Beyond Traditional Asset Allocation

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I'VE GOT A STOCK HERE THAT COULD REALLY EXCEL
REALLY EXCEL?
EXCEL?
SELL?
SELL?
SELL
SE
SELL!
SELL!
KAL '89 BALTIMORE SUN
SELL!
SELL!
SELL!
SELL!
THIS IS MADNESS! I CAN'T TAKE ANYMORE
GOOD BYE?
GOOD BYE!
BYE?
Buy?
Buy!
Buy!
BUY!!
Buy!
Buy!
Buy
I'VE GOT A STOCK HERE..

The '*Textbook*' Way Of Doing Asset Allocation…

Investor Preferences

- Assess risk tolerance

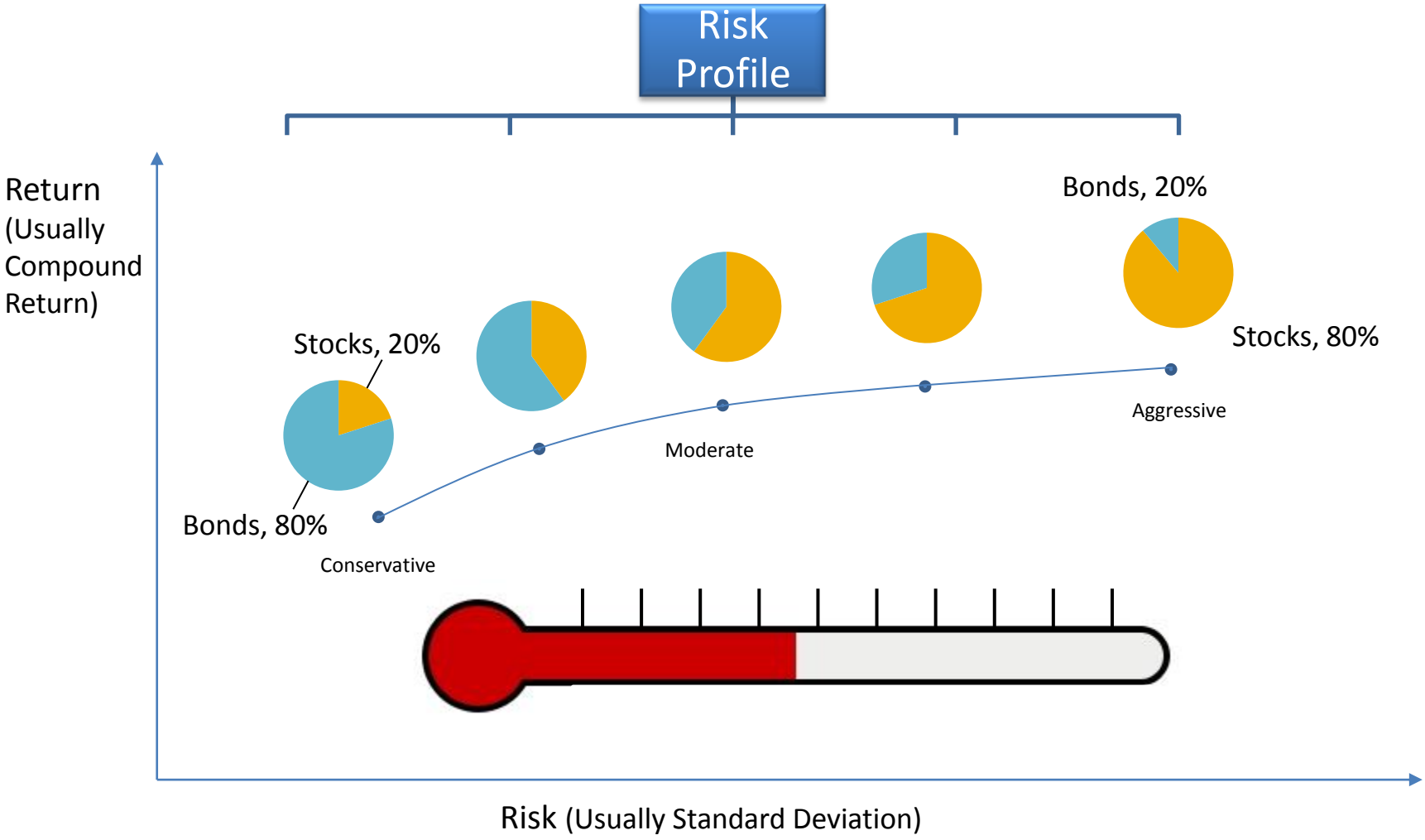
Investment Models

- Define Asset Classes
- Develop Capital Market Assumptions

Tradeoffs / Optimization

- Use Mean-Variance Optimization (MVO)

The *Textbook* approach



And Then….

And Then Events Like 2008 Happen…

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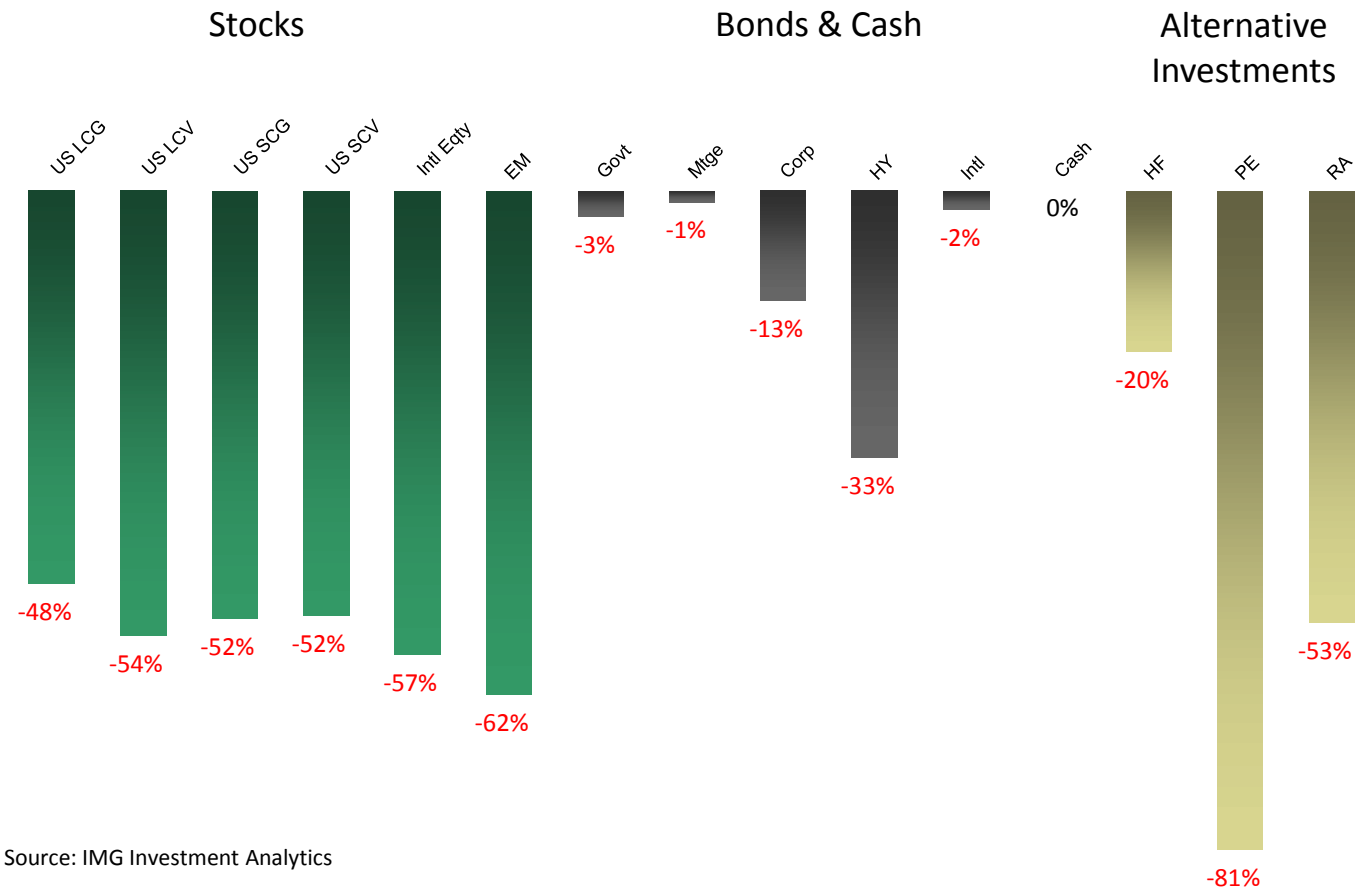
Maximum Drawdown

Recent Bear Market (Nov 2007 – Jul 2009)



Source: IMG Investment Analytics

What Investors Really Want…

Sample Goal Descriptions – Entrepreneur's Perspective

Future Income Goal

- Maintain, or potentially improve, my and my wife's standard of living.
- A good portion of our income must be very safe, but then we can be more aggressive.
- We don't have any other income goal at this time.

Capital Preservation Goal

- My next most important goal is to preserve a substantial amount of capital for bequests.
- All of this capital must be invested in safer, lower risk portfolio.
- This goal will give us peace of mind if something unexpected happens.

Capital Growth Goal

- After funding the first two goals, remaining capital can be invested in a riskier portfolio to potentially grow our wealth.
- The assets for this goal may be used to fund additional charitable causes, or further enhance our standard of living.

Sample Goal Descriptions – Modeling Perspective: $45MM Initial Capital

Future Income Goal

- **Time Horizon:** 30-65 Years from now
- **Value & risk thresholds:** Desired future **annual** spending in today's dollars:
  - Essential Income: $750,000 with 95% Probability of Success P(S)[1]
  - Important Income: $375,000 with 75% P(S)
  - Discretionary Income: $375,000 with 55% P(S)

Capital Preservation Goal

- **Time-Horizon:** 30 Years from now
- **Value & risk thresholds:** Attempt to preserve, with 95% P(S), the inflation adjusted value of today's capital remaining after meeting future income goals

Capital Growth Goal

- **Time-Horizon:** 30 Years from now
- **Value & risk thresholds:** Attempt to aggressively grow any capital remaining after meeting the future income and capital preservation goals. Allocate this surplus to a portfolio with the highest potential future value with 55% P(S) at year 30

[1] P(S) = Probability of success, reflects degree of confidence associated with future income requirement.

And Each Goal Can Be Mapped To A Portfolio

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Portfolio Selection in Goals-Based Wealth Management

HUNGJEN WANG, ANIL SURI, DAVID LASTER, AND HIMANSHU ALMADI

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Portfolio Selection in Goals-Based Wealth Management

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The mean–variance framework developed in Markowitz's [1952] groundbreaking paper, "Portfolio Selection," has in recent decades become the workhorse model for wealth and investment managers. In that framework, each investor weighs the expected return on her overall portfolio against its variance (or standard deviation) to identify the efficient portfolio that delivers the highest expected return for the level of risk the investor is willing to bear.

While logical and normative, this approach takes no explicit account of whether the portfolio helps the investor achieve her goals. It also fails to account for the array of well-documented behavioral propensities that people exhibit. This approach is appropriate for investors who seek to achieve all their goals by investing in a single mean–variance efficient portfolio. However, as Thaler [1985] points out, investors typically do not focus on overall portfolio performance. Rather, they are prone to mental accounting and to making investment decisions based on the specific goal to be met. Shefrin and Statman [2000] propose "behavioral portfolio theory," which posits that investors do not view their portfolios holistically but, rather, associate each goal with a subportfolio. From the investor's perspective, each goal has its own aspiration level, or acceptable level of risk with respect to meeting the goal. Thus, someone nearing retirement might be risk averse with the portion of her wealth associated with retirement goals, much less risk averse regarding the portion associated with home renovations, and even risk seeking with respect to the portion devoted to the goal of amassing substantial wealth.

An emerging consensus in the wealth management industry favors a goals-based approach to advising clients on asset allocation and wealth management; see Brunel [2003, 2006], Chhabra [2005], Chhabra, et al., [2008] and Nevin [2004], among others. More fundamentally, best practices for financial planning, as advocated by the Certified Financial Planner (CFP) Board and encapsulated in international financial planning standards, identify eliciting clients' financial goals as the foundation of sound wealth management.[1] A goals-based wealth management approach reflects investor concerns in a practical manner and, to paraphrase Brunel [2010], helps the investor "bond" with her portfolio. This improved understanding could help the investor stick with her overall financial plan in the inevitable periods of market stress.

Under the goals-based wealth management framework, investors first specify their goals and priorities. Each investment goal, with its associated "subportfolio problem,"[2] is treated separately and solved independently (Barberis and Huang [2001]). Because each goal is likely to be met with some acceptable degree of uncertainty, investors are less prone to overreact to extreme market conditions.

Sample Goals Based Asset Allocation: Resources Are Dedicated to Fund Prioritized Goals

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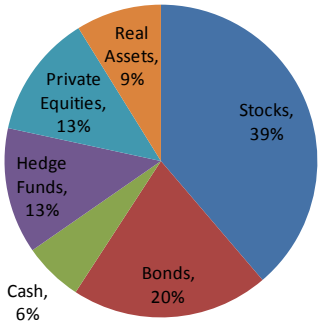
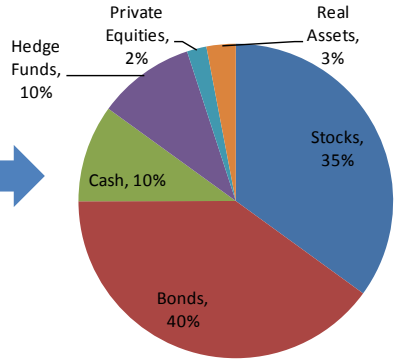
1

Future Income Goal



2

Capital Preservation Goal



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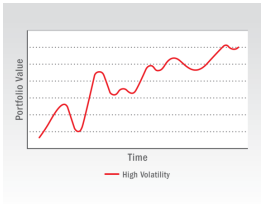
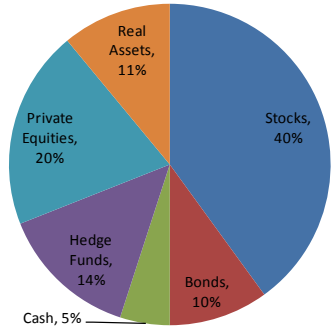


Capital Growth Goal



This is a hypothetical example meant for illustrative purposes only. It does not reflect an actual investment, nor account for the effects of taxes, any investment expenses or withdrawals. Investment returns are not guaranteed and results will vary. Investment returns cannot be predicted and will fluctuate. This illustration is not intended to serve as investment advice since the availability and effectiveness of any strategy is dependent upon an individual investor's facts and circumstances.

Resulting Customized Goals-Based Asset Allocation

- **Investable Assets:** $45.0MM
- **Expected Inflation:** 2.5%
- **Risk-free rate:** Zero Coupon Yield Curve as of Dec 2011
- *Risk, Return and Correlation assumptions are based on Merrill Lynch capital market assumptions[1] and are subject to annual review*
- *All analyses and assumptions are on a pre-tax basis*

Exhibit 1

Portfolio[1] for Goals within Budget ($45MM)

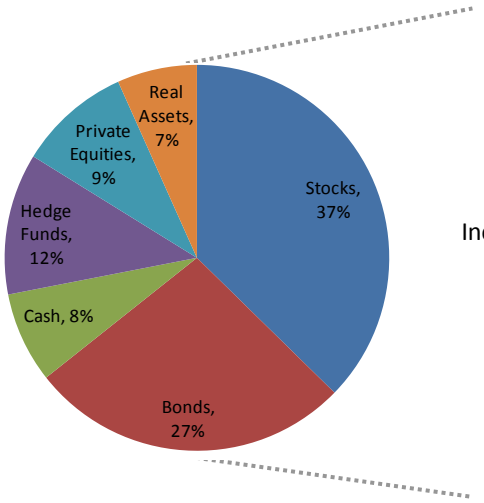
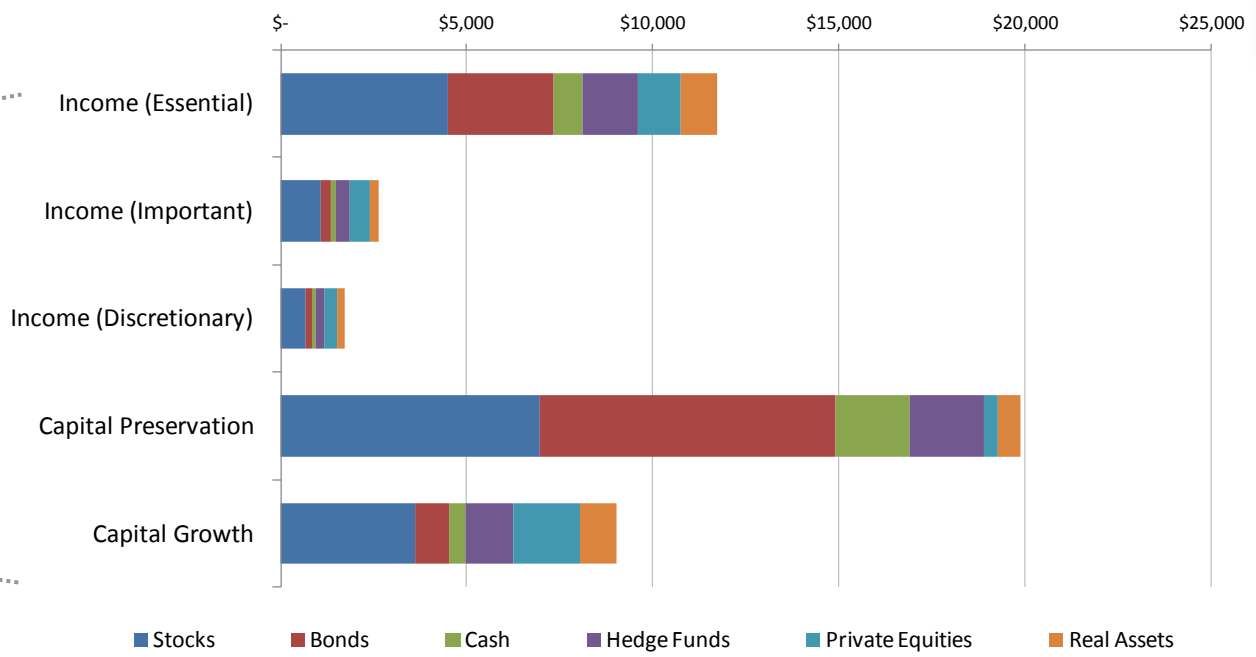


Exhibit 2

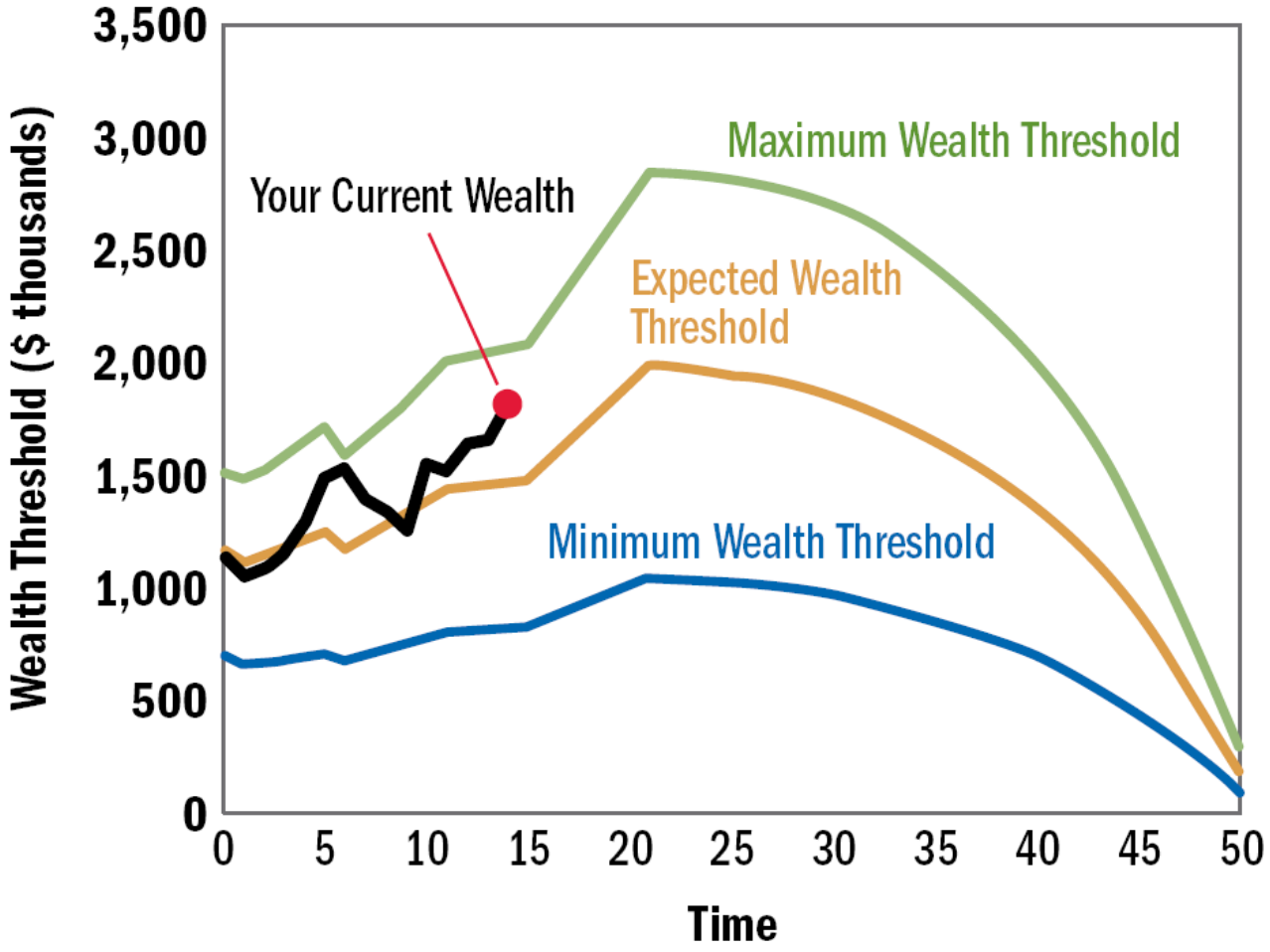
Goals based asset allocation for each goal



Budget Remaining
$33.3MM
$30.6MM
$28.9MM
$9.0MM
$0.0MM

[1] Allocations are as of Jan 10, 2012 and are subject to change over time.

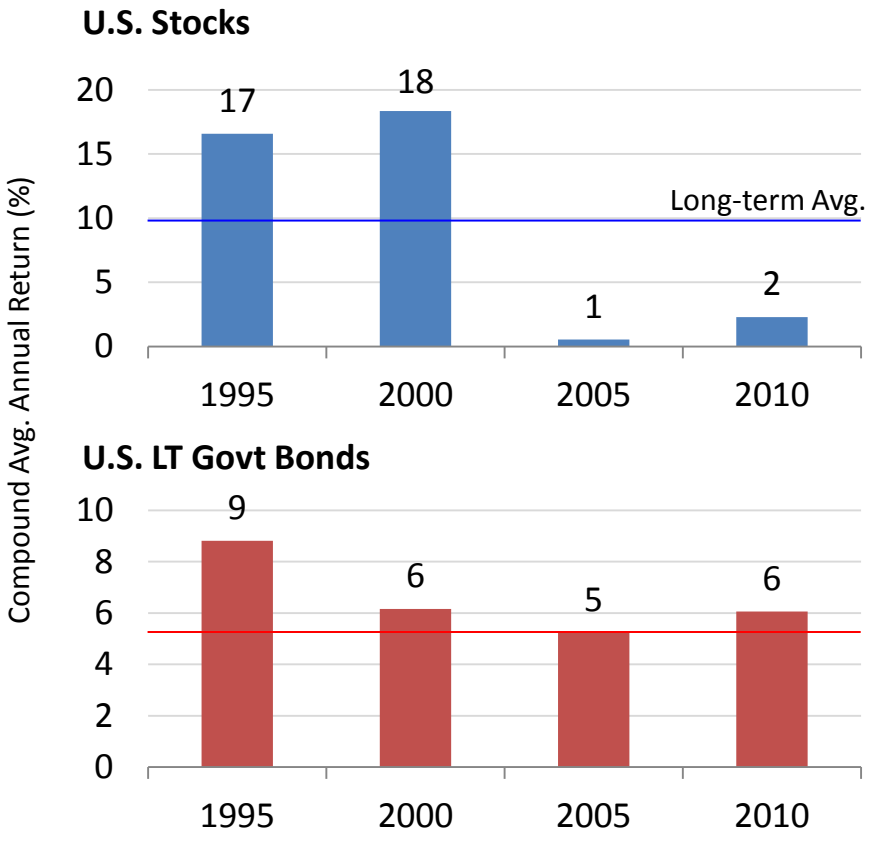
Track Progress Over Time Toward Meeting These Goals



But, Let's Face It: Investors Are Mindful Of Short-term Investment Opportunities And Constraints

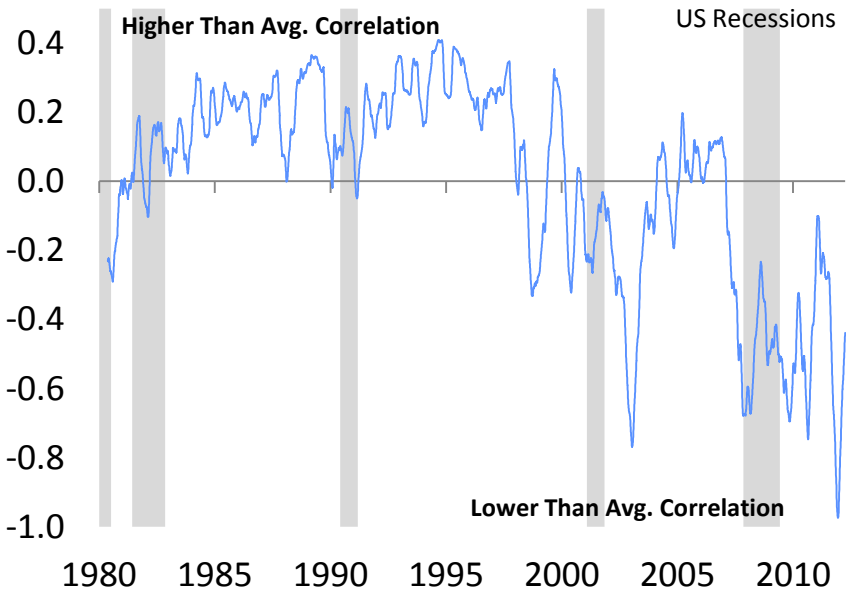
Short-term Opportunities

- Time varying Risk-premia
- Time varying correlations



Short-Term Investor Constraints

- Minimum Funding Ratios for Pension Funds & Insurance companies
- Maximum drawdown constraints for individual investors
- Short-term liquidity requirement
- Behavioral biases like fear and greed



Markets offer high risk, high return, mean reverts, high downside risk, cannot be timed, driven by investor sentiment, unpredictable. . . . . .

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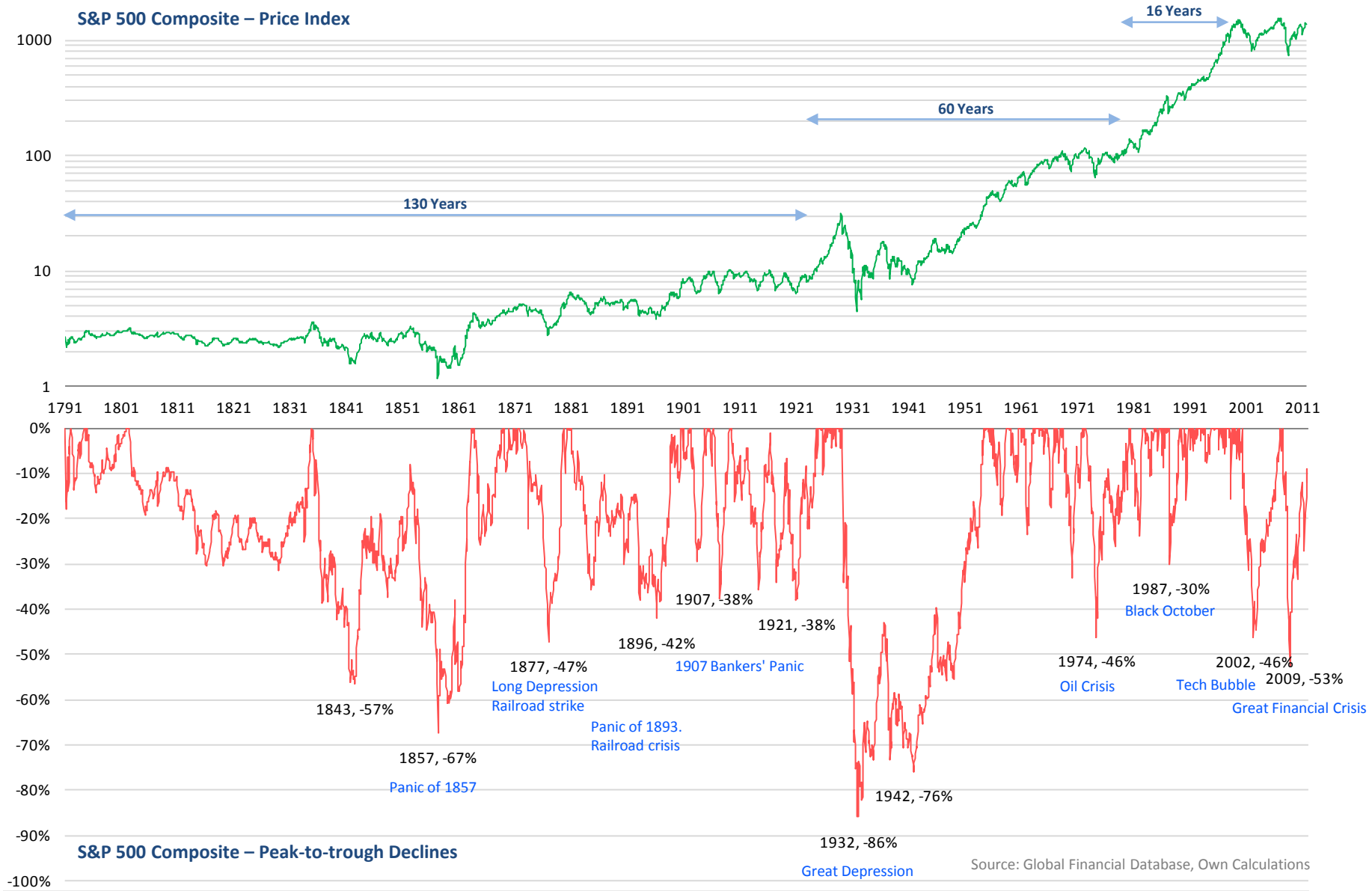
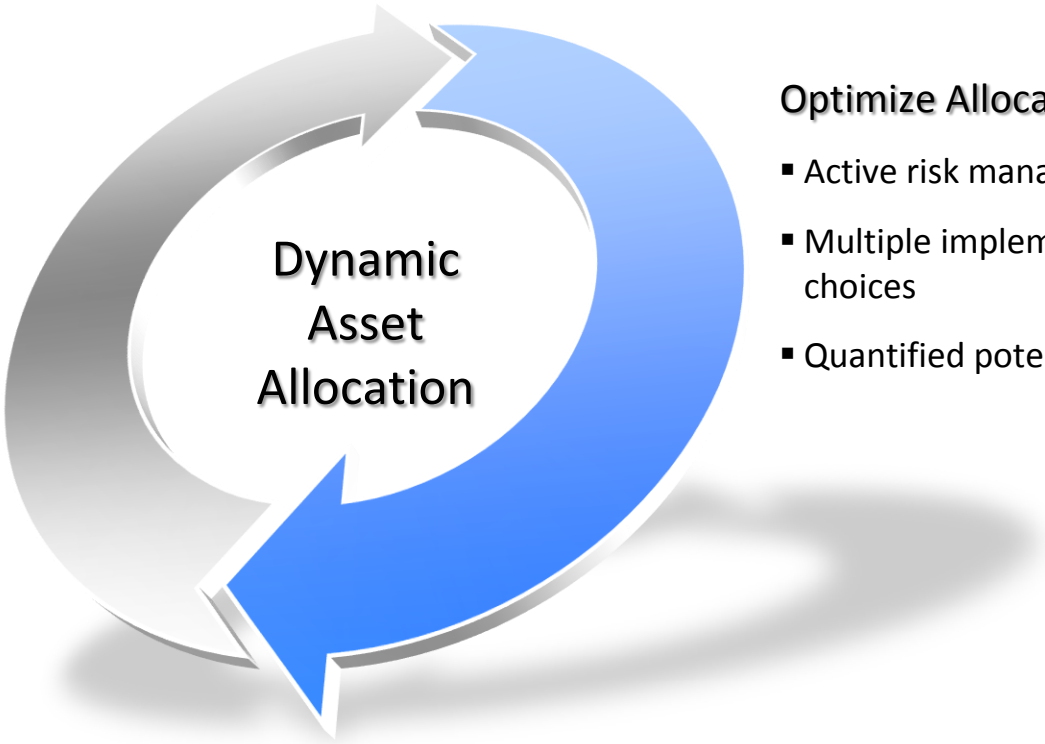


Source: Global Financial Database, Own Calculations

Assumptions Drive Allocations

Develop Data-driven Assumptions

- Fundamental, Macroeconomic & Technical drivers
- 30 Asset Classes
- 3-month & 5-year horizons



Optimize Allocations

- Active risk management
- Multiple implementation choices
- Quantified potential benifits

Refresh Models Periodically

Before: The Cycle of Market-Driven Emotions

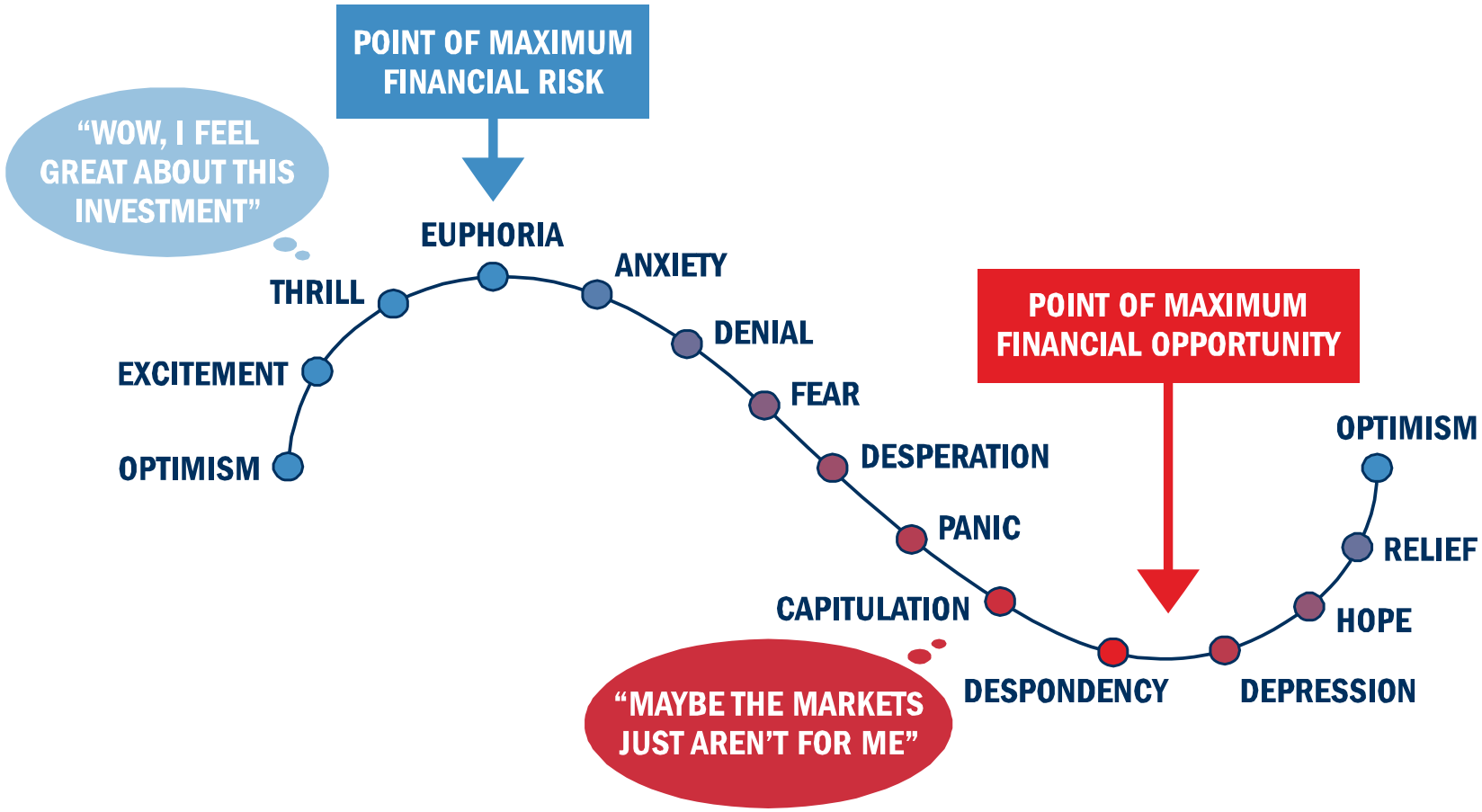
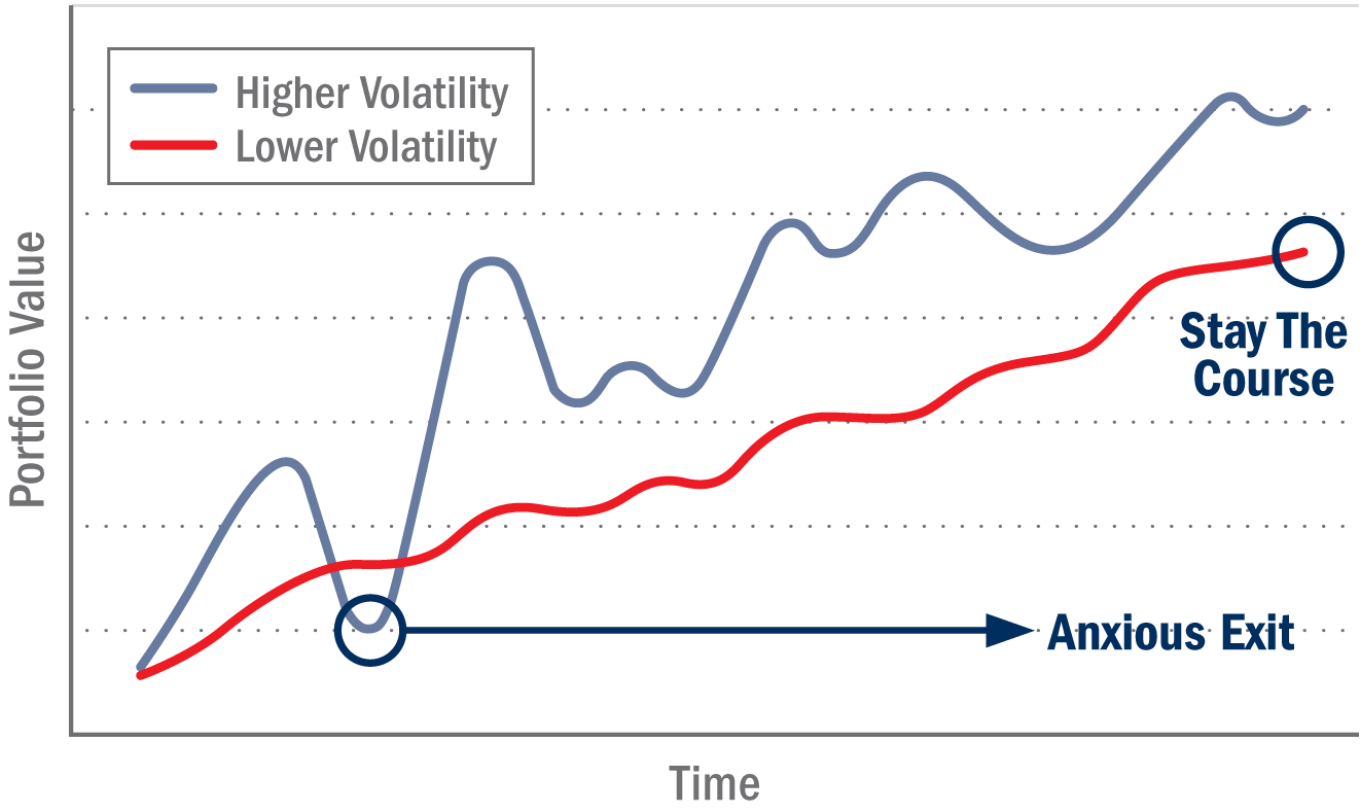


Chart source: Westcore Funds / Denver Investment Advisers LLC 1998

After: Potential For Better Outcomes And Satisfaction



For Illustrative Purpose Only

5-Year U.S. Equity Return Assumption Drivers[1]

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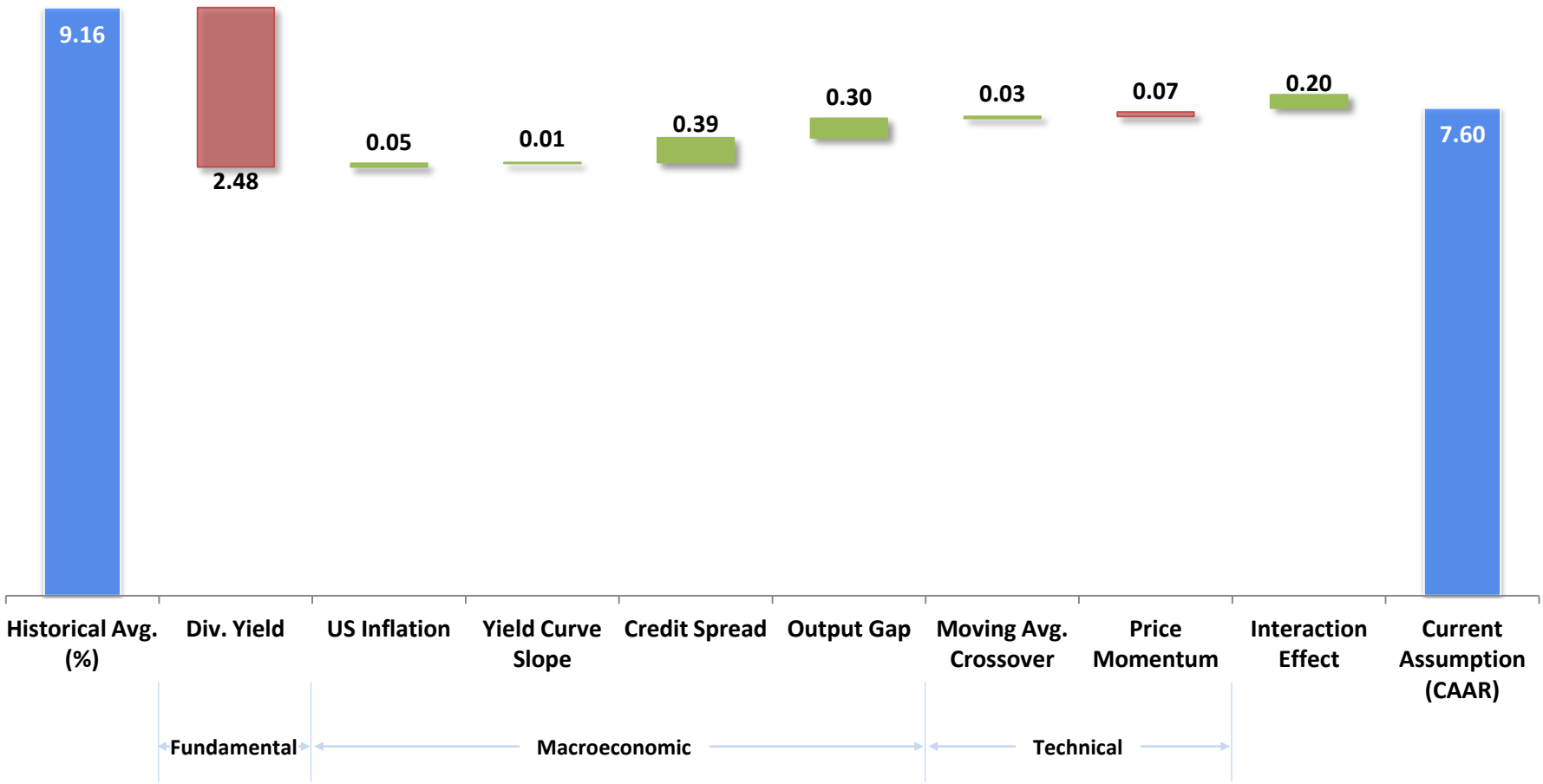
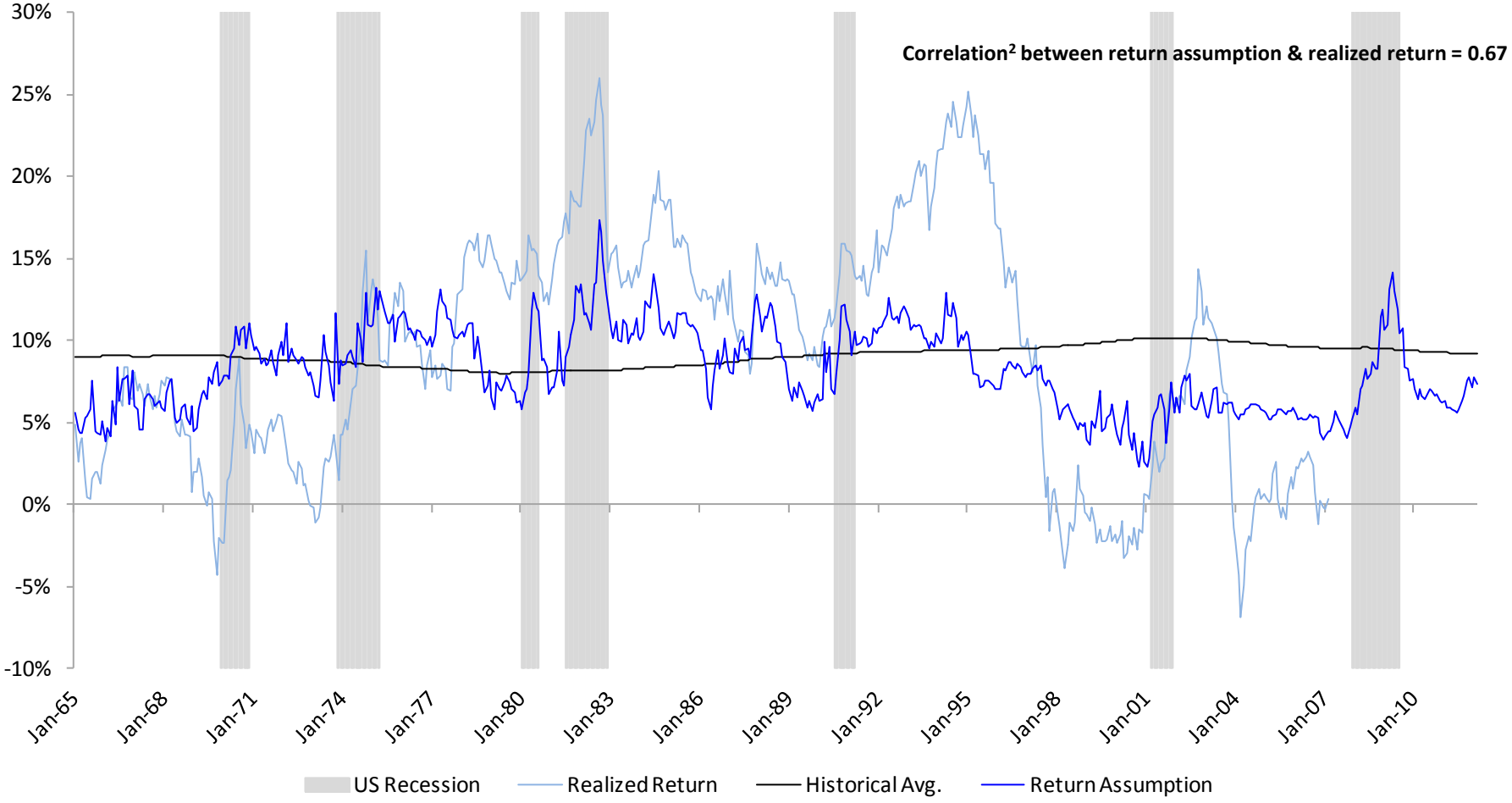


Source: Investment Management & Guidance (IMG) – Investment Analytics

* CAAR: Compound Avg. Annual Return
[1] As of Feb 2012
Please see Appendix A (Pg 22) for definitions of key drivers

5-Year U.S. Equity Return Assumption Evaluation[1]

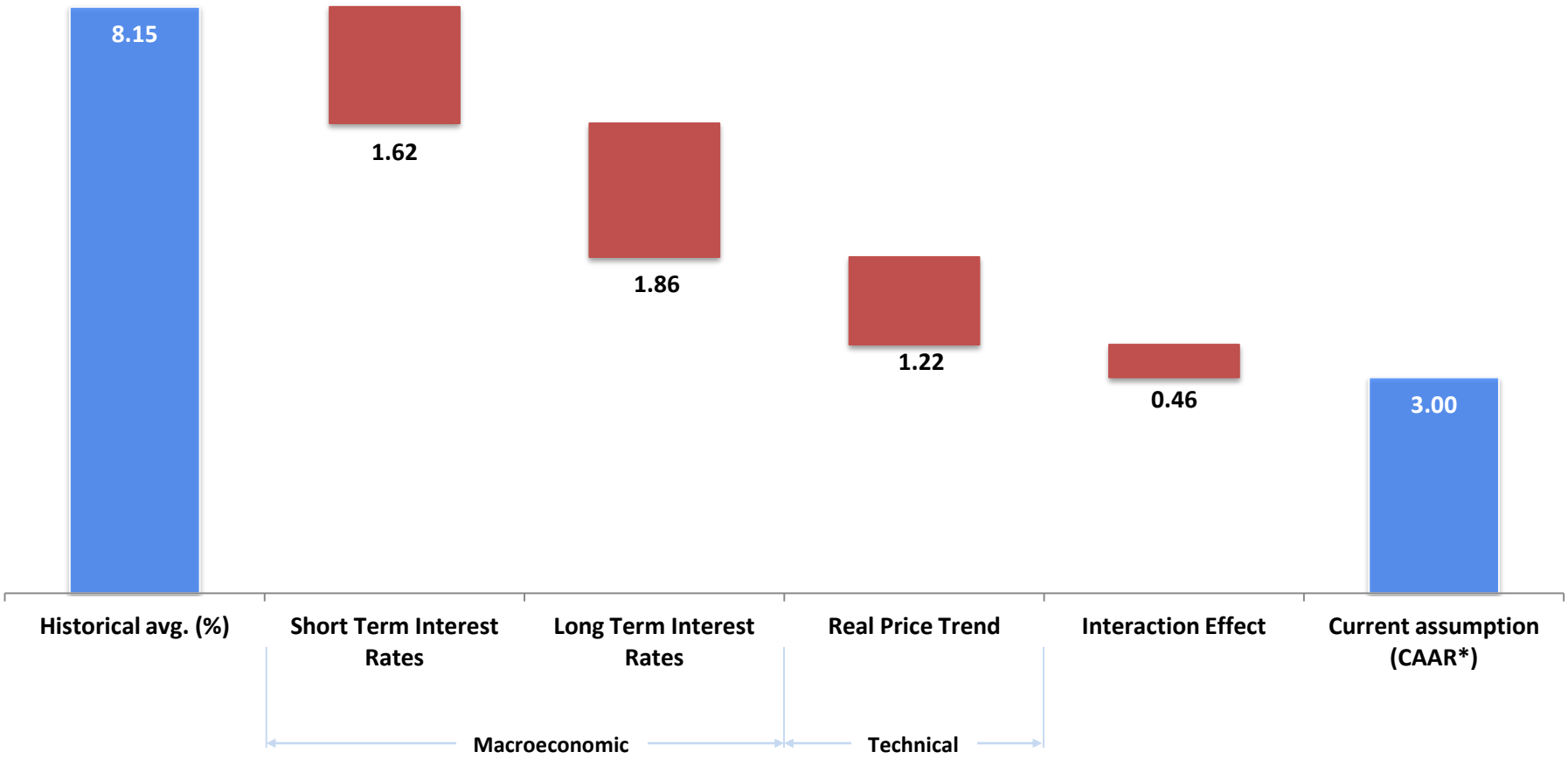


Source: Investment Management & Guidance (IMG) – Investment Analytics

[1] As of Feb 2012

[2] Correlation: A measure of the strength of "linear" association between two asset classes. It quantifies the extent to which two asset classes move together. Correlation is computed as correlation coefficient, which ranges between -1 and +1.

5-Year US Fixed Income Return Assumption Drivers[1]



Source: Investment Management & Guidance (IMG) – Investment Analytics

* CAAR: Compound Avg. Annual Return

[1] As of Feb 2012

Please see Appendix A (Pg 22) for definitions of key drivers

5-Year US Fixed Income Return Assumption Evaluation[1]

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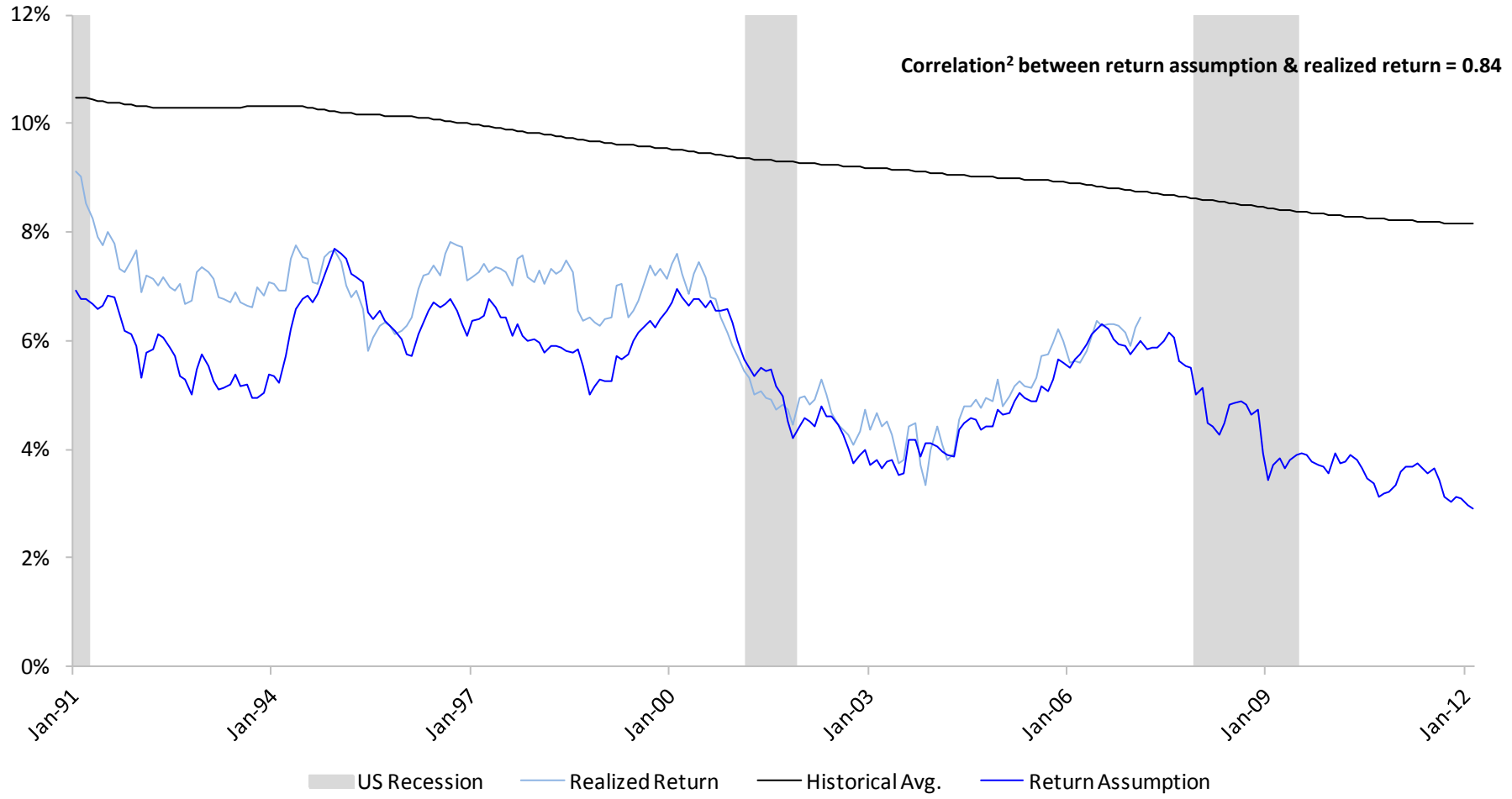

Source: Investment Management & Guidance (IMG) – Investment Analytics

[1] As of Feb 2012
[2] Correlation: A measure of the strength of "linear" association between two asset classes. It quantifies the extent to which two asset classes move together. Correlation is computed as correlation coefficient, which ranges between -1 and +1.

So The Investment Choices Are…

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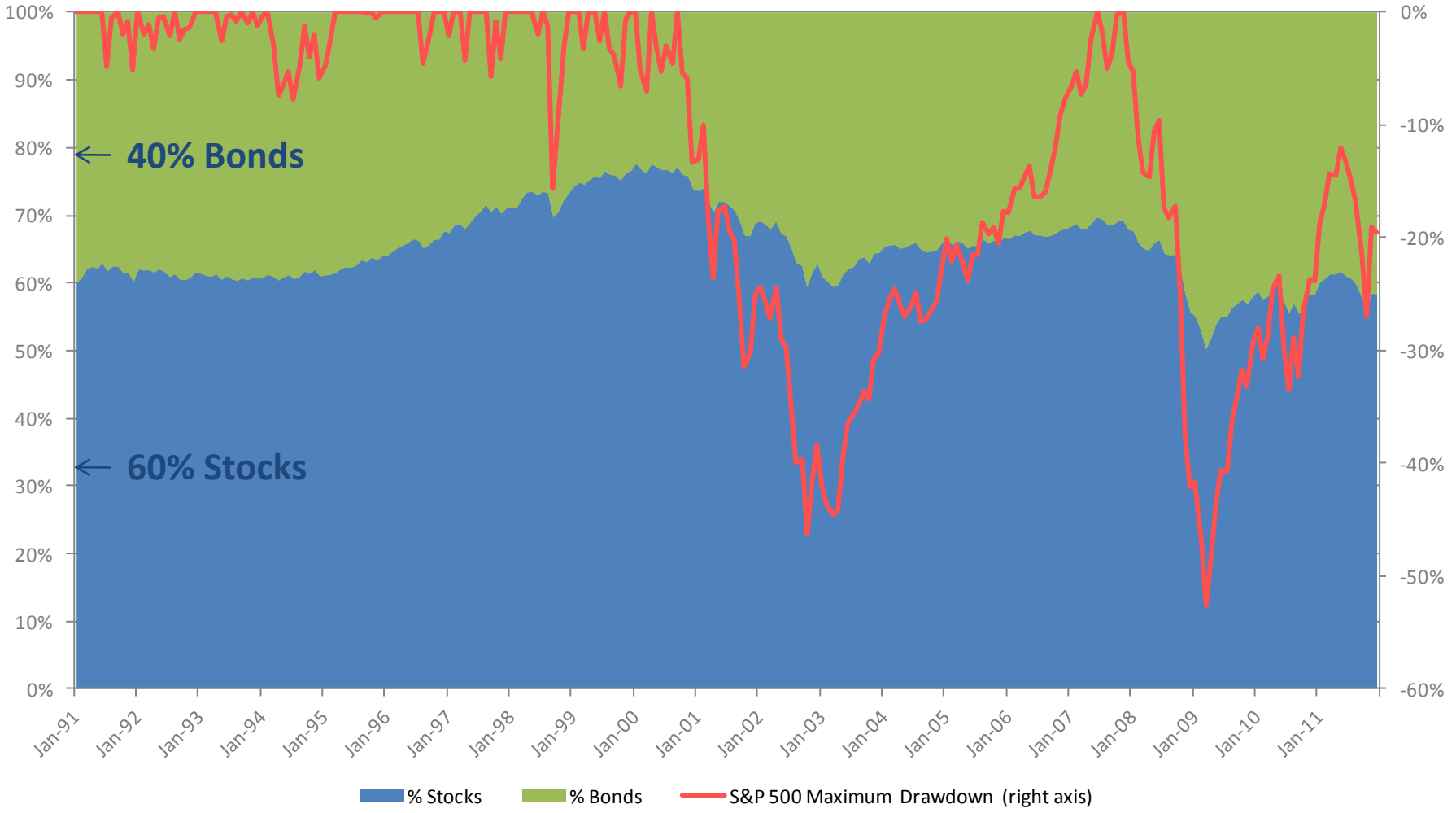
Investors Who Care The Least: Buy & Hold Strategy



So The Investment Choices Are…

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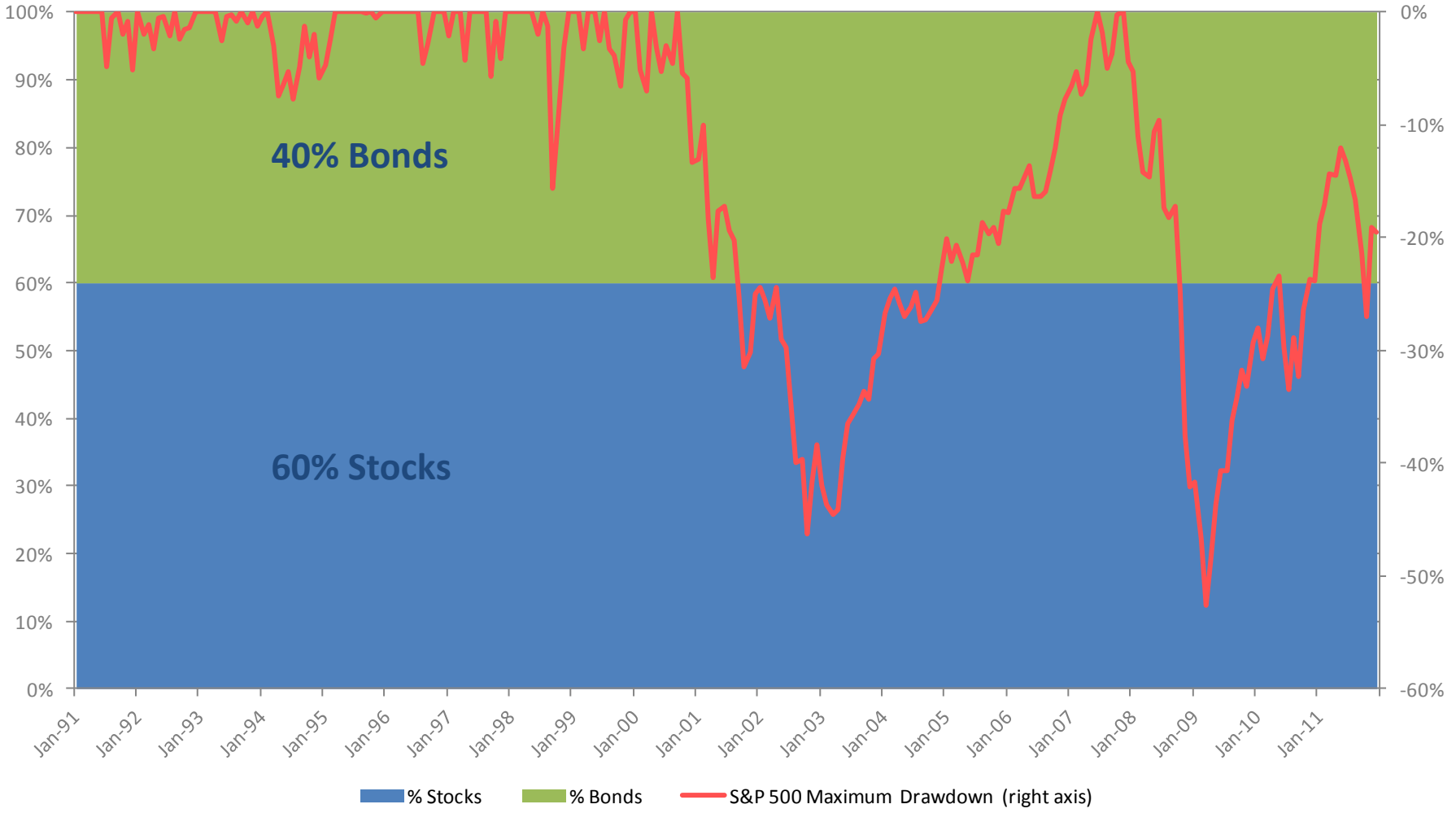
Investors Who Are Information-less: Fix Mix Strategy



So The Investment Choices Are…

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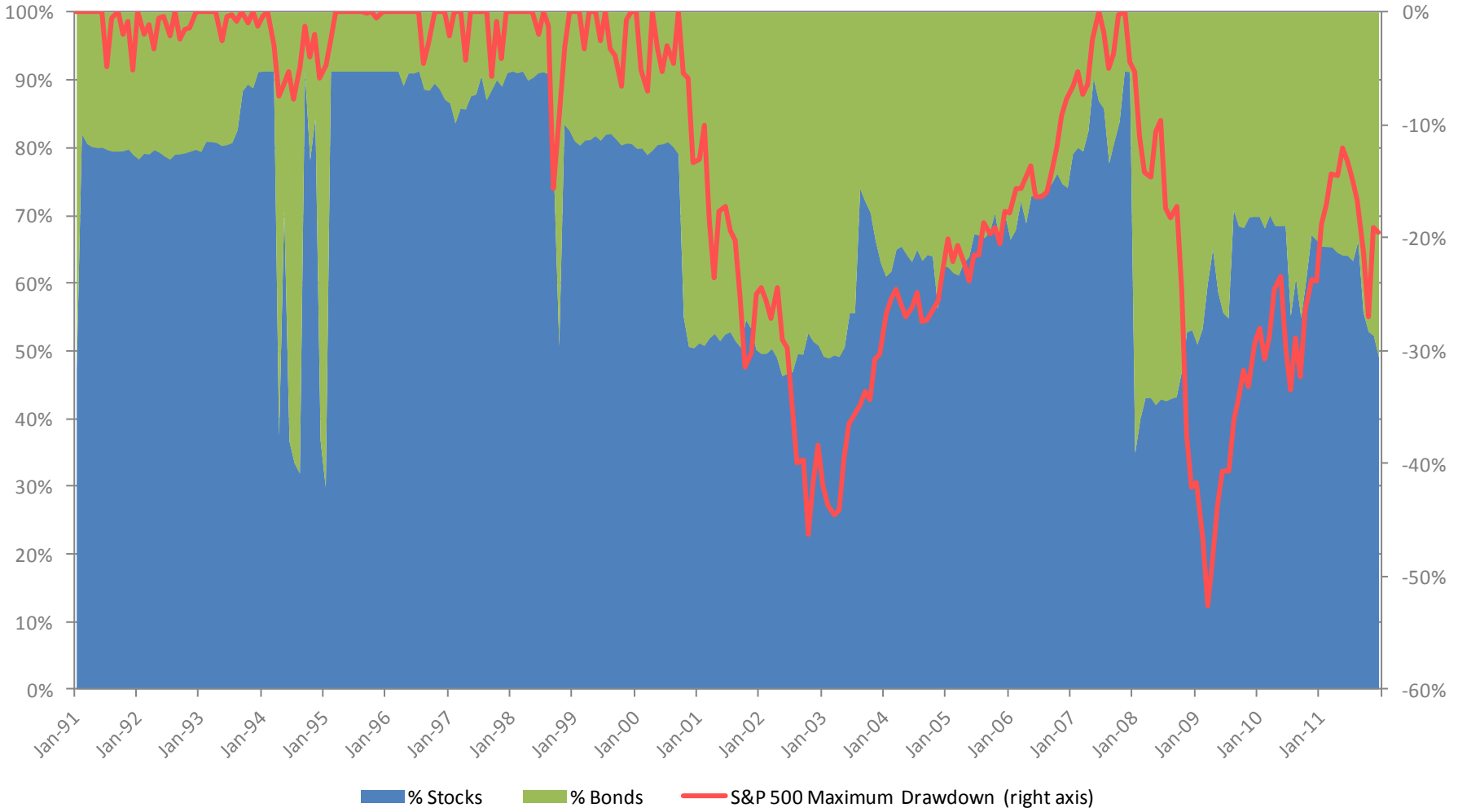
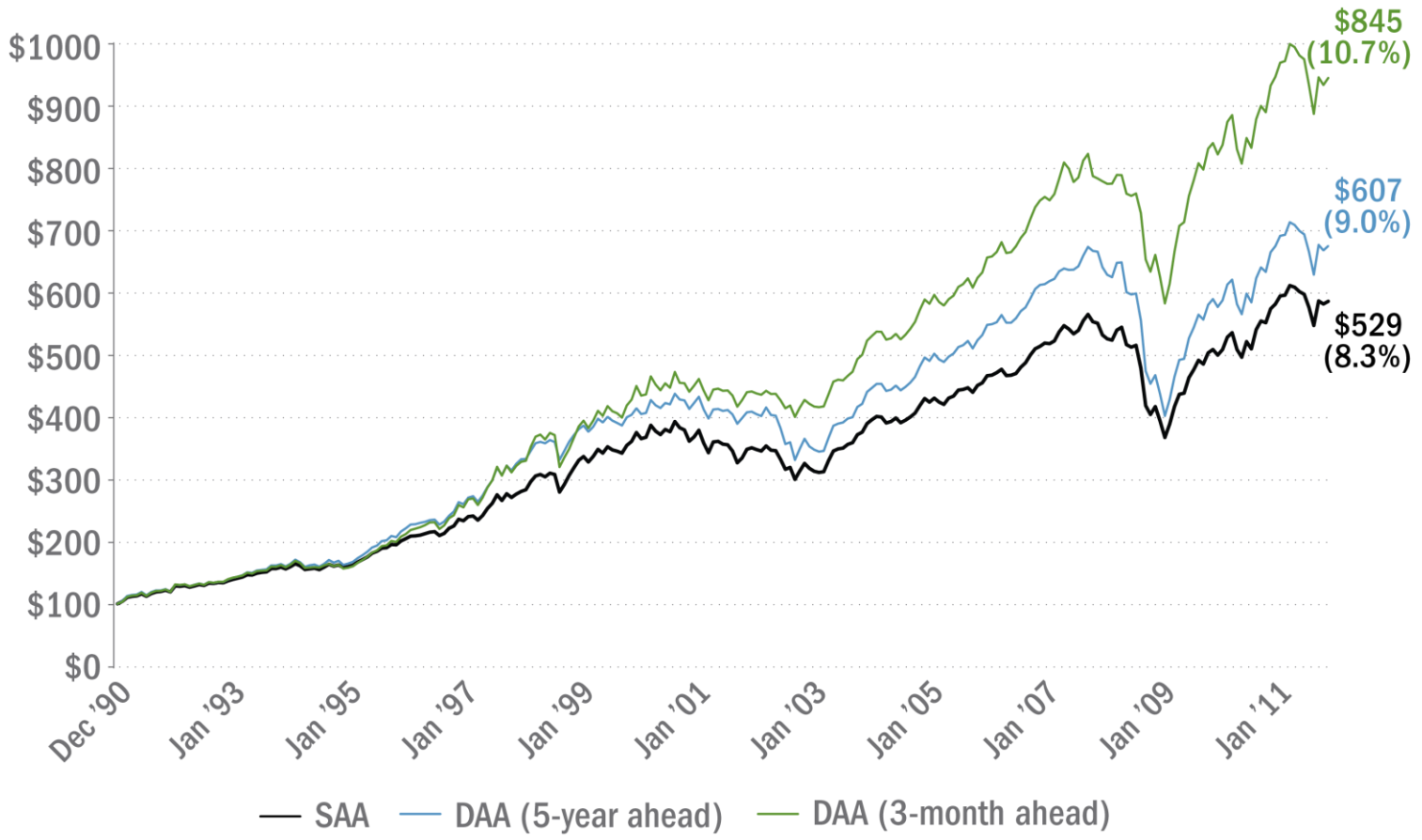
Investors Who Make Informed Decisions: Dynamic Asset Allocation Strategy



Proof Of Concept: DAA Evaluation

Growth of $100 for 3-month DAA model portfolio, its 5-year DAA and SAA counterpart*



Source: Investment Management & Guidance (IMG) – Investment Analytics

*Moderate risk tolerance, Tier 0 liquidity, U.S.-market biased

Date: Dec '90 – Dec '11

Source: Investment Management & Guidance (IMG) – Investment Analytics

DAA Offers Several Implementation Choices, e.g. Globally Oriented Portfolios

	Conservative			Moderately Conservative			Moderate			Moderately Aggressive			Aggressive		
Asset Class	DAA	SAA	+/- SAA	DAA	SAA	+/- SAA	DAA	SAA	+/- SAA	DAA	SAA	+/- SAA	DAA	SAA	+/- SAA
Global Equities	**28%**	**20%**	**8%**	**51%**	**40%**	**11%**	**72%**	**60%**	**12%**	**87%**	**70%**	**17%**	**95%**	**80%**	**15%**
North America	15%	8%	7%	27%	19%	8%	37%	28%	9%	43%	32%	11%	42%	37%	5%
Europe (ex-U.K.)	5%	4%	1%	9%	7%	2%	14%	11%	3%	17%	13%	4%	25%	15%	10%
U.K.	2%	2%	0%	5%	4%	1%	6%	5%	1%	7%	6%	1%	6%	7%	-1%
Japan	2%	2%	0%	2%	3%	-1%	3%	5%	-2%	4%	6%	-2%	2%	7%	-5%
Pac (ex-Japan)	1%	1%	0%	3%	2%	1%	5%	3%	2%	8%	4%	4%	11%	4%	7%
Intl Emerging	3%	3%	0%	5%	5%	0%	7%	8%	-1%	8%	9%	-1%	9%	10%	-1%
Global Fixed Income	**66%**	**55%**	**11%**	**46%**	**50%**	**-4%**	**27%**	**38%**	**-11%**	**12%**	**28%**	**-16%**	**4%**	**18%**	**-14%**
Global Govt Bonds	44%	34%	10%	29%	30%	-1%	14%	24%	-10%	4%	18%	-14%	2%	10%	-8%
Global Inv Grade Credit	13%	8%	5%	12%	8%	4%	10%	6%	4%	7%	4%	3%	1%	3%	-2%
Global High Yield & EM	3%	2%	1%	3%	2%	1%	1%	1%	0%	0%	1%	-1%	0%	1%	-1%
Global Collateralized Debt	6%	11%	-5%	2%	10%	-8%	2%	7%	-5%	1%	5%	-4%	1%	4%	-3%
Cash	**6%**	**25%**	**-19%**	**3%**	**10%**	**-7%**	**1%**	**2%**	**-1%**	**1%**	**2%**	**-1%**	**1%**	**2%**	**-1%**

Source: Investment Management & Guidance (IMG) – Investment Analytics

[1] Tier 0 liquidity preference, as of April 4, 2012
DAA: Dynamic Asset Allocation
SAA: Strategic Asset Allocation

Additional Disclosure

The following is important information for you to consider before investing in alternative investments:
•Alternative investments are speculative and involve a high degree of risk.
•Alternative investments may trade on a leveraged basis which increases the risk of loss.
•Performance can be volatile.
•An investor could lose all or a substantial amount of his or her investment.
•The use of a single fund of funds manager applying one set of allocation procedures could mean lack of diversification and, consequently, higher risk.
•There is no secondary market for investor's interest in alternative investments and none is expected to develop.
•There may be restrictions on transferring interests in the alternative investments.
•High fees and expenses may offset the underlying manager's trading profits.
•A substantial portion of the trades executed by the underlying managers may take place on non-US exchanges.
•Alternative investments may require tax reports on Schedule K-1 to be prepared. As a result, investors may be required to obtain extensions for filing federal, state, and local income tax returns each year.
•In addition to the foregoing risks, each alternative investment fund is subject to its own strategy-specific or other risks. You must carefully review the offering memorandum for any particular fund and consider your ability to bear these risks before any decision to invest.

Sharpe ratios and standard deviation of returns are commonly-used measures of the risk/reward profile of traditional portfolios and broad market indices. As applied to hedge funds, however, these statistics may materially understate the true RISK profile of a fund because hedge funds are subject to a "risk of ruin" which may not be reflected in THE standard deviation of returns, the only measure of risk used in calculating Sharpe ratios. The markets in which hedge funds trade, the liquidity characteristics of the traded securities, the risks of leverage, the use of derivative securities with non-linear risk sensitivities, the use of non-representative historical data for estimating standard deviation, manager error, bad judgment and/or misconduct create the possibility of sudden, dramatic and unexpected losses — LOSSES THAT may not be adequately reflected in Sharpe ratios or standard deviations. Prospective investors must recognize this risk of ruin, which is a material risk involved in investing in any program fund, and which may not be adequately reflected in such performance statistics as the Sharpe ratio.