DALBAR's 21st Annual

Quantitative Analysis of Investor Behavior

2015 Advisor Edition

Compliments of:

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ABOUT THIS REPORT: QAIB 2015

Since 1994, DALBAR's Quantitative Analysis of Investor Behavior (QAIB) has measured the effects of investor decisions to buy, sell and switch into and out of mutual funds over short and long-term timeframes. The results consistently show that the average investor earns less – in many cases, much less – than mutual fund performance reports would suggest.

The goal of QAIB is to improve performance of both independent investors and financial advisors by managing behaviors that cause investors to act imprudently. QAIB offers guidance on how and where investor behaviors can be improved.

QAIB 2015 examines real investor returns in equity, fixed income and asset allocation funds as well as the composite returns for all these investors. The analysis covers the 30-year period to December 31, 2014, encompassing the crash of 1987, the drop at the turn of the millennium, the crash of 2008, plus recovery periods of 2009, 2010 and 2012. This year's report examines the worst periods of investor decision-making over the last 30 years and the steps that can be taken to proactively correct behavior in stressful circumstances.

No matter what the state of the mutual fund industry, boom or bust: ***Investment results are more dependent on investor behavior than on fund performance. Mutual fund investors who hold on to their investments have been more successful than those who try to time the market.***

About DALBAR, Inc.

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 advisers, insurance companies, broker/dealers, retirement plan providers and financial professionals. DALBAR awards are recognized as marks of excellence in the financial community.

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Methodology

QAIB uses data from the Investment Company Institute (ICI), Standard & Poor's, Barclays Capital Index Products and proprietary sources to compare mutual fund investor returns to an appropriate set of benchmarks. Covering the period from January 1, 1985 to December 31, 2014, 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.

A glossary of terms and examples of how the calculations are performed can be found in the Appendices section of this report.

KEY FINDINGS AS OF 2015

- In 2014, the average **equity mutual fund investor** underperformed the S&P 500 by a wide margin of 8.19%. The broader market return was more than double the average equity mutual fund investor's return. (13.69% vs. 5.50%).

- In 2014, the average **fixed income mutual fund investor** underperformed the Barclays Aggregate Bond Index by a margin of 4.81%. The broader bond market returned over five times that of the average fixed income mutual fund investor. (5.97% vs. 1.16%).

- Retention rates are
  - ✓ slightly higher than the previous year for equity funds and
  - ✓ increased by almost 6 months for fixed income funds after dropping by almost a year in 2013.

- Asset allocation fund retention rates also increased to 4.78 years, reaching their highest mark since plummeting to 3.86 years in 2008. Asset allocation funds continue to be held longer than equity funds (4.19 years) or fixed income funds (2.94 years).

- In 2014, the 20-year annualized S&P return was 9.85% while the 20-year annualized return for the average equity mutual fund investor was only 5.19%, a gap of 4.66%.

- In 8 out of 12 months, investors guessed right about the market direction the following month. Despite "guessing right" 67% of the time in 2014, the average mutual fund investor was not able to come close to beating the market based on the actual volume of buying and selling at the right times.

	Investor Returns[1]						
	Equity Funds	Asset Allocation Funds	Fixed Income Funds	Composite Fund Investor	Inflation	S&P 500	Barclays Aggregate Bond Index
30 Year	3.79	1.76	0.72	2.47	2.70	11.06	7.36
20 Year	5.19	2.47	0.80	3.34	2.28	9.85	6.20
10 Year	5.26	2.25	0.69	3.51	2.13	7.67	4.71
5 Year	10.19	5.09	1.21	6.84	1.69	15.45	4.45
3 Year	14.82	7.15	0.72	9.57	1.34	20.41	2.66
12 Months	5.50	2.24	1.16	3.98	0.75	13.69	5.97

[1] **Returns are for the period ending December 31, 2014**. *Average equity 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 gap between the 20-year annualized return of the average equity mutual fund investor and the 20-year annualized return of the S&P 500 widened for the second year in a row from 4.20% to 4.66% due to the large underperformance of 2014.

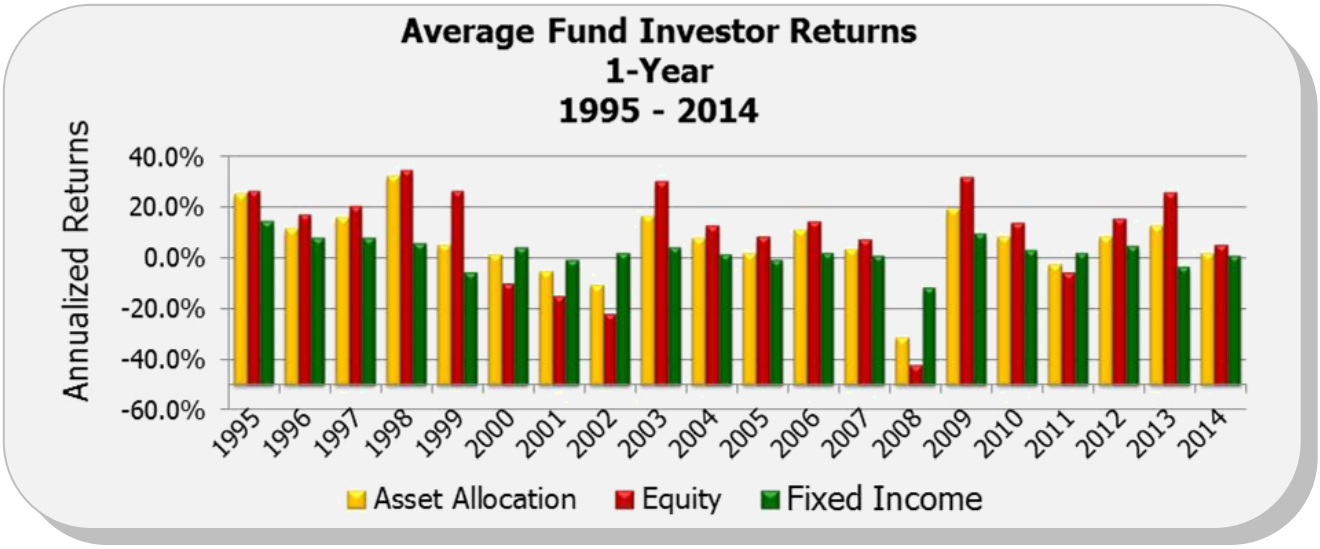
- In the last 30 years, investor underperformance was most acute in October 2008. That was the second month of the financial crisis that plagued Wall Street and Main Street. October 2008 was also the month that Congress passed the bailout bill.

- One can anticipate when investors may be most vulnerable to their negative behavior by looking back at history and seeing the "Maximum Impact" events that led to bad decisions in the past.

- By recognizing potential Maximum Impact events, investors and advisors should have a plan in place beforehand and react quickly when the next situation arises.

- The years 1987, 1997, 2000 and 2008 each contained 2 of the top 10 most acute underperforming months, indicating that acute events tend to travel in pairs.

- The market crisis of 2008 was the only instance in which 2 of the top 10 most acute underperforming months occurred back-to-back. In September of 2008, the average equity mutual fund investor underperformed the S&P 500 by 3.84%, the 6th worst monthly underperformance of the last 30 years. The following month, October of 2008, the average equity investor underperformed the S&P by 7.41%, the worst monthly underperformance of the last 30 years.



Investor Behaviors: A Cause of Poor Decision-Making

After decades of analyzing investor behavior in good times and in bad times, and after enormous efforts by thousands of industry experts to educate millions of investors, imprudent action continues to be widespread. It has become clear that improvements through investor education have only produced marginal benefits. This edition of QAIB focuses on the ways in which one can identify when investors are most vulnerable to poor decision-making and what to do when those triggers arise. To put this in context, it is also helpful to take a look back at what we have learned over the past 30 years about investor behavior.

When discussing investor behavior it is helpful to first understand the specific thoughts and actions that lead to poor decision-making. Investor behavior is not simply buying and selling at the wrong time, it is the psychological traps, triggers and misconceptions that cause investors to act irrationally. That irrationality leads to the buying and selling at the wrong time which leads to underperformance. There are 9 distinct behaviors that tend to plague investors based on their personal experiences and unique personalities.

Loss Aversion

- **Expecting to find high returns with low risk**

Narrow Framing

- **Making decisions without considering all implications**

Anchoring

- **Relating to the familiar experiences, even when inappropriate**

Mental Accounting

- **Taking undue risk in one area and avoiding rational risk in others**

Diversification

- **Seeking to reduce risk, but simply using different sources**

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

- **Tendency to react to news without reasonable examination**

Optimism

- **Belief that good things happen to me and bad things happen to others**

Maximum Impact – Events that Lower Investor Returns

The following section examines the 10 months in which the average equity fund investor underperformed the S&P 500 by the largest margin.

TOP 10 MONTHS WITH THE MOST ACUTE UNDERPERFORMANCE

Rank	Month	S&P 500 Return	Average Equity MF Investor Return	Underperformance
1	October, 2008	-16.80%	-24.21%	-7.41%
2	March, 2000	9.78%	3.72%	-6.06%
3	October, 1987	-21.54%	-26.87%	-5.33%
4	January, 1987	13.47%	9.35%	-4.12%
5	August, 1998	-14.46%	-18.47%	-4.01%
6	September, 2008	-8.91%	-12.75%	-3.84%
7	November, 2000	-7.88%	-11.33%	-3.45%
8	April, 1997	5.97%	2.75%	-3.22%
9	November, 1997	4.63%	1.48%	-3.15%
10	July, 1989	9.03%	5.91%	-3.12%

Maximum Impact – Steps to Help Investors When They are Most Vulnerable

GET OUT AHEAD

The **first step** is to recognize the event. This is challenging because the next event will not have identical characteristics as a previous one. Hence exercising careful judgment in identifying a potential Maximum Impact event is imperative.

The **second step** is to react quickly. Data shows that the cycle of loss starts with abandoning the investment followed by a period of remorse as the markets recover. Eventually, the investor re-enters the market when confidence is restored. Preventing this cycle requires having a plan in place beforehand.

The **third step** is repetition. The forces driving investor fear do not stop in a day or week or month. When investors are most vulnerable, the fear of total loss is fueled by an un-ending barrage of messages that reinforce the fear. The counteracting forces must continue until drivers of fear dissipates.

SUCCESS TAKES RISK

Getting out ahead requires taking the risk that a market recovery will *not* occur! While there is overwhelming evidence that diversified investments recover their value, an implied promise to that effect will appear to be high risk.

Those willing to take this calculated risk will be able to protect investor returns from the erosion of poor timing.

Success at protecting investor returns through Maximum Impact events requires bold and unequivocal messages of recovery to even partially offset the panic that can occur.

No amount of prior education can adequately prevent the enveloping fear that exists when the event is actually taking place.

Calming Messages

The messages used in response to Maximum Impact events must have three characteristics to be effective:

- *Messages must be delivered at the time the fear is present.* As mentioned earlier, messages delivered before the investor actually experiences the event will not be effective. If the messages are too long after the fact, decisions will have been made and actions taken that are very difficult to reverse.
- *Messages must relate directly to the event causing the fear*. Providing generic messages such as the market has its ups and downs are of little use during a time of anxiety.
- *Messages must assure recovery*. Qualified statements regarding recovery tend to fuel fear instead of calming it. The following two statements have dramatically different effects on the investor's state of mind:

  (1) "We recognize that you may have lost money, but history shows that markets tend to recover their value in time."

  (2) "While you may be tempted to abandon your investment because of (event) we want to assure you that the smartest thing to do is to wait until the market stabilizes before taking any such action."
- *Messages must present evidence that forms the basis for forecasting recovery*. Credible and quotable data provides an answer to the investor when the pressure mounts to "just do something". The evidence can take the form of a statistic or a case history.

The risk of delivering effective messages is that recovery may not take place. Such a possibility would also make the risk of over-promising irrelevant, since the investment business itself would cease to exist!

On the other hand, the investor will recognize the fear of non-recovery in tempered statements, generic answers to specific questions, and a litany of disclosures.

Planning for Maximum Impact Events

Response to an event requires as much planning, preparation and practice as a disaster recovery plan.

Investors will need the Maximum Impact event to be met with a pre-assigned team of financial professionals:

- ✓ The team must have access to the resources necessary to respond quickly.

- ✓ There must be multiple scenarios that can be quickly adapted to a specific event when it occurs.
- ✓ The team must be trained to execute any of these scenarios on very short notice.
- ✓ The messaging for each scenario must be pre-approved and associated with the conditions under which it will be used.
- ✓ Each audience for the communication and the media to be used should be identified and made accessible.
- ✓ The team must be fast moving to intercept the build-up of fear.
- ✓ Both active and passive strategies are required. Active, to reach out to the required audiences and passive such as having a hot line, chat room or inquiry facility.

The Evidence of Poor Decision-Making

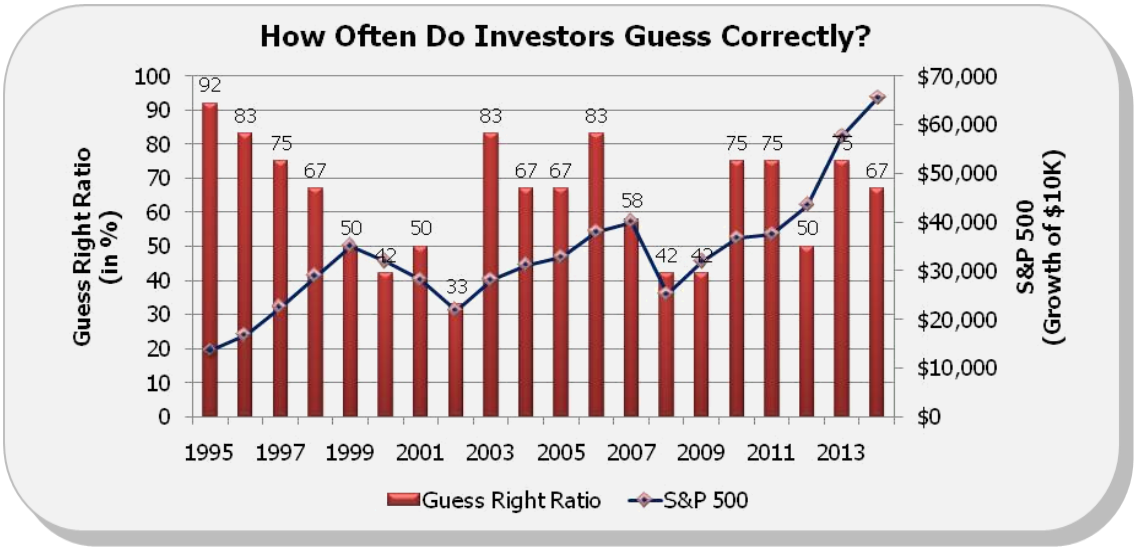
One thing that all the negative behaviors have in common is that they can lead investors to deviate from a sound investment strategy that was previously established based on their goals, risk tolerance and time horizon. The best way to fight off the aforementioned negative behaviors is to employ a buy and hold strategy that focuses on one's goals and is not reactive to short-term market conditions. The data shows that the average mutual fund investor has not stayed invested for a long enough period of time to reap the rewards that the market can offer a more disciplined investors. The data also shows that when investors react, they generally make the wrong decision.

Market Timing

The retention rate data for equity, fixed income and asset allocation mutual funds strongly suggests that investors lack the patience and long-term vision to stay invested in any one fund for much more than 4 years. The fact that this short-term retention adheres to a prudent, long-term strategy does not comport with common sense and is more likely the result of short-term thinking and market timing. This begs the question: has investors' market timing been successful?

DALBAR continues to analyze the investor's market timing successes and failures through their purchases and sales. This form of analysis, known as the Guess Right Ratio, examines fund inflows and outflows to determine how often investors correctly anticipate the direction of the market. Investors guess right when a net inflow is followed by a market gain, or a net outflow is followed by a decline.

DALBAR looks at the data to determine when investors correctly guess the timing of their purchases or sales and what impact those decisions have on their returns. The Guess Right Ratio shows that investors who execute purchases or sales in response to something other than a prudent investment decision reduce the return created by the markets and portfolio managers.



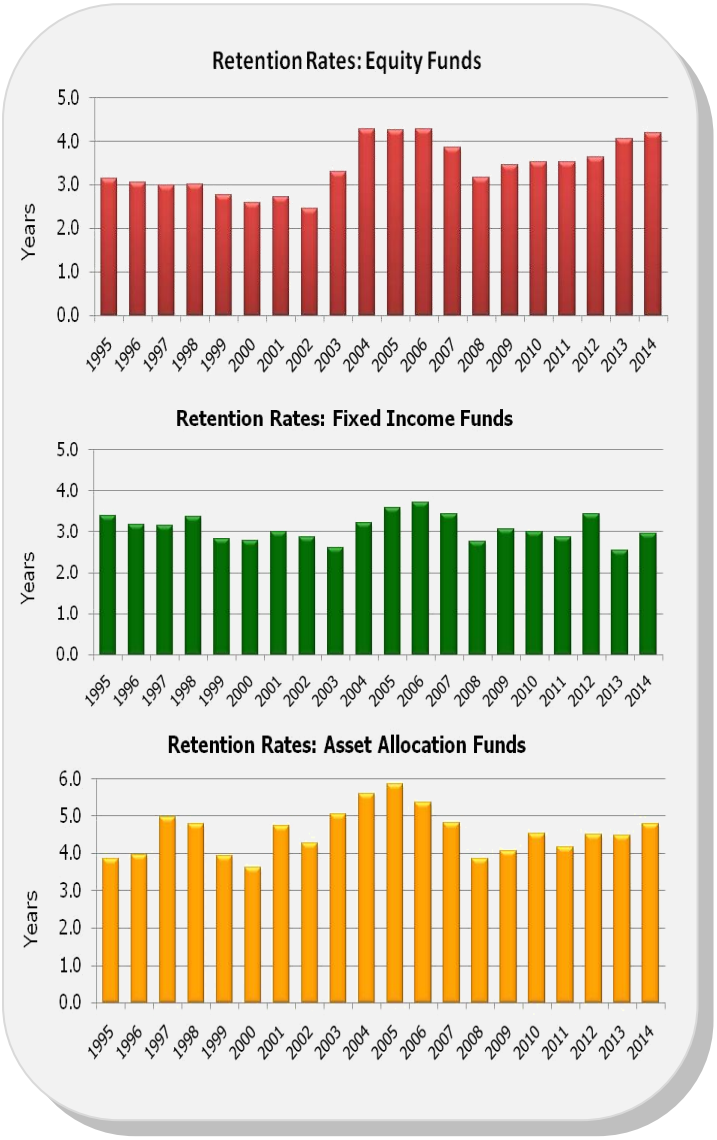
As is often the case, fund inflows and outflows corresponded with the direction of the market the following month. This was the case in 8 out of the 12 months examined in 2014. This would leave one to believe that investors are correctly timing the market and should therefore have the returns to prove it. Unfortunately for the average mutual fund investor, they gained nothing from their prognostications. To the contrary, the average mutual fund investor left a considerable amount money on the table by failing to take a prudent, long-term approach. Why is this so? One only needs to look at the very first month of the year to understand why. The net inflow of funds in December of 2013 was $44.4 million, the largest inflow since December of 2007 and the fourth largest inflow ever. The following month the S&P lost -3.45%, the worst performing month since May of 2012.

RETENTION RATES

Over the past 20 years, **equity mutual fund investors** have seldom managed to stay invested in their funds for more than 4 years. When they have done so, it has generally been during periods of bull markets. The years 2004-2006 saw retention rates above 4 years but after the market downturn of 2008, investors quickly fled their investments. Retention rates did not see levels above 4 years again until 2013.

Fixed income mutual fund investors have not remained invested in their funds for longer than 4 years at any time since 1995. The highest levels of retention occurred during a similar timeframe of 2004-2007.

Asset allocation mutual fund investors have continued to stay invested longer than their equity and fixed income counterparts. This data illustrates the importance of an asset allocation strategy and how it tends to curb negative behavior and lead investors to stay more committed to that strategy. Asset allocation fund retention rates have stood near or in some instances well above the 4 year mark throughout the past two decades.



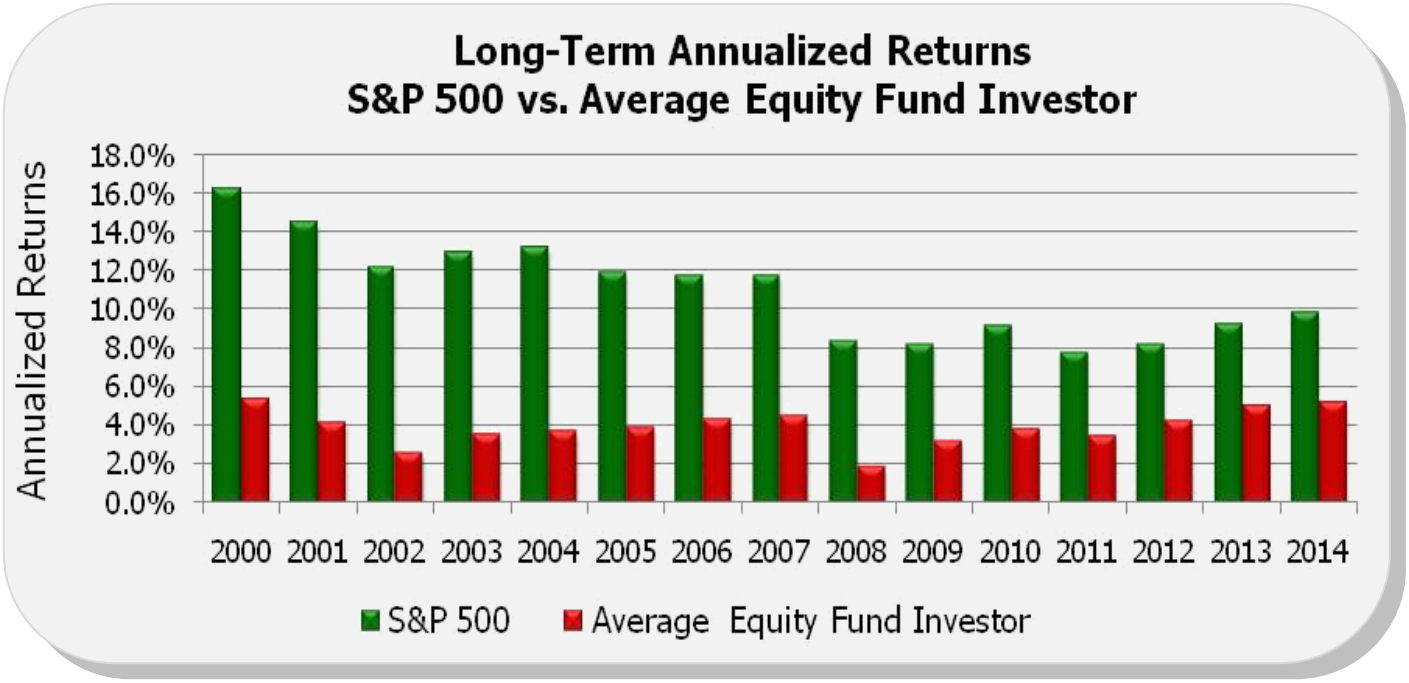
The Consequences of Poor Decision-Making

Perhaps the most compelling evidence that investor behavior leads to poor decision-making is the end result. An investor's goal is to maximize capital appreciation while minimizing capital depreciation. The average mutual fund investor has simply not accomplished either goal.

We have seen through the fund retention rates that investors tend not to "*stay the course*." We have seen from the Guess Right Ratio that when investors attempt to time the market they often correctly anticipate the market's direction but reap no reward for doing so. Most importantly, we have seen time and time again that investors underperform, both in the short-term and in the long-term, the overall market in virtually all market conditions.

Long-Term Results

When looking at the long-term annualized returns of the average equity mutual fund investor compared to the S&P 500 we see that the average investor has always lagged the overall market. While the gap between the average equity mutual fund investor and the S&P 500 has narrowed considerably in the past 15 years, the average investor has earned half of what they would have earned by buying and holding an S&P index fund.



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 assets, 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 where 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 are 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.

The QAIB Benchmark and Rights of Usage

Investor returns, retention and other industry data presented in this report can be used as benchmarks to assess investor performance in specific situations. Among other scenarios, QAIB has been used to compare investor returns in individual mutual funds and variable annuities, as well as for client bases and in retirement plans.

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For more information on creating a custom analysis or presentation using the QAIB data and methodology, contact Cory Clark at cclark@dalbar.com or 617-624-7156.

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