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## **2013 QAIB**

# Quantitative Analysis of Investor Behavior

### ***Advisor Edition***

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Prepared by  
DALBAR, Inc.  
Research & Communications  
Division

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Compliments of:  
Michael G Orchard, BSc. EE, MBA, CFP  
Manulife Securities Inc.  
519-736-3700

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Federal Reserve Plaza  
600 Atlantic Ave, FL 30  
Boston, MA 02210  
617.723.6400  
[www.dalbar.com](http://www.dalbar.com)

## The Disease of Investor Underperformance

In the past, the Quantitative Analysis of Investor Behavior (QAIB) study has measured various investor behaviors and the adverse effect on investment results for the average equity and fixed income investor. Much, but not all of the shortfall in investor returns are due to psychological factors<sup>1</sup> such as Loss Aversion, Narrow Framing, Herding or Optimism.

There are actually three primary causes for the chronic shortfall for both equity and fixed income investors:

1. Capital not available to invest. This accounts for 25% to 35% of the shortfall.
2. Capital needed for other purposes. This accounts for 35% to 45% of the shortfall.
3. Psychological factors. These account for 45% to 55% of the shortfall.

In 2005, the QAIB study introduced a third type of investor into the analysis; those invested in **asset allocation** funds. Asset allocation funds include a variety of fund types that all have two conflicting goals of capital preservation and appreciation. These funds try to find the tradeoff that best matches their investors' fears and aspirations. Asset allocation funds include:

- Balanced funds with defined levels of capital preservation,
- Target return funds with defined levels of appreciation,
- Lifestyle funds that are adapted to investors life experiences
- Target date funds that have a changing schedule of capital preservation and
- Other blended investment funds that offer differing strategies to achieve the same basic two goals of capital preservation and capital appreciation.

Asset Allocation is designed to handle the decision making for the investor which can materially reduce the shortfall due to psychological factors. Instead of irrational behaviors, investors that rely on competent asset allocators avoid the factors that are driven by fear or greed. As such, competent asset allocators become a cure for the pain caused by irrational investment behavior. Below are behavioral finance factors that may be cured by asset allocation.

**Loss Aversion** – The fear of loss is averted by highlighting the capital preservation aspect of an asset allocation strategy. If the investor understands the realistic exposure to capital loss, the withdrawal behavior is significantly curtailed.

**Narrow Framing** – With asset allocation, preservation and appreciation are bound together and discussion of one immediately raises discussion of the other. Narrow framing can be avoided by keeping both aspects highly visible at all times.

**Anchoring** – There is only a marginal benefit to anchoring from asset allocation. This benefit is realized if the asset allocation is perceived as “new and different” and not simply a repackaging of the familiar. Success here depends largely on the way in which the asset allocation is packaged.

**Mental Accounting** – The problems caused by mental accounting are cured almost completely by ensuring that multiple risk tolerances and multiple allocation strategies are available. The benefit is lost if a single “blend” is used to represent the investors' “average” risk tolerance.

<sup>1</sup> See QAIB 2012 for expanded discussion of psychological factors

**Diversification** – The problem with diversification is thinking that it is there when it is not. Qualified asset allocators avoid this problem by providing and then communicating their strategy of genuine diversification.

**Herding** – Asset allocation is unlikely to create a stampede. It is like good health, not a fad diet.

**Regret** – Explaining that asset allocation means giving up potential appreciation in exchange for the comfort of capital preservation avoids regret.

**Media Response** – It is difficult to label asset allocators as either villains or victors since they will always be somewhere in the middle. Expect no media response attacking asset allocators or praising them.

**Optimism** – Asset allocation replaces exuberant optimism with realistically balanced expectations when well communicated.

## The Allocator Cure

Asset allocation investing does not relieve the investor of decision making altogether nor does it guarantee “success.” Successful asset allocation investing requires investors to decide about two critical elements. The first is to balance capital preservation and appreciation to ensure that it is aligned with each specific purpose that an investor has<sup>2</sup>. The second is selecting a qualified allocator.

The alignment is achieved through a risk tolerance determination. Unlike the common practice today, the alignment must recognize that each investor has more than one purpose and each purpose can have a different risk tolerance. Also, it is critical to monitor risk tolerance as this changes over time. Risk tolerance can be effectively determined with an accessible and usable risk assessment.

Evaluating allocator quality requires analysis of the allocator’s underlying investments, decision making process and whether or not past efforts have produced successful outcomes. Specific criteria for determining if an allocator is qualified include:

- **Investment Quality:** Some allocators use a prescribed list of investments, so quality is based on the investment returns, volatility, cost and other traditional criteria. Other allocators have a selection process that is applied to a large universe of investments, so quality in this case is based on the selection process.
- **Allocation Process:** Qualified allocators have a well-controlled process based on sound investment principles. Evaluation of the process includes written procedures, automation, controls, exception handling and investor communication. Additional considerations include fiduciary status, experience and potential conflicts of interest.
- **Investor Outcomes:** Qualified allocators can demonstrate outcomes through performance in up, down and turbulent markets, by client testimonials<sup>3</sup> and by testing when a computer model is used.

### DETERMINING RISK TOLERANCE

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The most important tool for an investor to determine their risk tolerance is a risk tolerance assessment. It is most important because it is the most effective method to make investment decisions. Instead of learning the intricacies of every investment class, a risk tolerance tool gets to the strategic investment choice directly. When supported by a mix of balanced investment options, ranging from very conservative to very aggressive, the investor’s burden is relieved and a good investment decision is the result.

Relying on risk tolerance to drive investment elections is a well-accepted principle and arguably the most effective. Behavior studies have shown that when investors use asset allocations (such as balanced funds) they retain investments for longer periods. They rely on professional allocators to decide on how to achieve their risk tolerance, rather than trying to do it themselves.

Another critical consideration in using risk tolerance is the recognition that the tolerance changes significantly. Consequently, the tolerance should be re-tested periodically and certainly when there is a risk changing event (marriage, children, illness, death in the family, change in economic status, market upheaval, major changes in interest rates, world events, etc.).

<sup>2</sup> See QAIB 2009 for discussion of Purpose Based Investing

<sup>3</sup> See 1997 SEC no action letter to DALBAR.

A successful risk tolerance tool must meet two critical criteria. The first is accessibility and the second is usability.

Accessibility starts with being highly visible and effectively promoted. The tool must be repeatedly offered to investors as the “proper way to make investment decisions”. Obstacles such as logins, passwords and other burdens to using the tool should be eliminated. This promotion should be supported by information about the benefits of determining risk tolerance and how this achieves more investment success through a proper asset allocation strategy.

Usability is achieved when the risk tolerance tool facilitates decision making and carrying out the decisions. The following checklist recaps what a highly usable tool should do:

- ✓ Use language that is familiar to the average investor.
- ✓ Only ask investors questions they can easily answer.
- ✓ Ask questions that determine the level of capital preservation but assume the investor desires maximum appreciation.
- ✓ Limit tool to six questions.
- ✓ Provide investors with answers in simple, understandable language... “You are willing to take great risk” to “You need to avoid risks, even if it means making less money in the long run”.
- ✓ Relate answers to an investment strategy... “A very conservative investment is indicated”.
- ✓ Identify the available investment that best matches the investment strategy.

If a risk tolerance tool does not meet these standards it should be upgraded since it is the most important service that can be provided to the investor.

Implementation for employee-sponsored retirement plan participants may mean complying with certain regulations, but the benefits far outweigh the inconvenience. One such regulation is ensuring that the tool and any balanced funds selected meet the requirements of a qualified default investment alternative (QDIA). Depending on the specific implementation, the tool may also have to qualify under ERISA as a computer model.

## THE ADVANTAGE OF A HIGH QUALITY ALLOCATOR

Once an investor has determined their risk tolerance, they must select an allocator that will execute the investment strategy and achieve its goal. It is not enough to simply match one's investment objective with the name of a fund. Choosing a top allocator makes a significant difference in the results one will achieve. The next four sections illustrate how much advantage is gained by selecting a high quality allocator in down, up, turbulent and recent markets.

### Allocators in Down Market

The analysis shows that in a down year (2008) where average equity investors lost 41.66%, the average asset allocation investor lost significantly less, 30.53%. This is an eleven point advantage for the asset allocation investor in the down market.

Further examination shows that the advantage could be as much as twelve points greater for the top allocator, making the advantage over 25%. Selecting the very best allocator may not be feasible, but using a top quartile allocator would reduce the advantage by only three points.

2008 – Down Market Performance	Return for the Year	Advantage over Average Investor
Asset Allocation Investor Return	-30.53%	-
Top Allocator Return	-18.09%	12.44%
1 <sup>st</sup> Quartile Allocator Return	-21.63%	8.90%
2 <sup>nd</sup> Quartile Allocator Return	-25.01%	5.52%
3 <sup>rd</sup> Quartile Allocator Return	-27.46%	3.07%
4 <sup>th</sup> Quartile Allocator Return	-32.04%	-1.51%

### Allocators in Up Market

Equity investors are expected to have better returns in up markets (32%), than their asset allocation counterparts (19%), according to investment theories. While this was the case for the average investor, investors who selected the top allocator showed this theory to be wrong. The top allocator produced a 36% return.

First and second quartile allocators performed reasonably well, beating the average asset allocation investor by 17 and 10 points, respectively.

2009 – Up Market Performance	Return for the Year	Advantage over Average Investor
Asset Allocation Investor Return	19.11%	-
Top Allocator Return	36.03%	16.92%
1 <sup>st</sup> Quartile Allocator Return	29.27%	10.16%
2 <sup>nd</sup> Quartile Allocator Return	26.13%	7.02%
3 <sup>rd</sup> Quartile Allocator Return	22.92%	3.81%
4 <sup>th</sup> Quartile Allocator Return	19.36%	0.25%

### Allocators in Turbulent Market

Asset allocators have the greatest opportunity to demonstrate their value in markets such as 2011 that exhibited unprecedented ups and downs, ending the year very close to where it began.

Findings from the volatile year of 2011 show a six point advantage of using a first quartile allocator compared to one in the fourth quartile.

2011 – Turbulent Market Performance	Return for the Year	Advantage over Average Investor
Asset Allocation Investor Return	-1.27%	-
Top Allocator Return	11.85%	13.12%
1 <sup>st</sup> Quartile Allocator Return	3.87%	5.14%
2 <sup>nd</sup> Quartile Allocator Return	0.64%	1.91%
3 <sup>rd</sup> Quartile Allocator Return	-0.34%	0.93%
4 <sup>th</sup> Quartile Allocator Return	-1.92%	-0.65%

### Allocators' Recent Performance

The most recent performance is used to test if the allocator's record during exceptional periods has eroded. As a whole, allocators are remarkably consistent in the 2012 year.

Noteworthy in 2012, even 4<sup>th</sup> quartile allocators produced higher returns than the average asset allocation investor.

2012 – Recent Market Performance	Return for the Year	Advantage over Average Investor
Asset Allocation Investor Return	8.83%	-
Top Allocator Return	15.75%	6.92%
1 <sup>st</sup> Quartile Allocator Return	13.68%	4.85%
2 <sup>nd</sup> Quartile Allocator Return	12.50%	3.67%
3 <sup>rd</sup> Quartile Allocator Return	11.60%	2.77%
4 <sup>th</sup> Quartile Allocator Return	10.19%	1.36%

## WHO ARE THE ALLOCATORS?

It has been displayed that top allocators give investors a decided advantage. In order to capture this advantage, investors must be able to identify who the top allocators are. The following sections investigate asset allocation and how allocators' success should be measured.

### The "Fail-Safe" Investment Strategy

Asset allocation is usually considered to be the holy grail of investing. Investors, investment professionals, academics, regulators and law makers all treat asset allocation as the "fail-safe" principle of managing risks for an optimum return.

But the question of whether all asset allocations are good asset allocations has not been seriously addressed. This question leads directly to the topic of this article... Who is actually doing the allocating?

With such widespread acceptance, it is prudent to examine just who makes the "fail-safe" decisions. Asset allocation is practiced by just about anyone with the confidence to claim the ability to practice it. Asset allocators range from novice investors who learned that bond allocations should be the same as the age of the investor to academics testing variations of investment theories to investment professionals who manage large pension and endowment funds or their clients' wealth.

Is it possible that the asset allocation concept is so "fail-safe" that the inexperienced, the malicious and the brilliant minds all practice it resulting in the same benefit for investors? As ludicrous as this might sound, the financial community operates as if this were true.

This ludicrous belief is evident in the expectation that the novice investor will read the warnings contained in disclosures and develop an asset allocation strategy from them. Others expect that investors will be able to develop their own strategy after a half hour enrollment meeting. The belief extends to the thousands of advisors who use a financial plan to flawlessly guide clients into asset allocation strategies that pay proper commissions to the advisors. The madness continues into the investment firms that develop techniques to grow the assets they manage by deploying asset allocation strategies that fit their own fund families.

Asset allocators get a free ride because, win or lose, they can claim victory:

- If the strategy makes money, it obviously is a successful strategy!
- If the strategy loses money, the investor was protected from losing even more money.

Since either outcome proves that the strategy is successful, the asset allocator remains impervious to criticism.

### The Allocators

The term allocator refers to those making decisions regarding how to allocate a pool of assets. Allocators include:

- Mutual fund managers,
- Professional investment managers who build computer models and model portfolios,
- Investment advisors and consultants that make recommendations to clients,
- Investment committees that act on behalf of beneficial owners
- Investors that act independently.

## **The Big Test**

Asset Allocation had its stress test in 2008 when the investment markets collapsed. Investors were disappointed that their Asset Allocation strategies did not protect them from loss but for some reason, did not hold their allocators accountable.

Instead of correcting weaknesses that the market turmoil identified, allocators doubled down on whatever strategy they were using and hoped for a market correction and the passage of time to dull investors' memories.

## **Holding Allocators Accountable**

The "heads I win, tails you lose" nature of asset allocation makes the type of benchmarking used for investment managers ineffective. Additionally, allocators use different methods to pursue the same goal, making it impossible to establish peer groups on any basis but the goal.

Asset allocators must blend contradicting investment strategies and map the blend to investors' needs.

Evaluating asset allocators requires three separate criteria. The allocator must use good underlying investments, must have a viable process for making allocation decisions and must achieve goals in extreme market conditions.

### ***Good Underlying Investments***

Allocators should have a mechanism to select the underlying investments available for allocation. Without such a screener, allocators could be sending funds into inappropriate investments. While some allocators may have unrestricted access to markets, the universe is sometimes limited to pre-selected investments. In either case, the allocator must have a method of accepting or rejecting the investments being allocated.

### ***Viable Allocation Process***

Allocators should be able to demonstrate the process for making allocations and how external variables affect the allocation. The process should be repeatable and based on generally accepted investment theories. The process must be able to handle exceptional conditions and have the controls necessary to detect and correct failures. The process includes the tools, forms, computer models, etc. that are used to determine and monitor the asset allocation.

### ***Achieving Goals***

Asset allocation goals usually consist of capital preservation and appreciation components as well as a way to align investor needs to a particular strategy. Capital preservation and appreciation strategies may be static or may be actively managed to achieve the allocators' goals. The alignment to investors may be self-selection or done through data gathered by the allocator. The ultimate test of the success of the allocator is effectiveness in up, down and in turbulent markets. In the next section of this report, asset allocators with a similar goal are rated based on their success in up, down and turbulent markets. These ratings are only one of the dimensions described. A full evaluation involves examining the underlying investments and the process used.

## ALLOCATOR RESULTS RATINGS

The allocator results ratings presented here illustrate a real life evaluation of balanced funds that identify themselves as being "Moderate" in their name. Such funds include those with a static allocation %, others with limits on allocations and those with great flexibility to change allocations. Regardless of the fund's actual allocation, investors associate these funds with moderation. It is expected that investors select these funds based on their risk tolerance that is either known or determined separately. Only open end mutual funds are used for these ratings.

Moderate funds are considered to be the best test of an allocator since this goal puts equal emphasis on capital preservation and appreciation. The tests determine the allocator's ability to preserve capital and capture appreciation in an up market (2009) a down market (2008) a turbulent market (2011) and a recent market (2012). Only funds that were in full operation during these periods qualify for the results ratings.

**Note:** Firms offering funds that are technically moderate but do not name such funds as "moderate" are excluded from this ranking since this is not the way the funds are primarily known to the public.

**Market Condition Quartile Columns** These columns display the quartile for each year tested for each allocator. Four years are selected to capture allocator performance in down, up, turbulent and recent market conditions. A "1" indicates first quartile... among the best 25% of allocators. Conversely, a "4" indicates that the allocator is among the worst 25% of allocators in that year.

**Allocator Results Rating Column** is based on the quartile in each of the four years being tested. A score of 100% is earned if the allocator has first quartile performance in each of the four years.

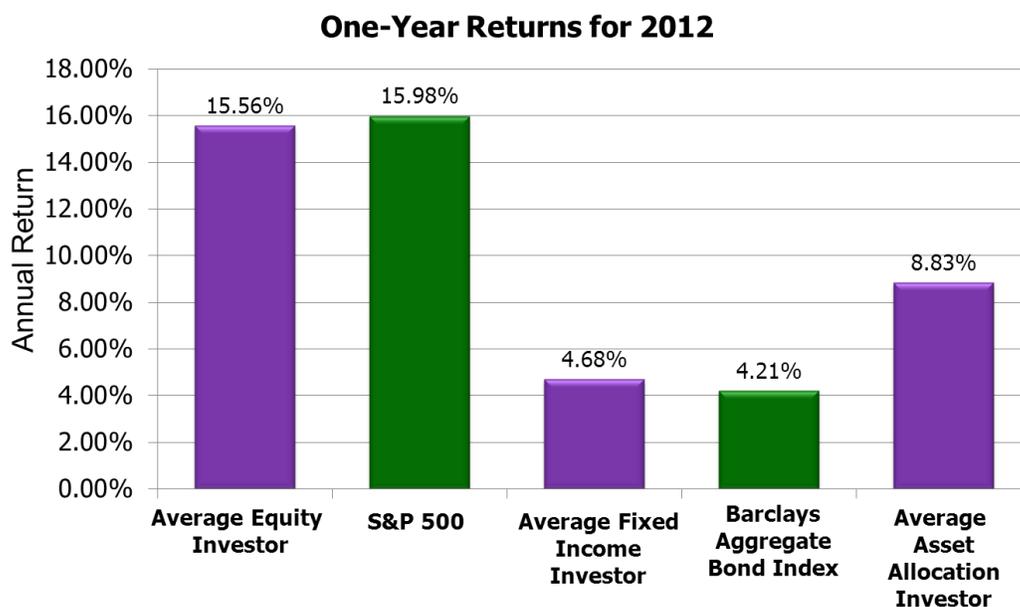
Rank	Allocator Firm	Allocator Results Rating	Market Condition Quartile*			
			Down (2008)	Up (2009)	Turbulent (2011)	Recent (2012)
1	MFS	88%	2	1	2	1
2	Invesco	81%	4	1	1	1
	VALIC	81%	3	2	1	1
4	John Hancock	78%	2/2	1/1	1/1	4/3
5	Delaware	75%	1	1	3	3
	MainStay	75%	2	3	2	1
7	American Century	69%	2/2	4/3	2/1	2/1
7	BlackRock	69%	3	2	3	1
	Columbia	69%	2	2	2	3
	Great-West	69%	1	3	3	2
11	SEI	63%	4/3	2/4	1/1	1/4
	Pacific Life	63%	3	2	3	2
	Wells Fargo	63%	2	3	2	3
14	ING	59%	4/4/2/1	3/3/3/4	3/2/1/3	1/2/4/2

Rank	Allocator Firm	Allocator Results Rating	Market Condition Quartile*			
			Down (2008)	Up (2009)	Turbulent (2011)	Recent (2012)
15	Franklin Templeton	56%	1	2	4	4
	Nationwide	56%	1	4	3	3
	Prudential/Target	56%	3	1	4	2
	RidgeWorth	56%	1	4	2	4
	Russell	56%	1	3	3	4
	Thrivent	56%	3	2	4	2
21	HSBC	50%	4	2	4	2
	USAA	50%	4	1	4	3
	Vanguard	50%	3	4	2	3
	Wilmington	50%	3	2	4	3
25	Guggenheim	44%	1	4	4	4
	MEMBERS	44%	4	4	1	4
	Pioneer	44%	4	1	4	4
28	Oppenheimer	38%	4	3	4	3

\* Multiple quartiles are shown when a firm has multiple fundamentally different moderate balanced funds (not merely share class differences).

## Investor Behavior in a Bull Market

In 2012, investors experienced a less volatile and more easily navigable market. Despite this fact, it remained a market the average investor was unable to beat. Historically, the gap between the average investor's returns and the market's return narrows in bull markets. This turned out to be the case in 2012, when the average equity investor underperformed the market by only 0.42% and the average fixed income investor slightly outperformed the market by 0.47%.



The average investor was on par with the market in 2012 but what does that mean to those individuals and their long-term goals? Given the underperformance of previous years, it means little change to investors' medium and long-term investment success. This is evidenced by the 3, 5, 10 and 20 year returns of the average investor compared to the S&P 500.

	Investor Returns <sup>4</sup>			Inflation	S&P 500	Barclays Aggregate Bond Index
	Equity Funds	Asset Allocation Funds	Fixed Income Funds			
<b>20 Year</b>	4.25%	2.29%	0.98%	2.43%	8.21%	6.34%
<b>10 Year</b>	6.05%	2.38%	1.17%	2.41%	7.10%	5.18%
<b>5 Year</b>	-0.84%	-0.22%	1.64%	1.80%	1.66%	5.95%
<b>3 Year</b>	7.63%	4.68%	2.85%	2.06%	10.87%	6.19%
<b>12 Months</b>	15.56%	8.83%	4.68%	1.75%	15.98%	4.21%

<sup>4</sup> 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 fact that the average investor could not beat the market in the best of times indicates that behavioral factors continue to make market timing a bad idea. Fear cultivated from previous years caused investors to sell low while short-term rallies tempted investors to buy high. While investors attempted to maximize returns by guessing right, they in fact guessed wrong.

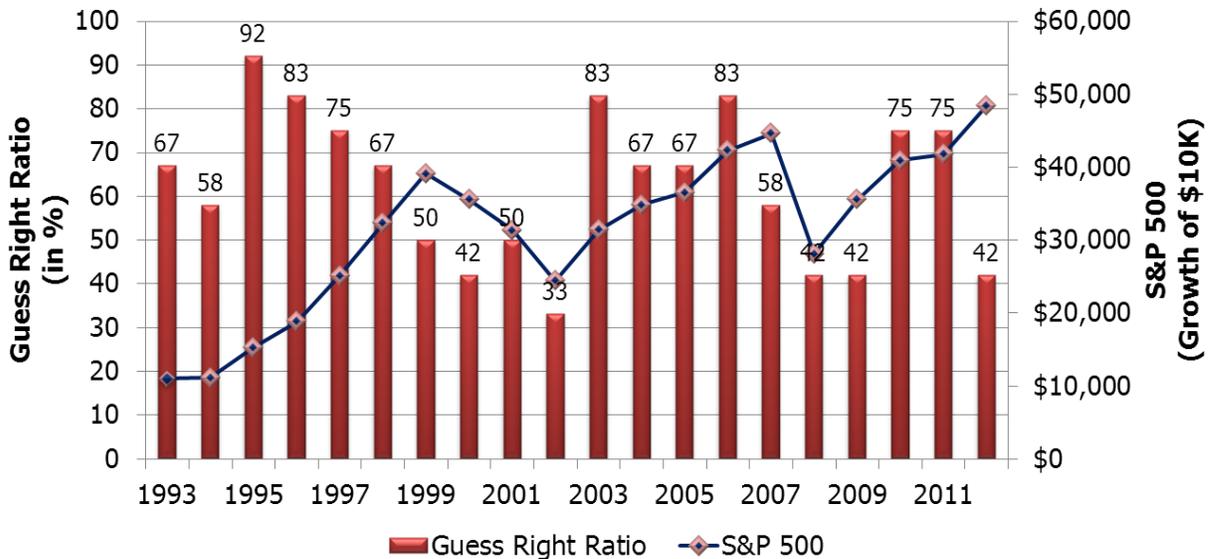
### MARKET TIMING SUCCESS/FAILURE

DALBAR continues to analyze the investor’s decision making process for their purchases and sales. The first 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. In general, investors make money when the Guess Right Ratio exceeds 50%.<sup>5</sup>

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 their returns. The Guess Right Ratio shows that investors who execute purchases or sales in response to something other than a prudent investment decision erode return created by portfolio managers.

From 2000 through 2002, the S&P 500 declined each year. During that same timeframe, investors experienced a Guess Right Ratio at or below 50%. This same trend emerged again in 2008, when the market experienced a significant decline and investors’ attempts to time the market were largely unsuccessful (42%). As the markets improved, investors began to make the right decisions more often in 2010 and 2011. However, in 2012 investors’ Guess Right Ratio was the second lowest since 1993. While the market was rising, investors were leaving money on the table by moving in and out of funds at the wrong time.

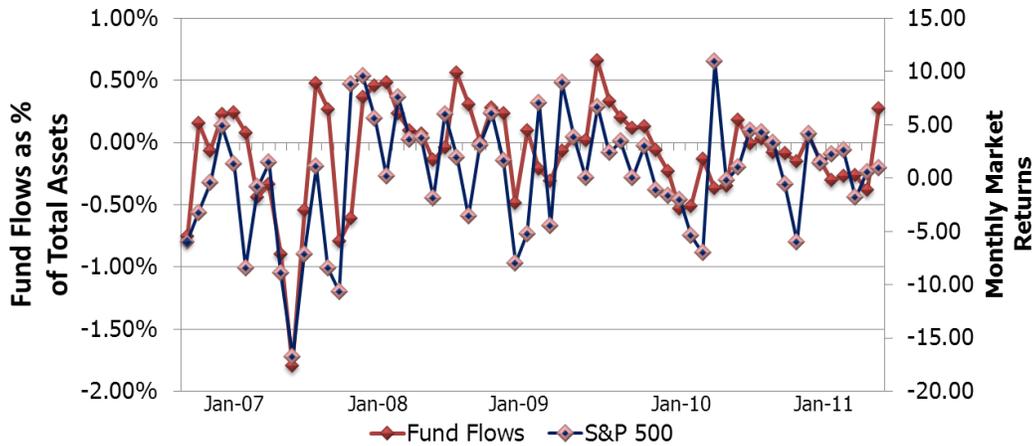
### How Often Do Investors Guess Correctly?



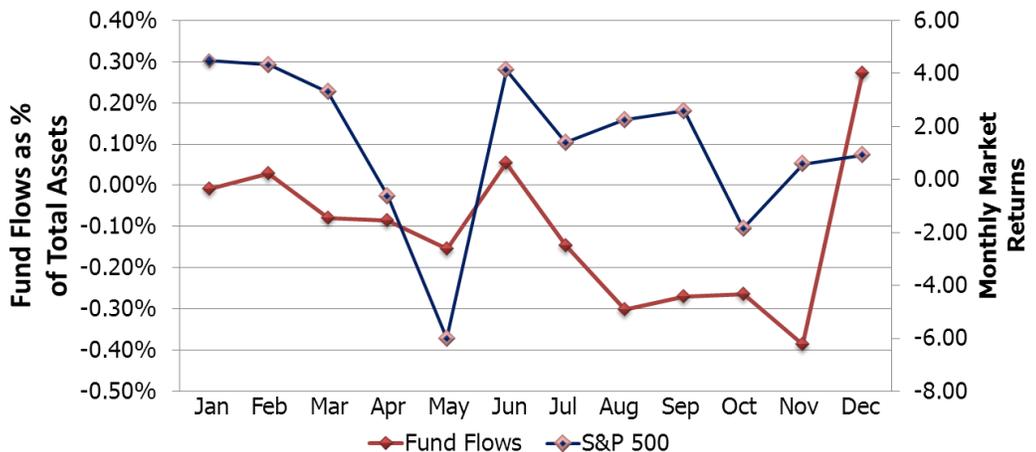
<sup>5</sup> Please note that the Guess Right Ratio is not dollar weighted, so it cannot be used to measure returns.

Another form of decision making analysis involves looking at investor fund flows. The following charts illustrate how mutual fund inflows and outflows compare with monthly market returns. Notice how the two data series are often on opposite sides of the x-axis, further underscoring the fact that investors fail at timing the market. Incorrect market timing results in inflows when the market declines and outflows when the market rises.

### Investor Fund Flows and Market Performance for the 5 Years Ending 12/31/12



### Investor Fund Flows and Market Performance for Calendar Year 2012

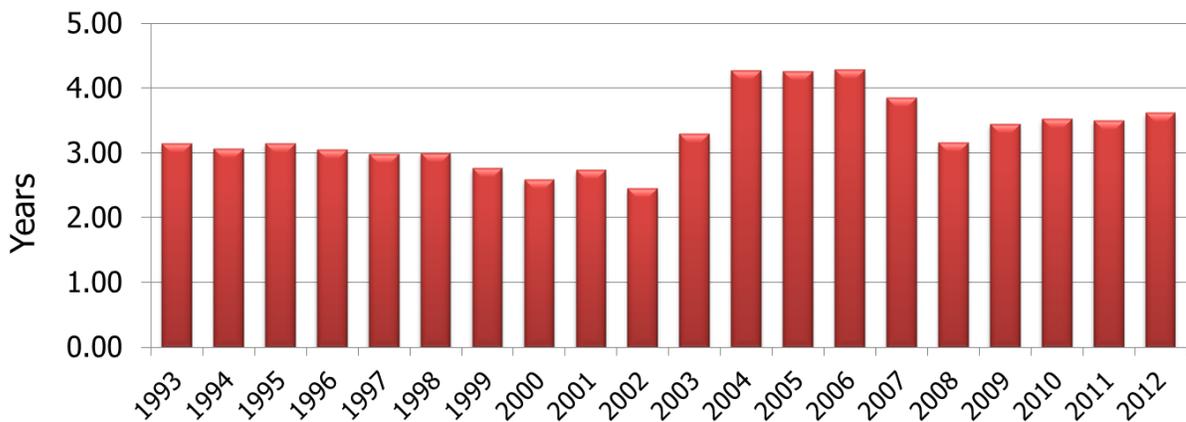


Correcting the folly of market timing can be approached in one of two ways. The first is to guess correctly instead of incorrectly. This approach is unrealistic and clearly does nothing to alleviate the market timing problem, in fact only serves to reinforce it. A second way to avoid market timing pitfalls is to not time the market but instead adopt a buy and hold strategy that has rewarded prudent and patient investors for decades. The following section will explore evidence that buy and hold strategies are not being employed by the average investor.

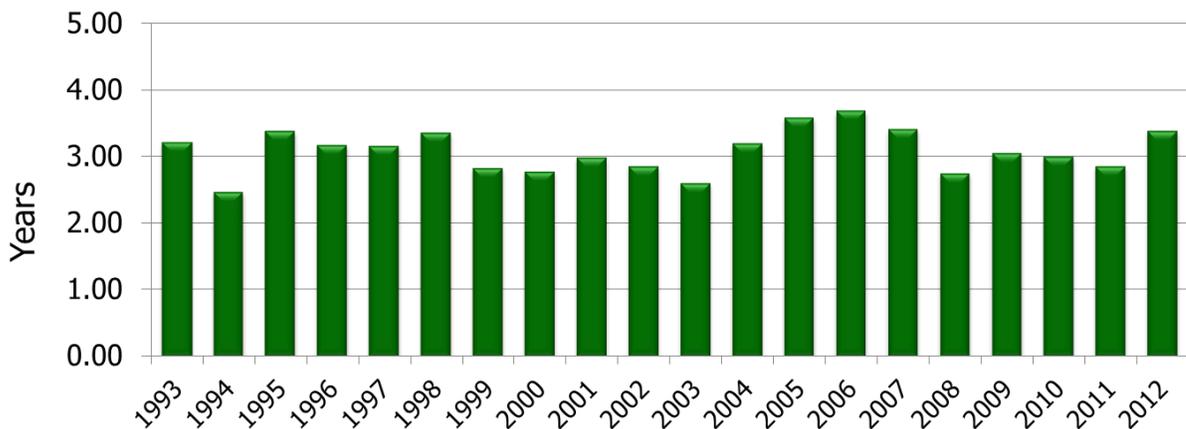
## RETENTION RATES

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 periods to derive the benefits of the investment markets. 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.

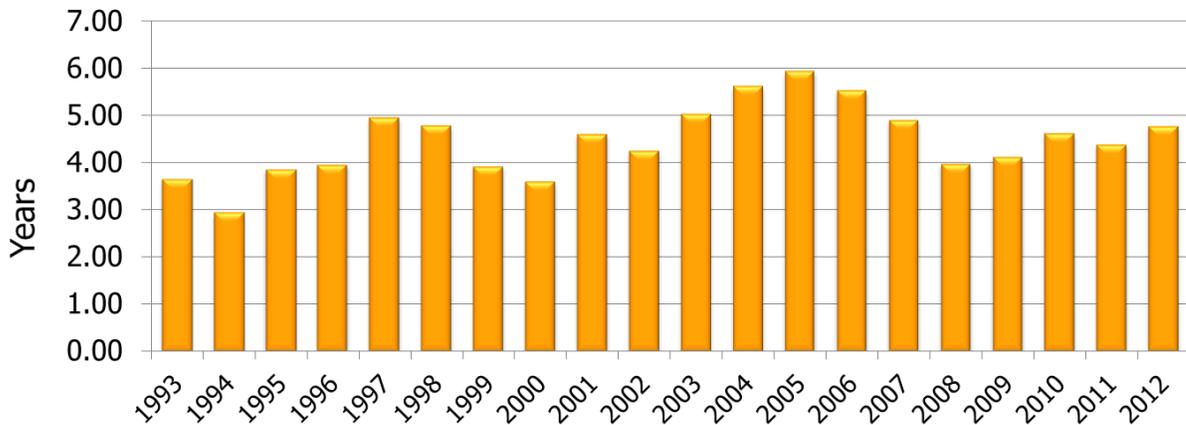
### Retention Rates: Equity Funds



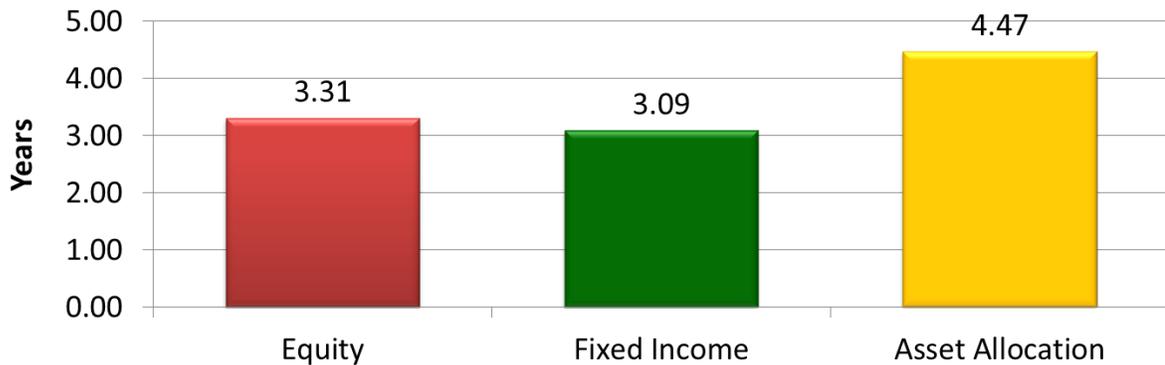
### Retention Rates: Fixed Income Funds



### Retention Rates: Asset Allocation Funds



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



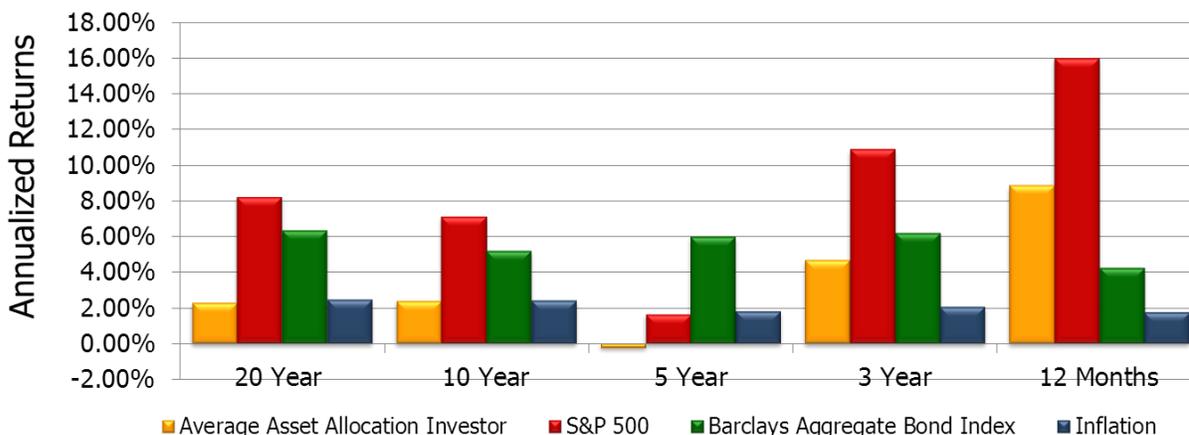
In 2012, as in years past, asset allocation fund investors have remained invested in their respective funds longer than equity or fixed income investors. Higher retention rates are evidence that behavioral factors are muted when investors are invested in asset allocation funds. Investors' expectations when investing in asset allocation funds may explain why they stay invested longer. Asset allocation investors should not expect their funds to perform as well as an equity fund or preserve capital as well as a fixed income fund. They are also less likely to see dramatic price swings that tempt buying and selling. Overall, the average asset allocation mutual fund investor has stayed invested in their funds over a year longer than equity and fixed income mutual fund investors.

## ASSET ALLOCATION FUNDS

In 2012, the average asset allocation investor outperformed Barclays Aggregate Bond Index while underperforming the S&P 500. This outcome is not surprising. One would expect funds that are allocated in both fixed income and equities to perform somewhere between a fixed income and an equity index. However, when looking at long-term returns, the average asset allocation investor has underperformed both equity and fixed income indices. For the 5, 10 and 20-year timeframes, the average asset allocation investor failed to keep up with inflation.

	Average Asset Allocation Investor	S&P 500	Barclays Aggregate Bond Index	Inflation
20 Year	2.29%	8.21%	6.34%	2.43%
10 Year	2.38%	7.10%	5.18%	2.41%
5 Year	-0.22%	1.66%	5.95%	1.80%
3 Year	4.68%	10.87%	6.19%	2.06%
12 Months	8.83%	15.98%	4.21%	1.75%

### Asset Allocation Funds vs Comparative Indices (For period ending December 31, 2012)



The overall underperformance of the average asset allocation investor speaks to the lesser, but still present behavioral factors influencing asset allocation investors. It also speaks to the quality of the investment strategy being implemented by the various asset allocation funds.

While the average asset allocation investor does not compare well against the market, they have fared better against the average equity and fixed income investor. In 19 of the past 20 years, the average asset allocation investor has outperformed either the average equity or fixed income investor. Over the long-term, returns for the average asset allocation investor are below that of the average equity investor but above that of the fixed income investor. These numbers point to asset allocation funds' ability over the long-term to appreciate capital better than fixed income funds.

For the 5 years from the market meltdown of 2008 to present, the average asset allocation investor outperformed the average equity investor but underperformed the average fixed income investor. This highlights the asset allocation funds' ability to preserve capital better than equity funds in a bear market.

## Systematic Investing

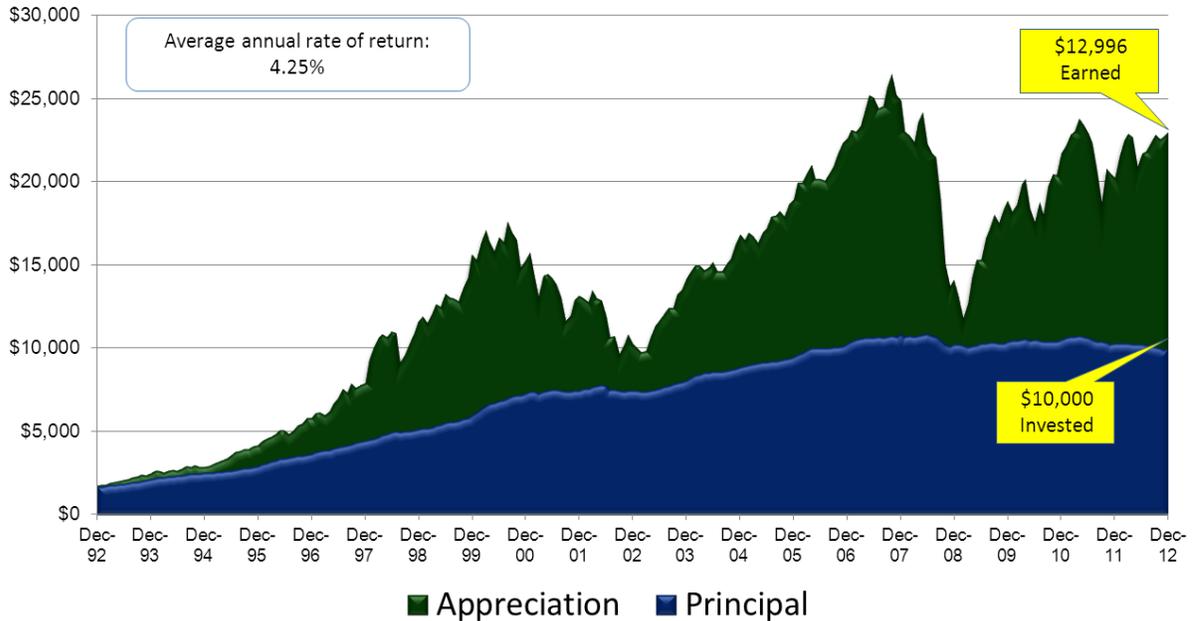
On the next three pages you will find charts that compare a hypothetical \$10,000 investment made by the average investor to a series of systematic investments totaling the same \$10,000. This comparison is provided for the average equity, fixed income and asset allocation mutual fund investor over a comparable twenty year time horizon.

### KEY FINDINGS

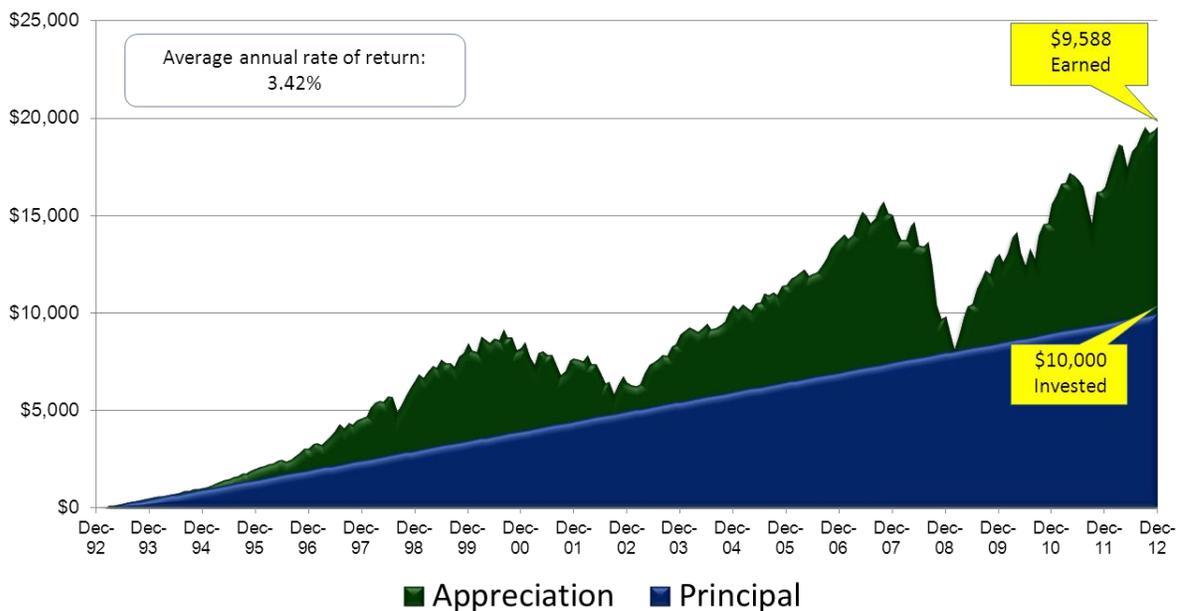
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- ✓ 2012 marks the 3<sup>rd</sup> year in a row in which the average equity investor outperformed the systematic equity investor (**see charts, page 19**). The average equity investor earned \$12,996 against a systematic investor who earned \$9,588.
- ✓ The systematic equity investor underperforming the average equity investor does not mean that investors should abandon the concept of systematic investing. It should however cause investors or their financial advisors to seek new strategies to counteract investor behavior that leads to inferior investment results.
- ✓ As in previous years, the average systematic fixed income investor overwhelmingly outperformed the average fixed income investor over the twenty year period by earning over four times as much (**see charts, page 20**).

## Average Equity Fund Investor 1993 - 2012

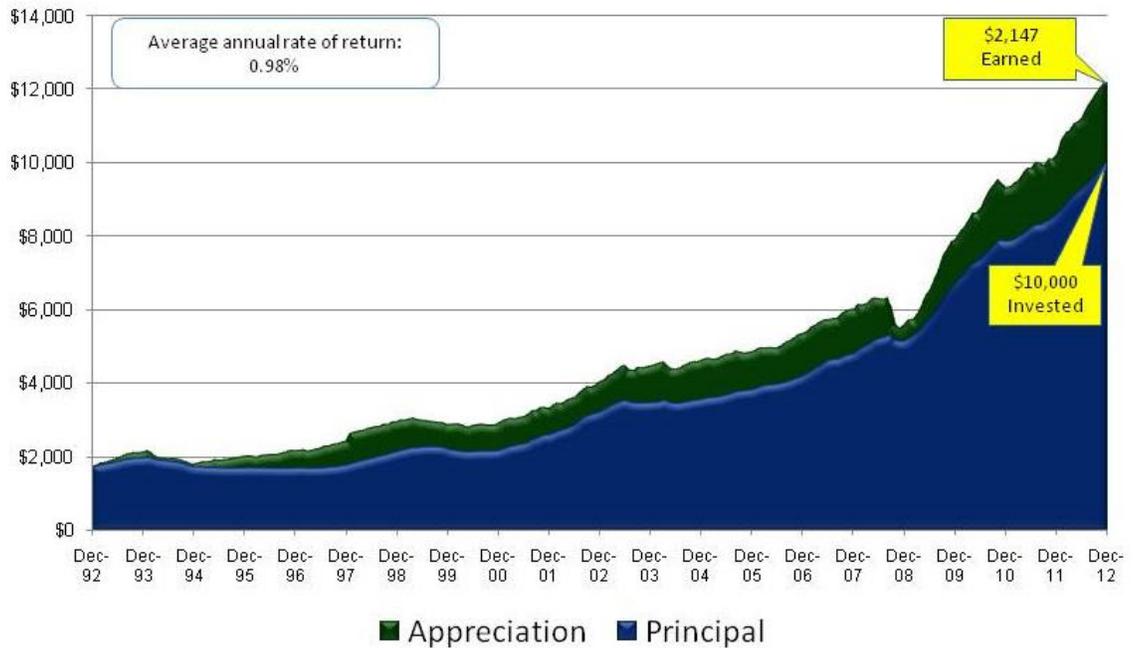


## Systematic Equity Investor 1993 - 2012

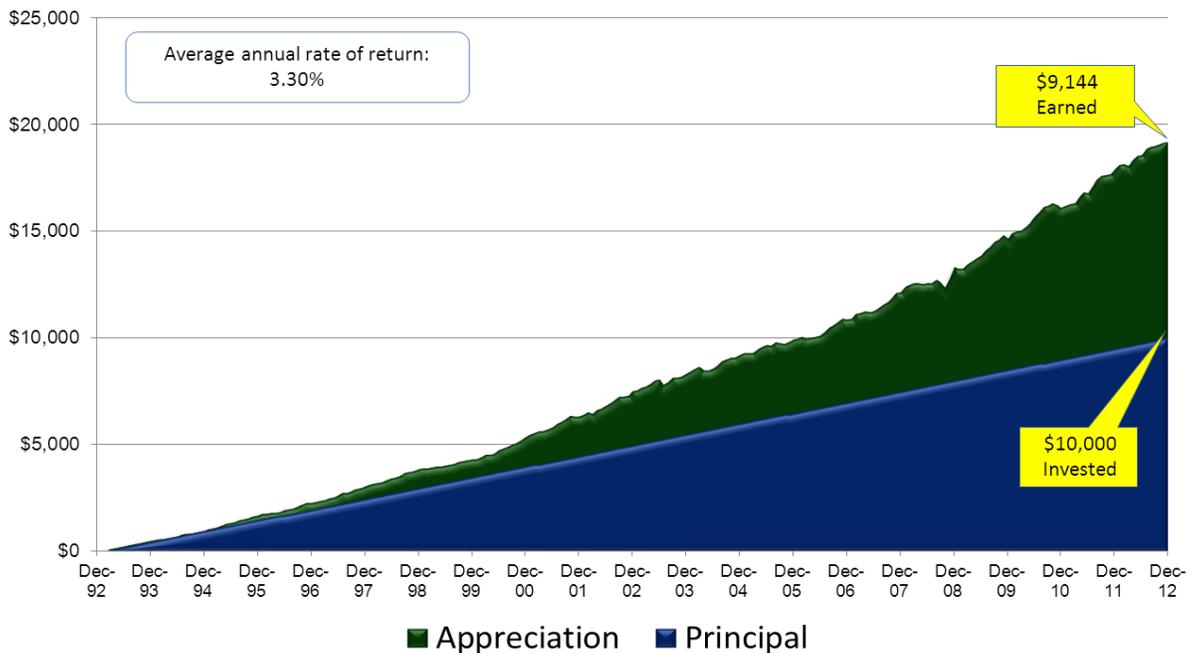


*The systematic equity investor is represented by the S&P 500, an unmanaged index of common stock. Data supplied by Standard & Poor's. Indexes do not take into account the fees and expenses associated with investing, and individuals cannot invest directly in any index. Past performance cannot guarantee future results. Systematic investing involves continues 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 1993 - 2012

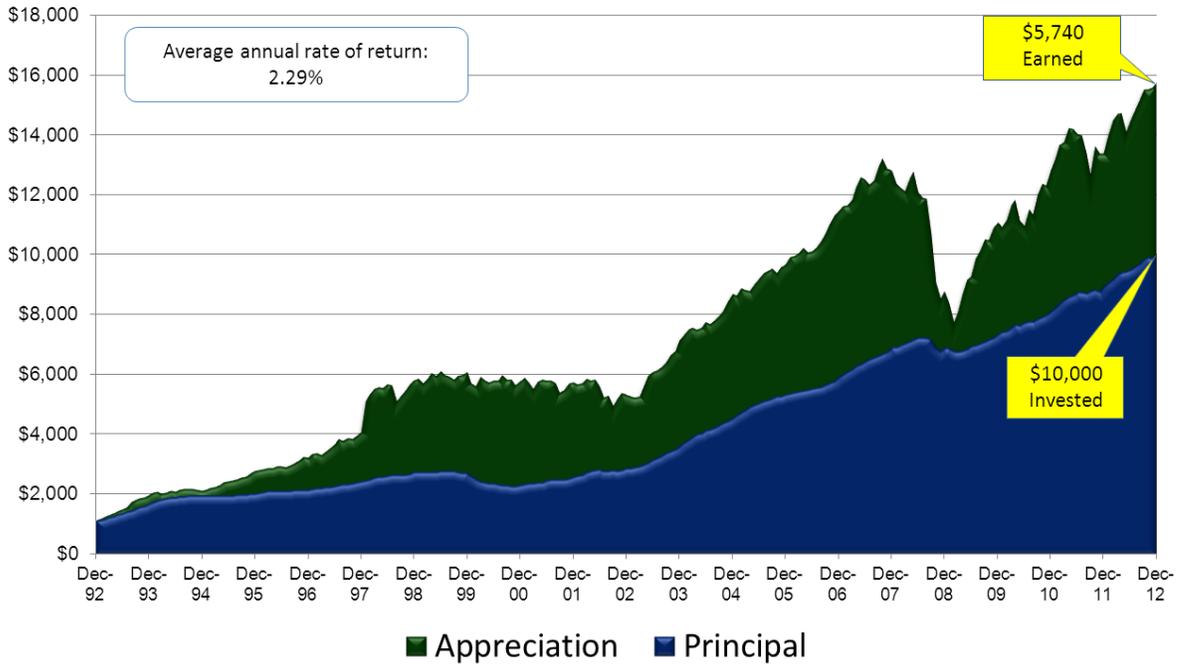


### Systematic Fixed Income Investor 1993 - 2012

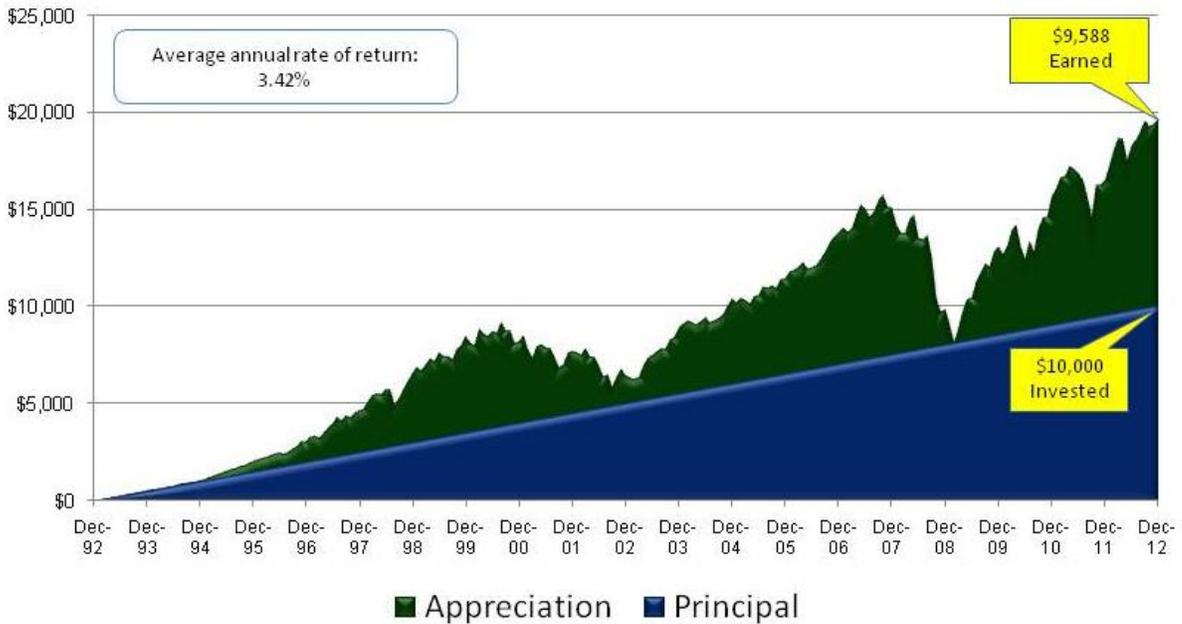


*The systematic fixed income investor is represented by the Barclays Aggregate Bond Index. Past performance cannot guarantee future results. Systematic investing involves continues investing in fixed income assets regardless of price levels. It cannot assure a profit or protect against loss during declining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

### Average Asset Allocation Fund Investor 1993 - 2012



### Systematic Equity Investor 1993 - 2012



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## 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 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.

## About This Report: QAIB 2013

Since 1994, DALBAR's Quantitative Analysis of Investor Behavior (QAIB) has been measuring the effects of investor decisions to buy, sell and switch into and out of mutual funds over both 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 continue to improve the performance of independent investors on the one hand and of professional financial advisors on the other hand by incorporating the factors that influence behaviors that determine the outcome of investment or savings strategies. QAIB offers guidance on how and where investor behaviors can be improved.

QAIB 2013 examines real investor returns in equity, fixed income and asset allocation funds. The analysis covers the 20-year period ending December 31, 2012, encompassing both the drop at the turn of the millennium, the crash of 2008, plus recovery periods of 2009, 2010 and 2012. This year's report discusses the advantages of asset allocation and how an asset allocator should be evaluated for effectiveness.

The report explains how investors and advisors adapt to changing market conditions and produce investor returns using investor behaviors, the psychological factors that drive them and the knowledge of how investment classes have acted in the past.

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 are more successful than those who time the market.***

### **ABOUT DALBAR, INC.**

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

### **METHODOLOGY**

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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, 1993, to December 31, 2012, 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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## THE QAIB BENCHMARK AND RIGHTS OF USAGE

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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 Stephanie Ptak at [sptak@dalbar.com](mailto:sptak@dalbar.com) or 617-624-7134.***

This study was conducted by an independent third party, DALBAR, Inc. A research firm specializing in financial services, DALBAR is not associated with Manulife Securities Inc. nor with Michael Orchard. The information herein is believed to be reliable, but accuracy and completeness cannot be guaranteed. It is for informational purposes only and is not a solicitation to buy or sell securities.



Federal Reserve Plaza  
600 Atlantic Ave, FL 30  
Boston, MA 02210  
617.723.6400  
[www.dalbar.com](http://www.dalbar.com)