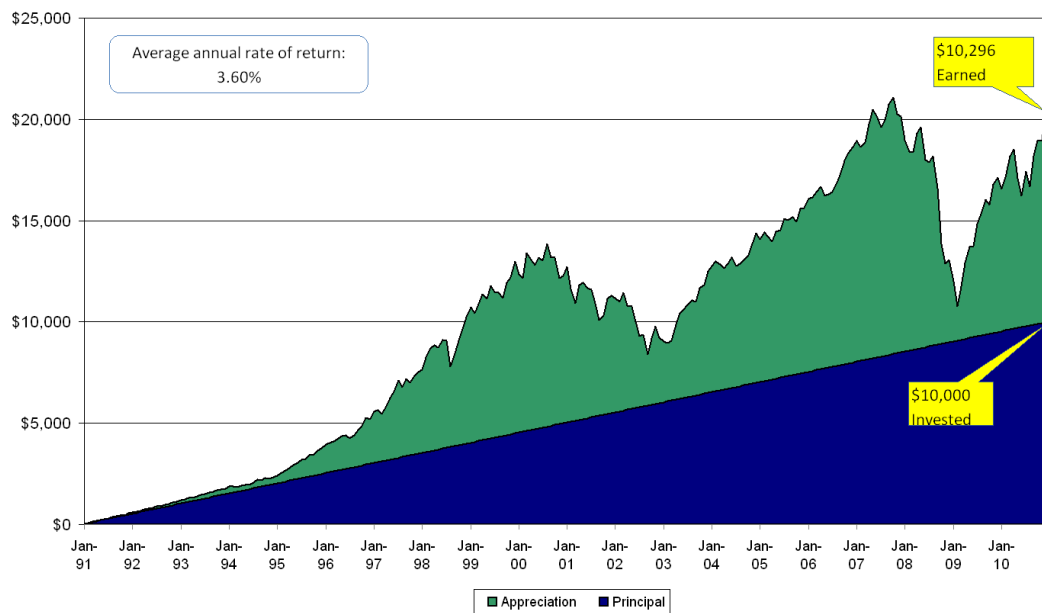


The systematic fixed income investor is represented by the Barclays Aggregate Bond Index. Past performance cannot guarantee future results. Systematic investing involves continues investing in fixed income assets regardless of price levels. It cannot assure a profit or protect against loss during declining markets. Past performance cannot guarantee future results.

Average Asset Allocation Fund Investor 1991 - 2010



Systematic Equity Investor 1991 - 2010



The systematic equity investor is represented by the S&P 500, an unmanaged index of common stock. Data supplied by Standard & Poor's. Indexes do not take into account the fees and expenses associated with investing, and individuals cannot invest directly in any index. Past performance cannot guarantee future results. Systematic investing involves continuing investing in securities regardless of price levels. It cannot assure a profit or protect against loss during declining markets. Past performance cannot guarantee future results.

Desperately Seeking Alpha ... and How to Capture More

As this report has shown for the 17th time in as many years, mutual fund investors consistently underperform the relevant index. The report also shows that most of this loss in performance is due to psychological factors that translate into poor timing of their buys and sells (investor behavior).

Portfolio managers expend enormous efforts determining what investments to make, the right time to buy and the right time to sell so as to gain a few basis points of alpha, only to see retail investors give up percentage points in returns by poor timing of their buys and sells.

While this contradiction between the psychological drivers of investor behavior and prudent investing continues to create enormous lost opportunities, some investors and some advisors have been able to avoid the alpha robbing behavior. This has been achieved by a better understanding and management of the psychological factors coupled with the understanding of the investments being used. Unfortunately, simply providing education on investor behavior and investment managers' strategies have only had limited success. This article presents an approach used only by a few to maximize the alpha of the retail investor. While a buy and hold strategy prevents a loss of alpha, which would be a great improvement for most investors, effective management of psychological factors and an understanding of the "behavior" of investments being used, combine to produce positive alpha.

What Is Investor's Alpha?

Alpha is a measure of performance on a risk-adjusted basis. Alpha takes the volatility (price risk) of a mutual fund and compares its risk-adjusted performance to a benchmark index. The excess return of the fund relative to the return of the benchmark index is a fund's alpha. Simply stated, alpha represents the value that a portfolio manager adds to or subtracts from a fund's return.

Investors' alpha is the value a retail investor adds or subtracts from the alpha delivered by the portfolio manager. The return of the respective index is considered to be zero alpha so any excess over the index is considered positive investor alpha.

Understanding the Behavior

Investors are driven to do the wrong thing by the psychological factors that overtake rational decision-making.

1. **Loss Aversion...** expecting to find high returns with low risk. Loss aversion causes the investor to search for investments that don't exist and results in either taking no action or later discovering that the selected investment fails to meet the expectation. The effect is often selling the investment at an imprudent time and losing alpha.
2. **Narrow Framing...** making decisions without considering all implications. The result is quick decision making with the consequence that facts are uncovered after inappropriate investments are made. Investors make precipitous investment changes, which can lose alpha.

3. **Anchoring...** relating to the familiar experiences, even when inappropriate. Anchoring is a very powerful communication method but can mislead investors unless it is used with caution. For example, investors can be misled about the stability of an investment if analogies are used to represent stability. Analogies of growth can also lead to unrealistic beliefs and expectations. Alpha can be lost by selecting investments that cannot reasonably be expected to produce the expected alpha.
4. **Mental Accounting...** taking undue risk in one area and avoiding rational risk in others. Used wisely, Mental Accounting can permit an investor to achieve high alphas in one area while protecting assets for other purposes. Imprudent use of Mental Accounting can be as damaging to alpha as any other psychological factor since investors can be misled into inappropriate investments.
5. **Diversification...** seeking to reduce risk, but simply using different sources. This extremely valuable investment strategy can also be misused to create a false sense of protection that results in alpha killing actions.
6. **Herding...** copying the behavior of others even in the face of unfavorable outcomes. Investors that go along with the crowd simply because there is a crowd tend to avoid catastrophic errors but seldom achieve above average results. Alpha is not achieved by Herding.
7. **Regret...** treating errors of commission more seriously than errors of omission. Investors who fear decision making lose alpha through inaction or reversals. Inaction can prevent losses caused by poor decisions but is unlikely to produce alpha.
8. **Media Response...** tendency to react to news without reasonable examination. Familiar media sources have become less reliable as they compete with newer, faster and lower cost outlets. At the same time, new media outlets seldom have very thorough authentication. This question of reliability raises the concern about reacting to news.
9. **Optimism...** belief that good things happen to me and bad things happen to others. Optimistic investors hold on to investments after it becomes evident that losses are not likely to be recovered. Holding on to poor investments is yet another way psychological factors can reduce alpha.

Managing the Behavior

The alpha killing psychological factors described above must be curbed to produce desirable results for alpha seeking investors. The key to curbing undesirable reactions is to introduce a pause in the flow to assess the facts. During this pause the investor should evaluate if he/she is succumbing to one or more of the nine psychological factors listed.

These factors are transformed into questions that will alert investors of potential psychological traps. Interpreting the answers correctly and acting on them appropriately can prevent alpha losing investment decisions. While all these questions will not apply to every investor, at least one will. The questions listed here must be adapted to the specific situation

and represent the line of questioning and not necessarily language applicable to all investors:

1. Do you believe that an investment under consideration produces a return with little risk? Are you aware of the risks?
2. Have you considered what it will mean to you to commit to this investment for ten years if you should need the money?
3. The illustration that was used is not literal; do you see how it differs from real life investing?
4. Do you have a specific purpose in mind for each investment portfolio that you own? Do you know how much risk you are willing to take with each one?
5. Do you know whether you have the same underlying investment in different portfolios? Does that mean that you have excessive exposure to that underlying investment?
6. Have you heard from others that the investment under consideration is a good one? How many people have recommended it? Would you consider these people to be experts? Are the recommendations based on your personal situation?
7. Do you expect the value to decline the day after you make an investment? If the value does decline, will you withdraw your funds?
8. Have you seen recent news reports or stories that relate to the investment under consideration? Have those news reports made you more or less inclined to own the investment under consideration?
9. Have you considered the changes that have occurred since your decision to make the investment under consideration? Would it be wise to put some of the profits you have made into a more secure investment?

Understanding the Investment Behaviors

Managing investor behavior is only one half of the solution to maximizing investor's alpha. The second half is the understanding of the investments themselves. The overarching requirement is to understand and select the appropriate asset classes and the allocation among classes. This requirement is the subject of a great deal of study and will not be dealt with in this report, except to acknowledge that it is of paramount importance in investment decision making.

The subject here is the differences in how various investments react to changing conditions. This investment "behavior" applies to all asset classes and defines the action investors need to take to maximize their alpha.

Investment behaviors fall into three broad categories based on who is expected to seek the alpha. Any one investment may be a blend of these categories:

- Investments that alone seek alpha... portfolio managers have the flexibility to go in and out of markets as conditions change in an attempt to outperform benchmarks. The key determinant of this investment behavior is the ability to make significant changes in the asset class mix in the portfolio.

- Investments that seek zero alpha ... these investments have definitive “styles” which remain consistent, regardless of market conditions. The expectation is that investors will make changes into and out of these investments to maximize their alpha.
- Investments that seek beta ... portfolio managers seek to minimize losses in down markets at the expense of higher returns in up markets. This type of investment is not appropriate for investors seeking alpha.

Maximizing Investor’s Alpha

Success in maximizing alpha requires overcoming the psychological factors, creating the proper asset allocation and ongoing review of the investments.

For investments that seek their own alpha and have the flexibility to react to market conditions, the investor need only select and monitor results and how effectively the investments deal with changing market conditions. The investor simply buys and holds until personal needs change, leaving the adaptation to changing conditions to the portfolio manager.

Investments that seek zero alpha require the investor or advisor to change investments in response to market conditions. Doing this correctly produces alpha that exceeds the return of the underlying investments.

The issue is made complex because very few investments display only one behavior. In reality, the blend of behaviors means that investors need to be vigilant caretakers of their portfolios.

Glossary

Average Investor

The average investor refers to the universe of all mutual fund investors whose actions and financial results are restated to represent a single investor. This approach allows the entire universe of mutual fund investors to be used as the statistical sample, ensuring ultimate reliability.

[Average] Investor Behavior

QAIB quantitatively measures sales, redemptions and exchanges (provided by the Investment Company Institute) and describes these measures as investor behaviors. The measurement of investor behavior is the net dollar volume of these activities that occur in a single month during the period being analyzed.

[Average] Investor Return (Performance)

QAIB calculates investor returns as the change in assets, after excluding sales, redemptions, and exchanges. This method of calculation captures realized and unrealized capital gains, dividends, interest, trading costs, sales charges, fees, expenses and any other costs. After calculating investor returns in dollar terms (above) two percentages are calculated:

- Total investor return rate for the period
- Annualized investor return rate

Total return rate is determined by calculating the investor return dollars as a percentage of the net of the sales, redemptions and exchanges for the period.

Annualized return rate is calculated as the uniform rate that can be compounded annually for the period under consideration to produce the investor return dollars.

Dollar Cost Averaging

Dollar cost averaging results are based on the equal monthly investments into a fund whose performance is identical to the appropriate benchmark (either the S&P 500 or the Barclays Aggregate Bond Index). Investments total \$10,000 over 20 years. Dollar values represent the total amount accumulated after the period under consideration. The percentage is the uniform annualized return rate required to produce the dollar returns.

Guess Right Ratio

The Guess Right Ratio is the frequency that the average investor makes a short-term gain. One point is scored each month when the average investor has net inflows and the market (S&P 500) rises in the next month. A point is also scored when the average investor has net outflows and the market declines in the next month. The ratio is the number of points scored as a percentage of the total number of months under consideration.

Holding Period

Holding period (retention rate) reflects the length of time the average investor holds a fund if the current redemption rate persists. It is the time required to fully redeem the account. Retention rates are expressed in years and fractions of years.

Hypothetical Average Investor

A \$10,000 investment is made in a pattern identical to the average investor behavior for the period and asset class under consideration. Rates of return are applied each month that is identical to the investor return for each month.

The resulting dollar value represents what a \$10,000 investment would be worth to the average investor. The dollar amount of the return is then converted to an annualized rate.

Hypothetical Systematic Investor

A \$10,000 investment is evenly distributed across each month for the period under consideration. The appropriate benchmark (either the S&P 500 or the Barclays Aggregate Bond Index) is used as an assumed return rate and applied each month.

The resulting dollar value represents what \$10,000 would be worth to the systematic investor. The dollar amount of the return is then converted to an annualized rate.

Inflation Rate

The monthly value of the consumer price index is converted to a monthly rate. The monthly rates are used to compound a "return" for the period under consideration. This result is then annualized to produce the inflation rate for the period.

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DALBAR, Inc. is the financial community's leading independent expert for evaluating, auditing and rating business practices, customer performance, product quality and service. Launched in 1976, DALBAR has earned the recognition for consistent and unbiased evaluations of investment companies, registered investment advisors, insurance companies, broker/dealers, retirement plan providers and financial professionals. DALBAR awards are recognized as marks of excellence in the financial community.

Methodology

QAIB uses data from the Investment Company Institute (ICI), Standard & Poor's and Barclays Capital Index Products to compare mutual fund investor returns to an appropriate set of benchmarks. Covering the period from January 1, 1991, to December 31, 2010, the study utilizes mutual fund sales, redemptions and exchanges each month as the measure of investor behavior. These behaviors reflect the "average investor." Based on this behavior, the analysis calculates the "average investor return" for various periods. These results are then compared to the returns of respective indices.

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600 Atlantic Ave, FL 30
Boston, MA 02210
617.723.6400
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