



# Separating Alpha and Beta: A Materially Better Way To Invest

**Jim Haskel – Director, Portfolio Strategy**

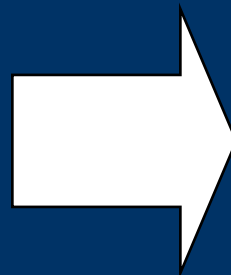
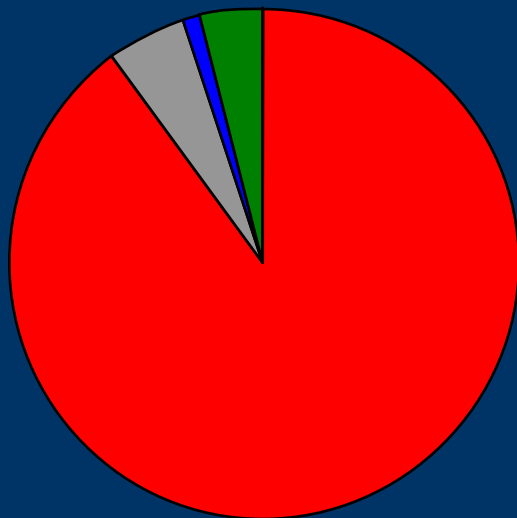
**March 26, 2007**

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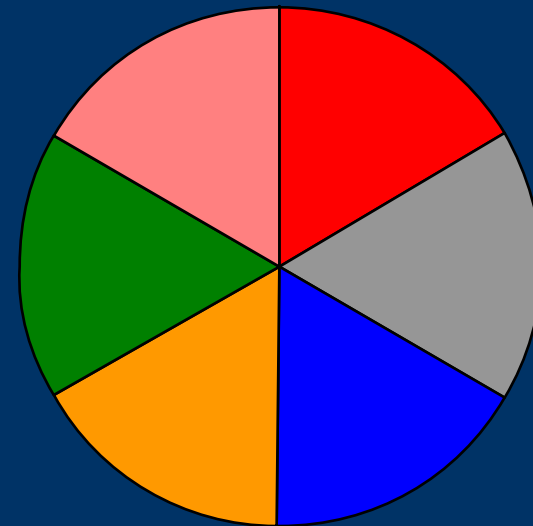


# THE SINGLE MOST IMPORTANT THING YOU CAN DO

**“Bad” Risk Budget**



**“Good” Risk Budget**



Please see Note 1 for relevant disclosures.



## **INSITUTIONAL PORTFOLIO OBSERVATIONS**

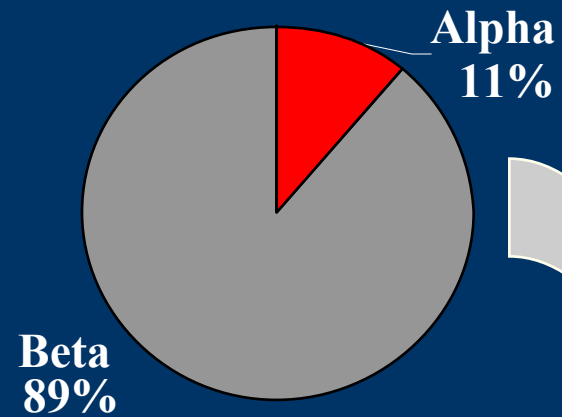
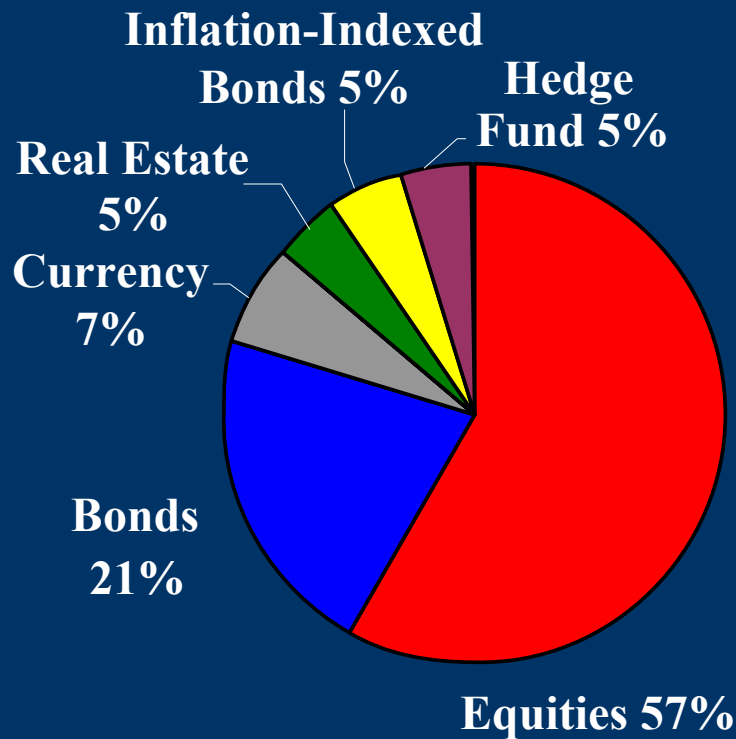
- ◆ **The risk of traditional portfolios are unnecessarily concentrated in equities and thus highly vulnerable to the fate of the equity market.**
- ◆ **Active management is unnecessarily tied to underlying asset allocations and thus also concentrated in equities.**
- ◆ **Separating market risk from active management risk and diversifying each results in hundreds of basis points of additional return at same risk.**
- ◆ **Institutional investors are quickly adopting this new paradigm because it makes sense.**



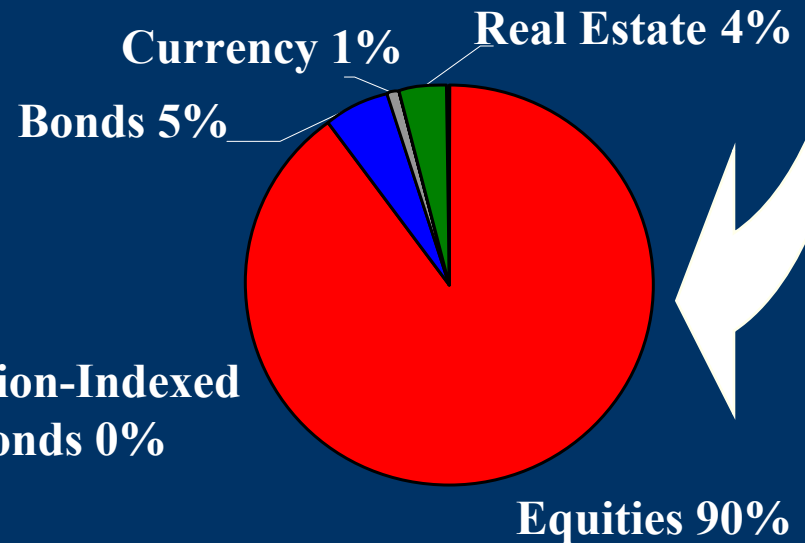
# TYPICAL PORTFOLIO

## Alpha vs. Beta Risk Allocation

### Capital Allocation



### Beta Risk Allocation

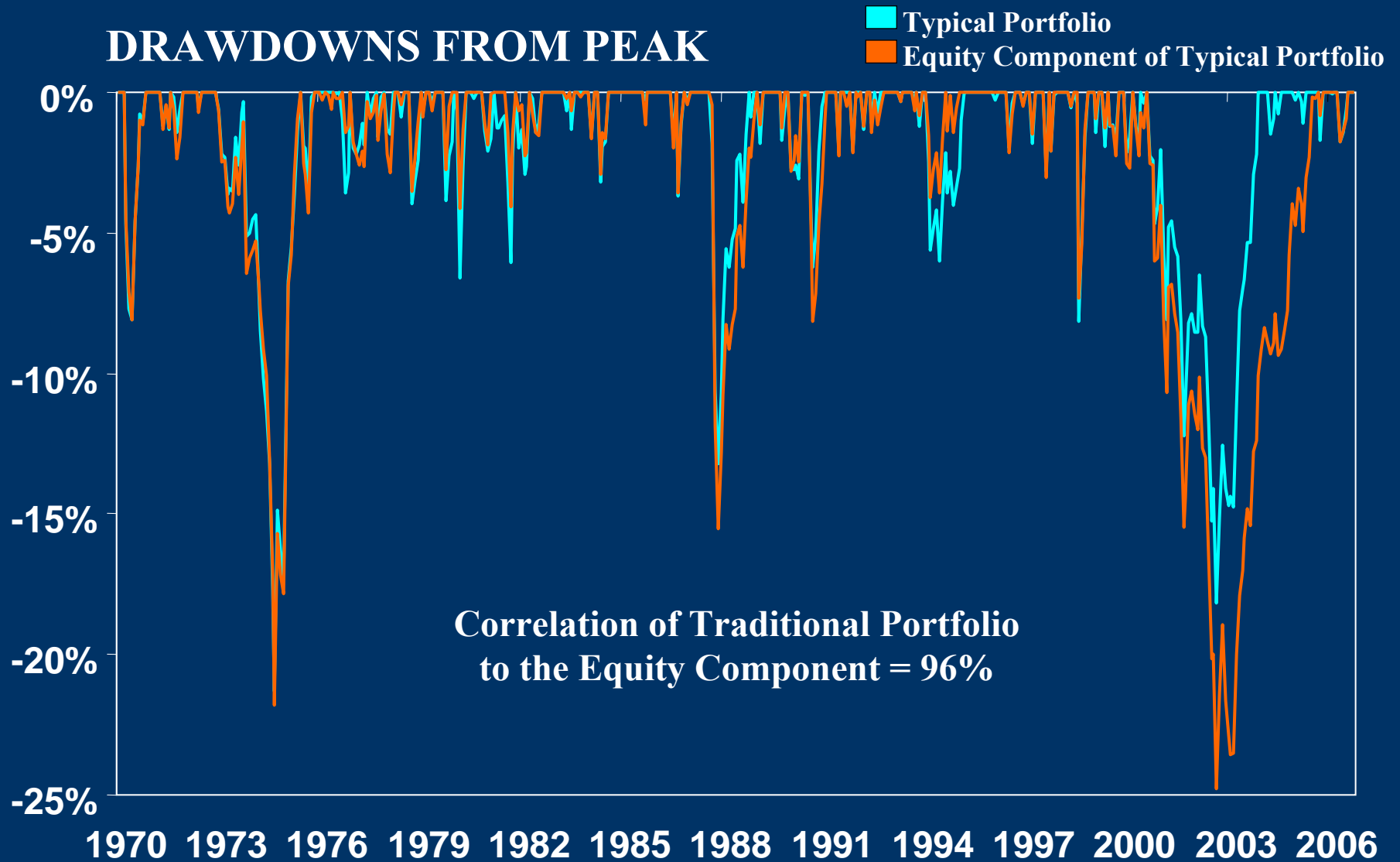


Please refer to Note 2 for relevant disclosures.



# THE KEY VULNERABILITY

## DRAWDOWNS FROM PEAK



Please refer to Note 3 for relevant disclosures. SIMULATED PERFORMANCE IS NOT NECESSARILY INDICATIVE OF ACTUAL OR FUTURE PERFORMANCE.



## SEPARATING BETA AND ALPHA

Portfolio Return = Equities (Large Cap, Small Cap...), Fixed Income (Core, Emerging Market Debt, High Yield), .... Hedge Fund)

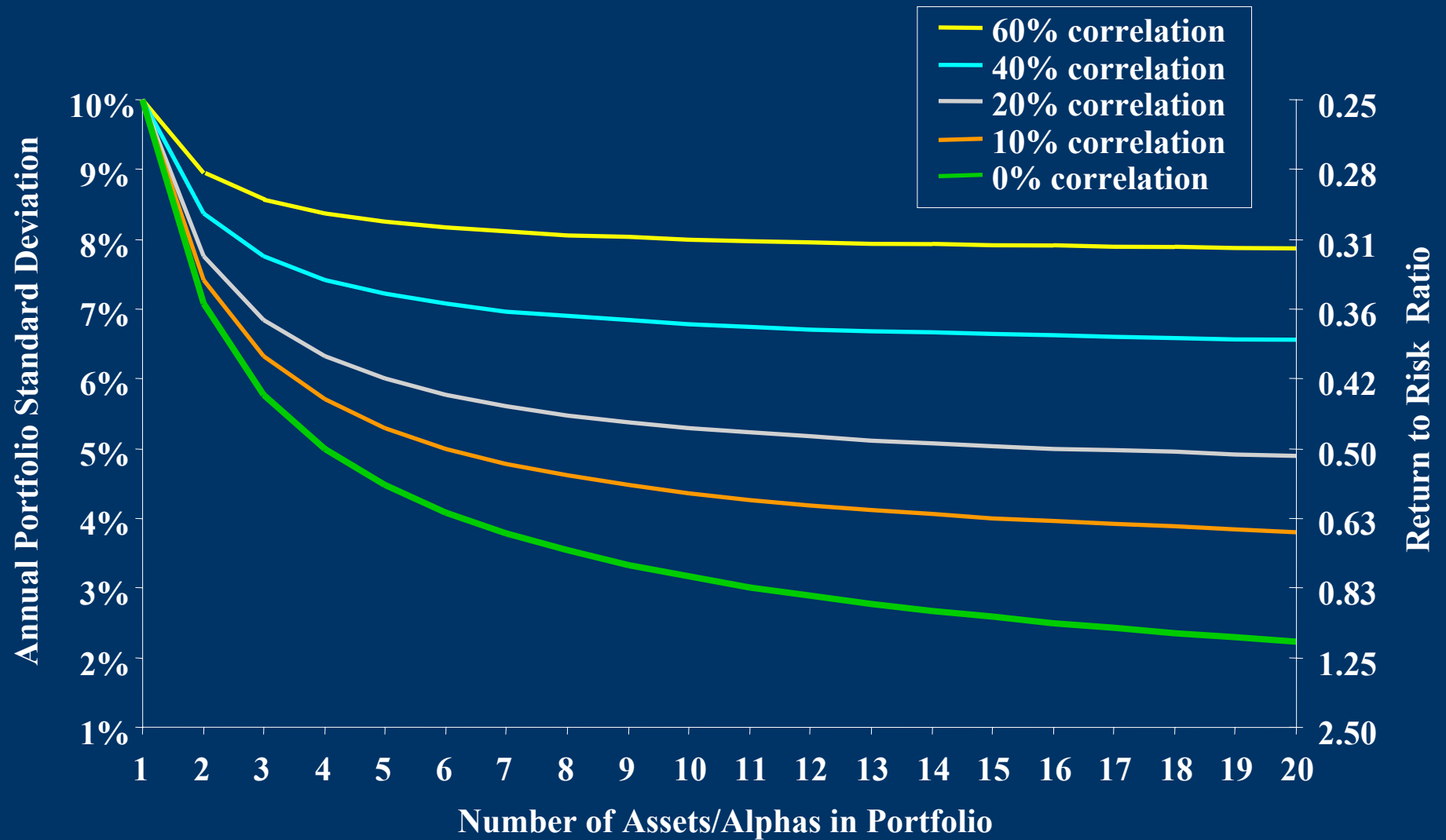
VS.

$$\text{Return} = \text{Risk Free Rate} + \text{Beta} + \text{Alpha}$$

Type of risk:	<b>Market</b>	<b>Manager</b>
Certainty of Positive Return:	<b>High over time</b>	<b>None</b>
Range of Actual Return/Risk:	<b>Low</b>	<b>High</b>
Correlation:	<b>High</b>	<b>Low</b>
Difficulty:	<b>Easy</b>	<b>Hard</b>
Cost:	<b>Cheap</b>	<b>Expensive</b>



# THE POWER OF DIVERSIFICATION

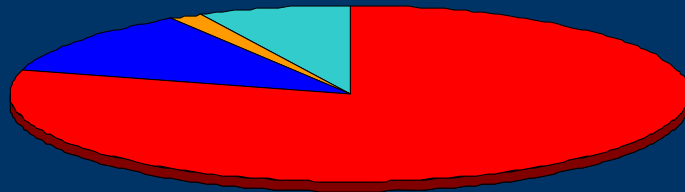


Please refer to Note 4 for relevant disclosures.



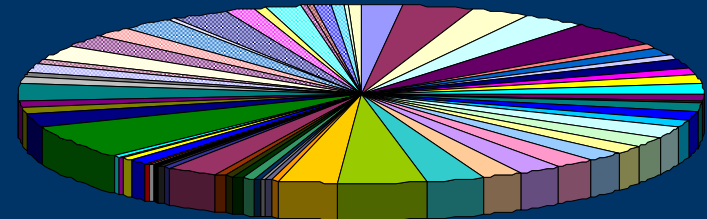
# TOTAL PORTFOLIO PERSPECTIVE

## Typical Mix

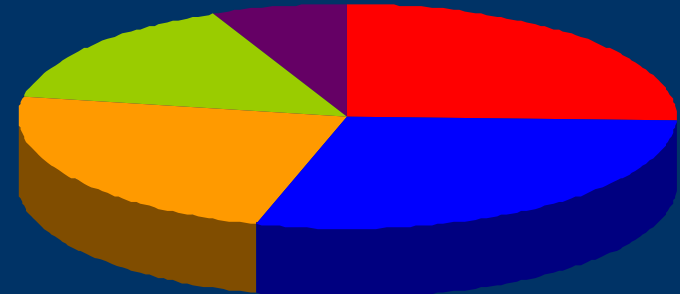
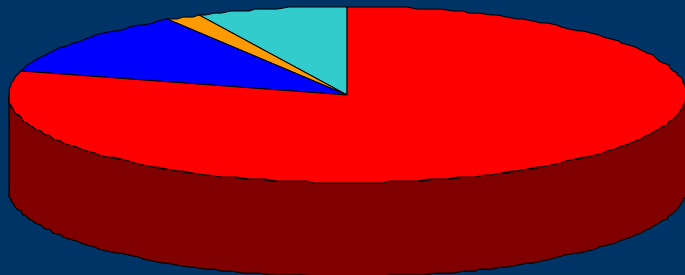


← Alpha →

## Diversified Mix



← Beta →



### Typical Mix

**Expected Total Return: 9%**  
**Expected Risk: 10%**  
**Expected Ratio: 0.45**

### Diversified Mix

**Expected Total Return: 13%**  
**Expected Risk: 9%**  
**Expected Ratio: 0.90**

Please refer to Note 5 for relevant disclosures. ACTUAL RETURNS, RISKS AND RATIOS WILL VARY FROM EXPECTED RETURNS, RISKS AND RATIOS.





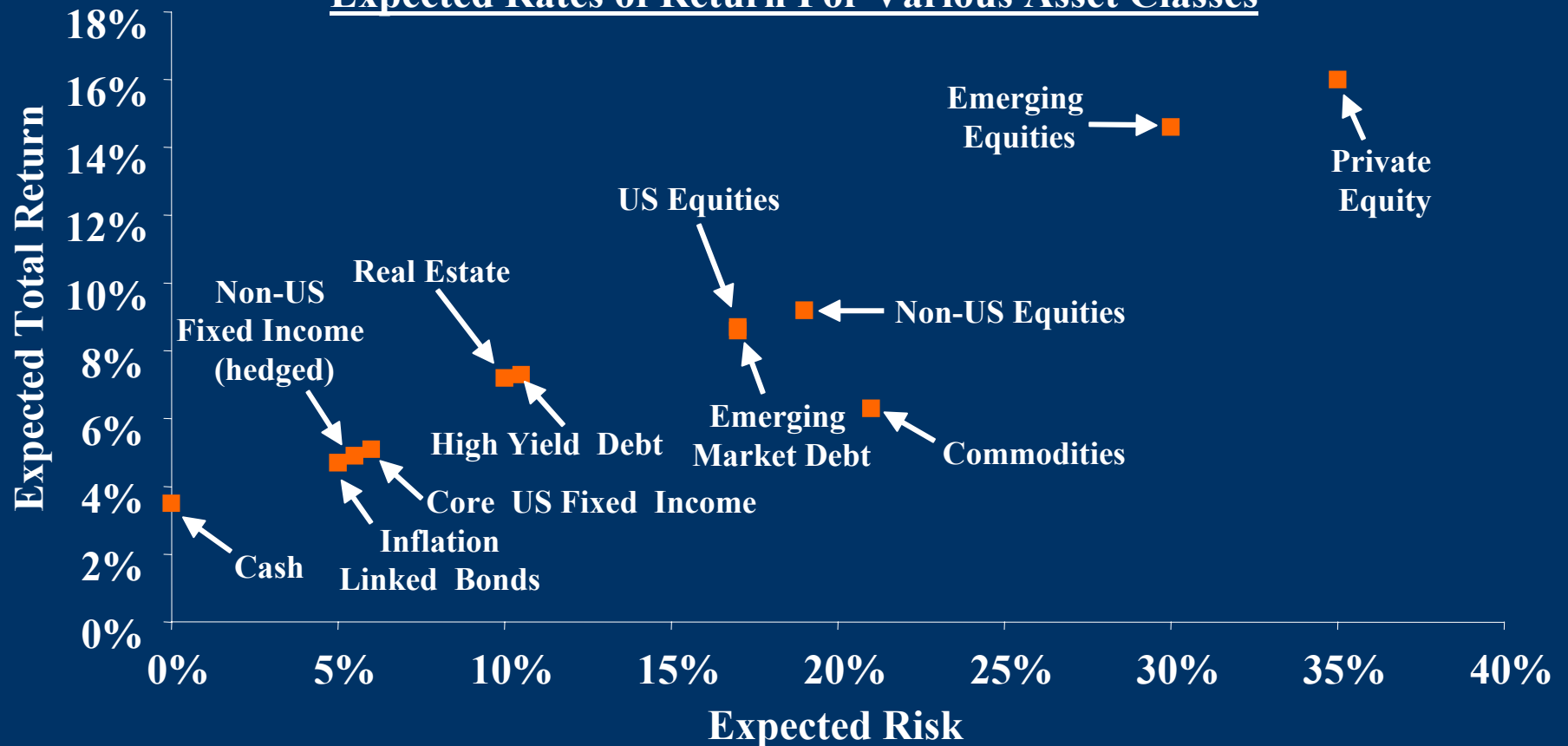
# Building Better Beta



## CONVENTIONAL ASSET RETURN/ RISK PERSPECTIVE

- ◆ For higher returns, invest in “riskier” assets.
- ◆ For less risk, keep more money in “cash and bonds.”

Expected Rates of Return For Various Asset Classes

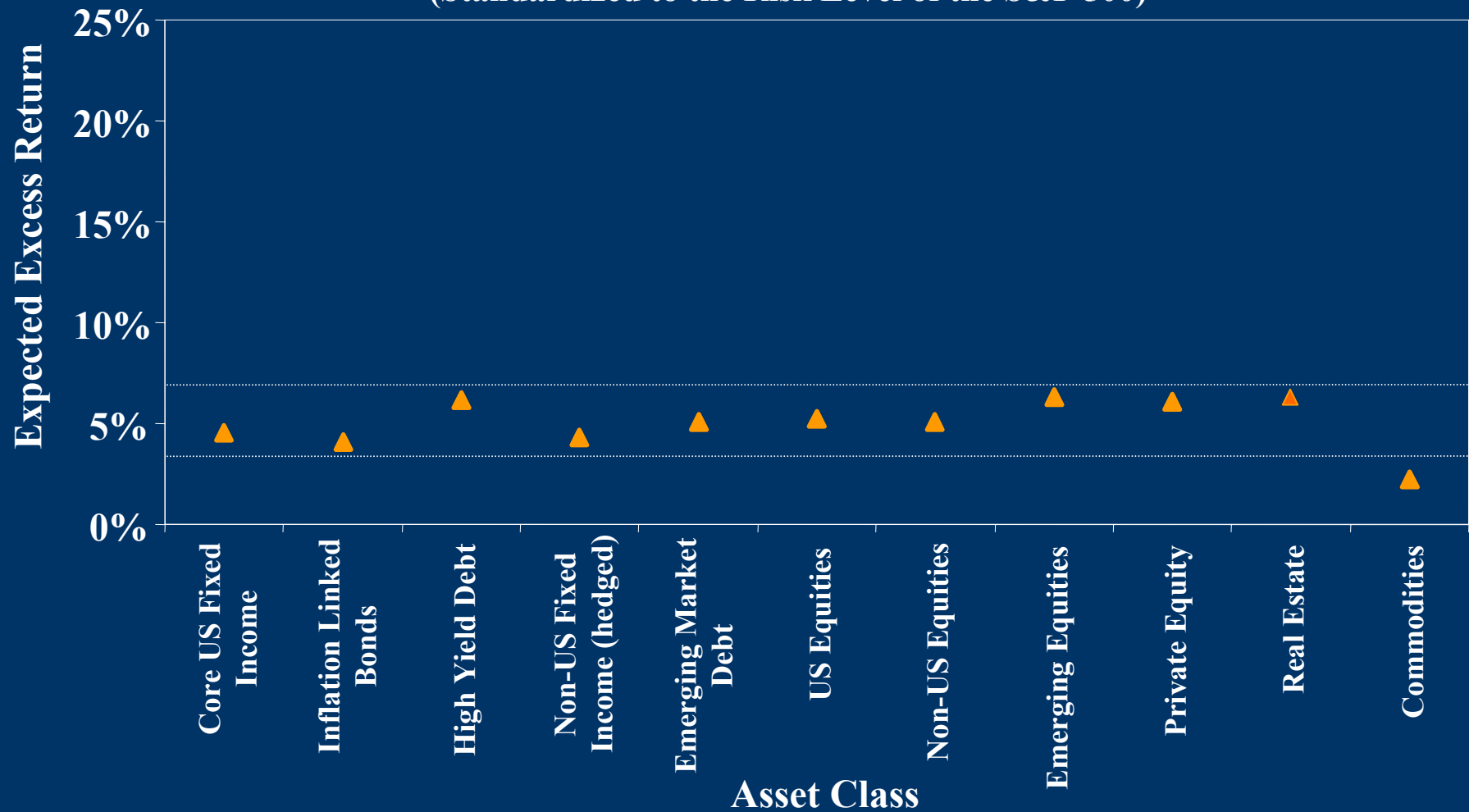


Please see Note 6 for relevant disclosures.



# RISK-ADJUSTED RETURNS

## Leverage-Adjusted Expected Excess Returns (Standardized to the Risk Level of the S&P 500)

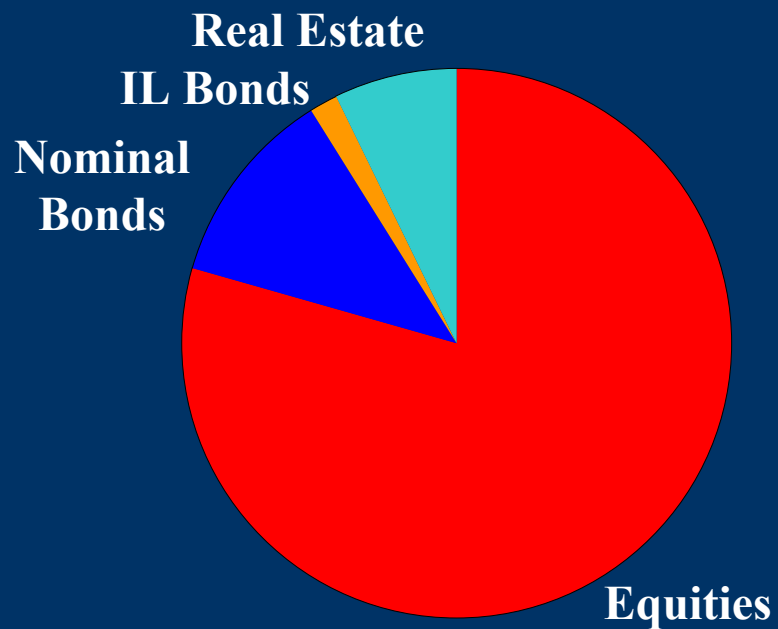


Please see Note 7 for relevant disclosures.

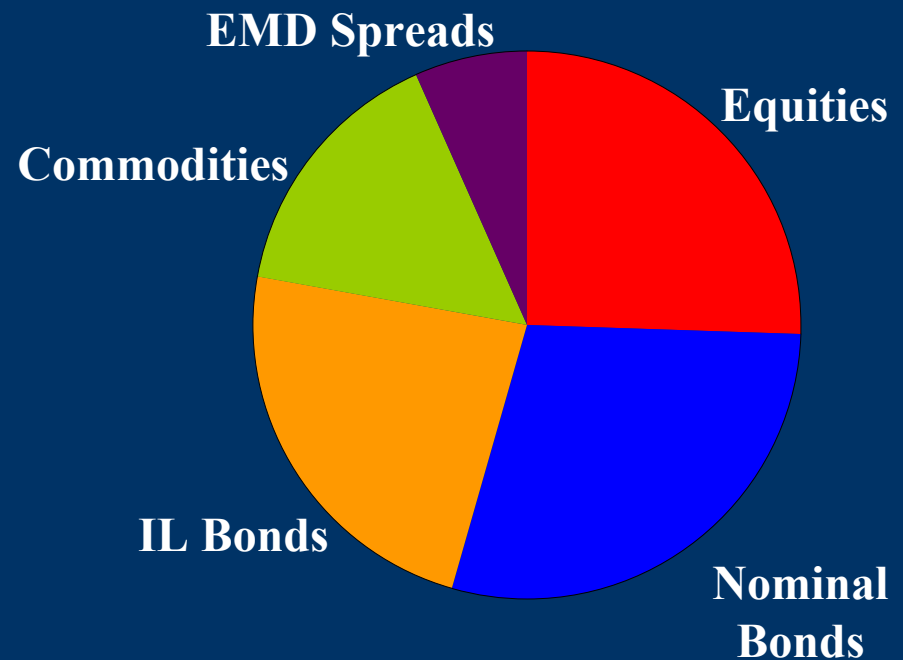


# TYPICAL PORTFOLIO VS. DIVERSIFIED BETA PORTFOLIO

## Typical Portfolio Risk Impact



## Diversified Beta Risk Impact



Please refer to Note 8 for relevant disclosures.



## DIVERSIFIED BETA SIMULATED AT DIFFERENT LEVELS OF AGGRESSIVENESS

1/1970 to 1/2007	Typical Portfolio	Diversified Beta at Same Return	Diversified Beta at Same Risk
<b>Annualized Total Return</b>	10.8%	10.9%	13.9%
<b>Annualized Excess Return</b>	4.4%	4.5%	7.5%
<b>Annualized Risk</b>	9.9%	5.9%	10.1%
<b>Sharpe Ratio</b>	0.40	0.70	0.70
<b>Worst 1 Year Return</b>	<b>-28.2%</b>	<b>-6.3%</b>	<b>-13.6%</b>
	Oct-73 to Sep-74	Feb-94 to Jan-95	Feb-94 to Jan-95
<b>Worst 2 Year Return</b>	<b>-24.8%</b>	<b>5.0%</b>	<b>-7.3%</b>
	Oct-72 to Sep-74	Feb-01 to Jan-03	Feb-01 to Jan-03

Diversified Beta returns: Simulated prior to June 1996; June 1996 forward scaled real track record

Please see Note 9 for relevant disclosures. SIMULATED PERFORMANCE IS NOT NECESSARILY INDICATIVE OF ACTUAL OR FUTURE PERFORMANCE.



# Building Better Alpha



## THE ALPHA WORLDS ARE CONVERGING

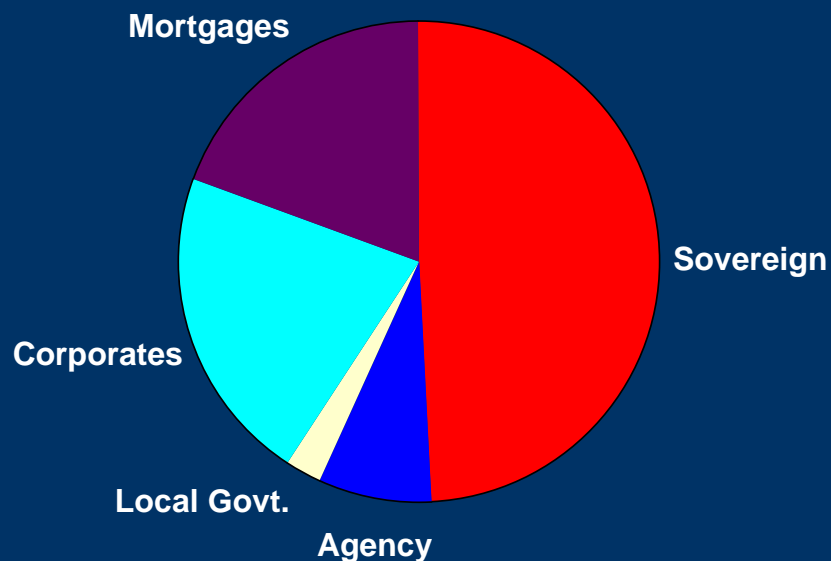
- ◆ Alpha is a zero sum game, no matter what you call it
- ◆ Weaker players will lose to stronger players



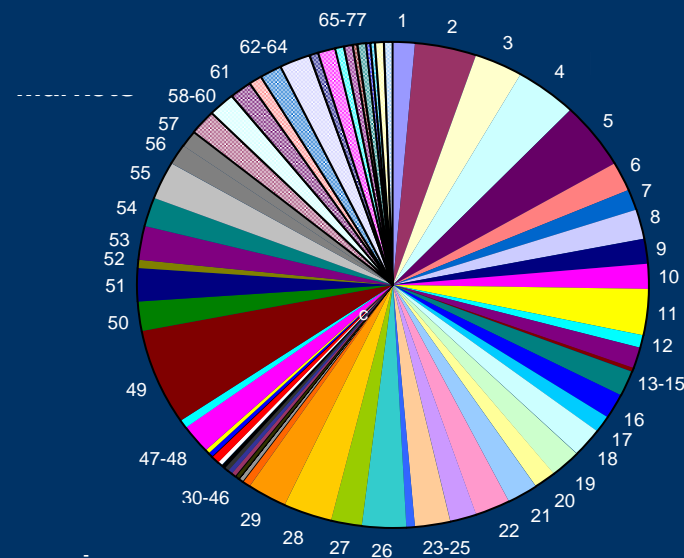


# DIVERSIFIED ALPHA: A STRUCTURAL ADVANTAGE

**Typical Global Fixed  
Income Strategy**



**Fully Diversified  
Alpha Overlay**



**Time Required for 95% Confidence of Positive  
Excess Return**

<b>Typical Manager</b>	<b>0.5 Expected Information Ratio</b>	<b>11 Years</b>
<b>Fully Diversified</b>	<b>1.0 Expected Information Ratio</b>	<b>3 Years</b>

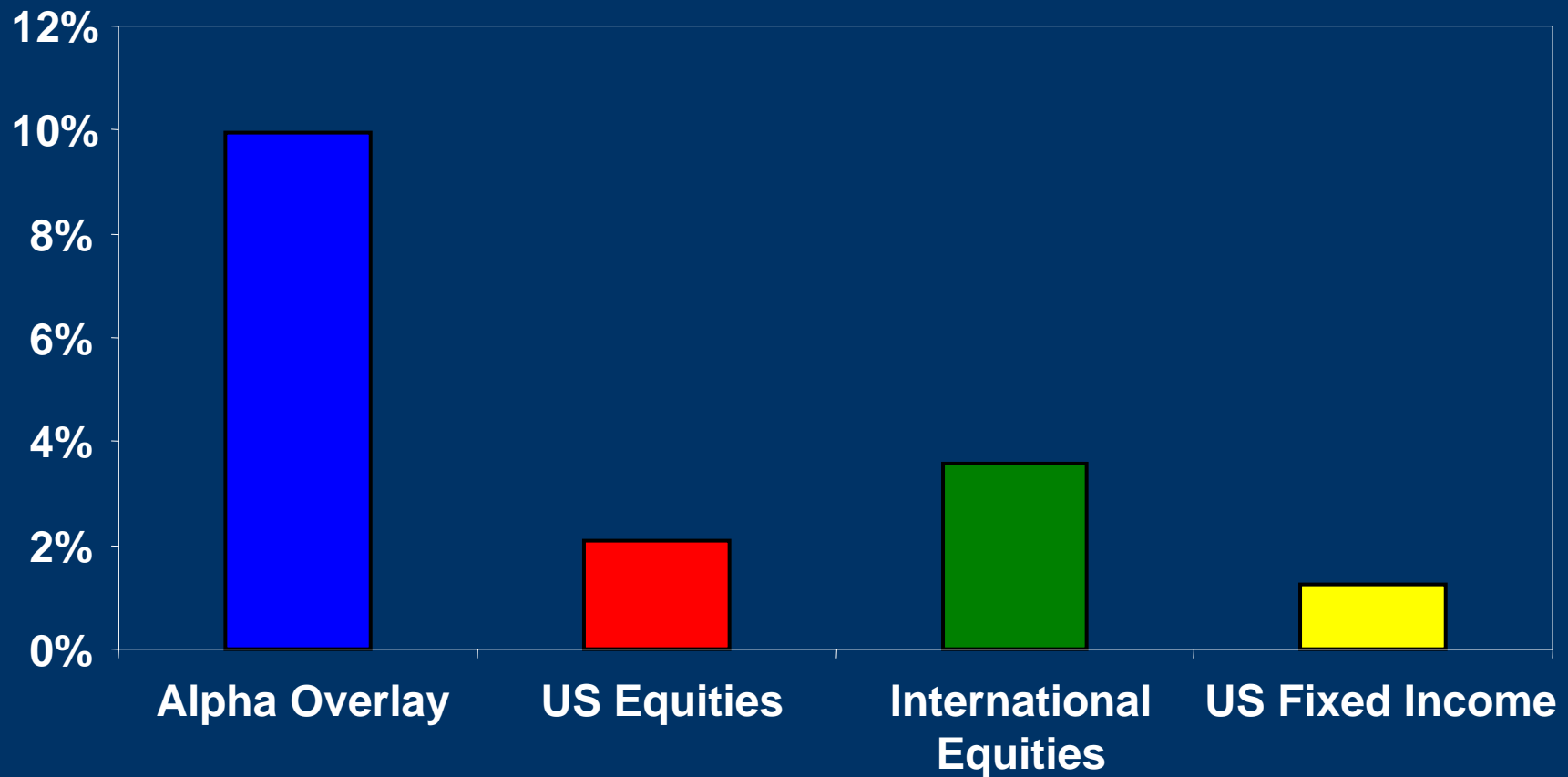
Please refer to Note 11 for relevant disclosures.





# ALPHA OVERLAY MATERIALLY BETTER

## Performance of Active Managers - Last 5 Years (through Sep-06)



Please refer to Note 12 for relevant disclosures. PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE PERFORMANCE.

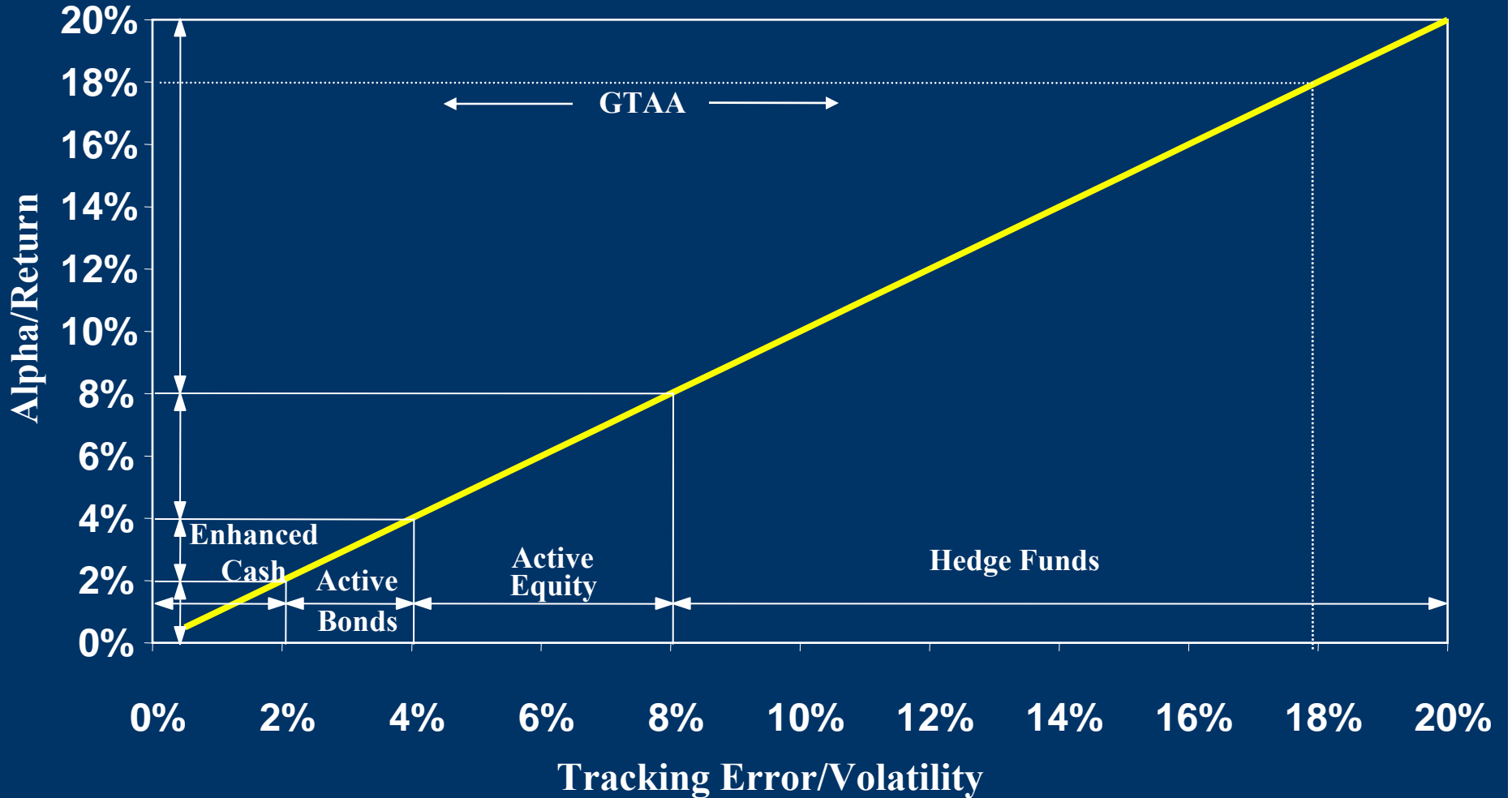


# Appendix



# SCALABILITY OF OVERLAY

## Scaling an Information Ratio of 1.0

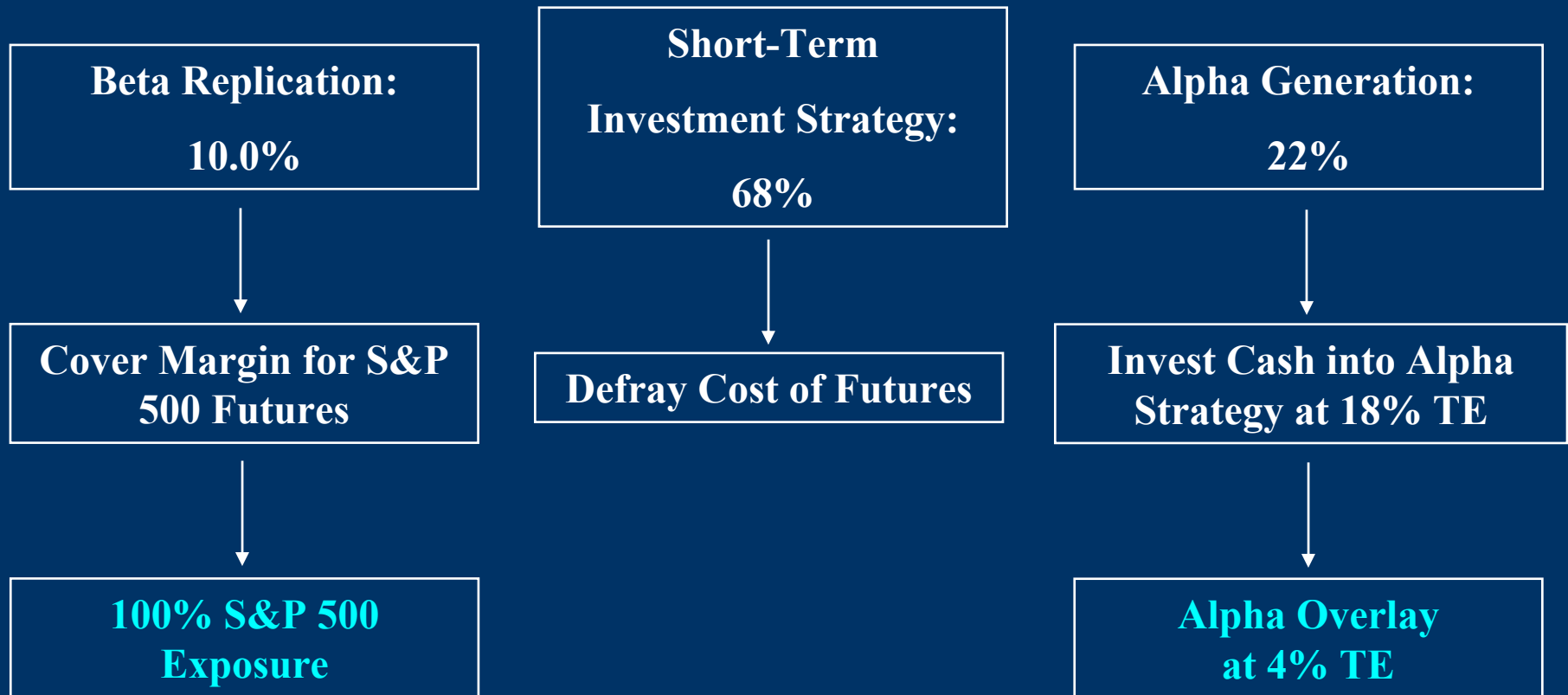


Please refer to Note 14 for relevant disclosures.



## STRUCTURING A MANDATE

### Separate Account Structure Targeting a 4% Alpha on the S&P 500



**Beta Replication + Alpha Overlay = S&P 500 + 4% Alpha**

Please refer to Note 15 for relevant disclosures.



# Disclosures

# PORTFOLIO NOTES



This page contains the allocation information for the historical simulation of the portfolio as well as forward looking assumptions for expected returns, volatility, tracking error, and correlations used in this analysis. The portfolio capital allocation weights (illustrated below) are estimates based either upon Bridgewater Associates' understanding of standard asset allocation (which may change without notice) or information provided by or publicly available from the recipient of this presentation. Asset class returns from January 1970 to the present are actual market returns where available and otherwise a proxy index constructed based on Bridgewater Associates understanding of global financial markets. Information regarding specific indices and simulation methods used for proxies is available upon request (except where the proprietary nature of information precludes its dissemination). The assumed annual return on cash is 5%. Results are hypothetical or simulated. HYPOTHETICAL OR SIMULATED PERFORMANCE RESULTS HAVE CERTAIN INHERENT LIMITATIONS. UNLIKE AN ACTUAL PERFORMANCE RECORD, SIMULATED RESULTS DO NOT REPRESENT ACTUAL TRADING OR THE COSTS OF MANAGING THE PORTFOLIO. ALSO, SINCE THE TRADES HAVE NOT ACTUALLY BEEN EXECUTED, THE RESULTS MAY HAVE UNDER OR OVER COMPENSATED FOR THE IMPACT, IF ANY, OF CERTAIN MARKET FACTORS, SUCH AS LACK OF LIQUIDITY. SIMULATED TRADING PROGRAMS IN GENERAL ARE ALSO SUBJECT TO THE FACT THAT THEY ARE DESIGNED WITH THE BENEFIT OF HINDSIGHT. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN.

		Ratio Tracking Error & Volatility Excess Return Allocation				Correlation Matrix														
						US Bonds	MSCI EAFE	US Large Cap	US Small Cap	Hedge Fund	IL Bonds	Real Estate	U.S. Bond Aggregate (Extended)	U.S. Large-Cap Equities (Extended)	U.S. Small-Cap Equities (Extended)	World Equities Ex-US (Extended)	Hedge Fund - Cash	U.S. IL Bonds (Extended)	U.S. Real Estate (Extended)	
Alpha	US Bonds	0.23	0.5%	2%	0.25	1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	MSCI EAFE	0.14	1.8%	6%	0.3	0.3	1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	US Large Cap	0.21	1%	4%	0.25	0.3	0.3	1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	US Small Cap	0.05	1.8%	6%	0.3	0.3	0.3	0.3	1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	Hedge Fund	0.05	4.9%	7%	0.7	0.3	0.3	0.3	0.3	1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	IL Bonds	0.05	0.5%	2%	0.25	0.3	0.3	0.3	0.3	0.3	1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
	Real Estate	0.05	1.8%	6%	0.3	0.3	0.3	0.3	0.3	0.3	0.3	1	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.3
Beta Assets	U.S. Bond Aggregate (Extended)	0.23	1.15%	4.62%	0.25	0.3	0.06	0.06	0.06	0	0.06	0.12	1	0.2	0.2	0.2	0	0.2	0.4	
	U.S. Large-Cap Equities (Extended)	0.43	3.28%	13.11%	0.25	0.06	0.22	0.3	0.22	0	-0.06	0.12	0.2	1	0.75	0.75	0	-0.2	0.4	
	U.S. Small-Cap Equities (Extended)	0.05	4.13%	16.52%	0.25	0.06	0.22	0.22	0.3	0	-0.06	0.12	0.2	0.75	1	0.75	0	-0.2	0.4	
	World Equities Ex-US (Extended)	0.14	3.62%	12.06%	0.3	0.06	0.3	0.22	0.22	0	-0.06	0.12	0.2	0.75	0.75	1	0	-0.2	0.4	
	Hedge Fund - Cash	0.05	0%	0%	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	
	U.S. IL Bonds (Extended)	0.05	1.42%	5.67%	0.25	0.06	-0.06	-0.06	-0.06	0	0.3	0.12	0.2	-0.2	-0.2	-0.2	0	1	0.4	
	U.S. Real Estate (Extended)	0.05	3.81%	15.22%	0.25	0.12	0.12	0.12	0.12	0	0.12	0.3	0.4	0.4	0.4	0.4	0	0.4	1	



# NOTES

Note 1: The “Good” and “Bad” Risk Budgets shown are for illustrative purposes only. They are not based on any actual portfolio.

Note 2: The charts shown are based on Bridgewater’s understanding of the “Typical Portfolio” as described on the “Portfolios Notes” slide. They show the degree of risk in the alpha and beta portions of the portfolio as determined by Bridgewater’s proprietary risk budgeting tool. These estimates are reliant upon assumptions about risk, return and correlations. Reasonable people may disagree as to the assumptions used. The numbers shown in the analysis do not predict actual performance and are used for illustrative purposes only.

Note 3: The “Typical Portfolio” is simulated and gross of fees. Drawdowns are calculated as the drawdown from previous peak. The “Equity Component of Typical Portfolio” is the total equity portion of the Typical portfolio. For a detailed description of the “Typical Portfolio” please see the “Portfolios Notes” slide. **SIMULATED PERFORMANCE IS NOT NECESSARILY INDICATIVE OF ACTUAL OR FUTURE PERFORMANCE.**

Note 4: This chart is not based on historical returns and is for illustrative purposes. The mathematical relationship between standard deviation and correlation predetermines the information shown.

Note 5: For illustrative purposes only. For a detailed description of the “Typical Portfolio” please see the “Portfolios Notes” slide. The Typical alpha pie shown is based on Bridgewater’s understanding of typical active management that links the allocation to the allocation of the beta portfolio. The “Diversified Mix” beta risk weight pie is based on Bridgewater’s All Weather strategy and is for illustrative purposes only. The “Diversified Mix” alpha portfolio is based on Bridgewater’s Pure Alpha strategy and is for illustrative purposes only. These risk weights should not be deemed representative of the asset weights held in the strategy at any point in time and may change without notice. Risk impact is the measure of the allocation of risk within a portfolio. An allocation’s risk weight is calculated by dividing the product of the allocation’s capital weight and its associated expected volatility by the sum of the product of all of the allocations capital weights and associated expected volatilities. Expected volatilities are estimates of long-term volatilities of economic asset classes. Volatility is measured by the standard deviation of returns. The estimates are based on Bridgewater’s understanding of global market pricing and may change without notice. Actual volatilities will vary from estimates. There is no guarantee that the results shown will be achieved. The expected return, risk and ratios are based on Bridgewater’s expectations for return, risk and correlation of each strategy and are not based on the experienced returns of any account or accounts. Actual returns, risks and information ratios are likely to vary from expected returns and risks. There is no guarantee that the above results will be achieved.

Note 6: The chart is for illustrative purposes only. It is based on Bridgewater analysis of return and risk expectations from an independent study by Rocaton, a third party consultant. No claim is being made that any account can or will achieve the theoretical results shown. This illustration should not be relied upon to make predictions of actual future account performance.

Note 7: The chart is for illustrative purposes only. It is based on Bridgewater analysis of return and risk expectations from an independent study by Rocaton, a third party consultant, scaled to the expected volatility level of domestic stocks. Risk is measured by the standard deviation of returns. This would be accomplished by leveraging the lower risk assets and de-leveraging the higher risk assets. No claim is being made that any account can or will achieve the theoretical results shown. This illustration should not be relied upon to make predictions of actual future account performance.

Note 8: For illustrative purposes only. The capital allocation of the Typical Portfolio is detailed on the “Portfolio Notes” slide. The Typical Portfolio pie chart illustrates the degree of risk in the beta portion of the portfolio as determined by Bridgewater’s proprietary Risk Budget Tool. These estimates are reliant upon assumptions about risk, return and correlations. Reasonable people may disagree as to the assumptions used. The “Diversified Beta” risk allocation is used as an illustration of Bridgewater’s All Weather strategy risk allocation and should not be deemed representative of the asset weights held in the strategy at any point in time and may change without notice. Risk impact is a measure of the allocation of risk within a portfolio.

Note 9: The Typical Portfolio (described on the “Portfolio Notes” slide) is simulated and gross of fees. From January 1970 through May 1996 the Diversified Beta strategy is based on Bridgewater’s All Weather strategy and is simulated and gross of all fees (including investment management fees). From June 1996 through the present the Diversified Beta strategy’s returns are based on the Bridgewater All Weather strategy gross of fees returns, scaled as described below. Because the returns are scaled, they may be deemed simulated or hypothetical. For the full Bridgewater All Weather strategy gross and net of fees performance disclosures as well as the “All Weather Simulated Portfolio Note” please see the All Weather Performance Disclosures slide. **SIMULATED PERFORMANCE IS NOT NECESSARILY INDICATIVE OF ACTUAL OR FUTURE PERFORMANCE.** The Diversified Beta strategy returns have been scaled to match the return or risk (as labeled) level of the Typical Portfolio. In the case where the Diversified Beta strategy is scaled to the same return monthly excess returns are scaled linearly by a scaling factor, which is calculated by dividing the annualized excess return of the Typical Portfolio by the annualized excess return of the Diversified Beta strategy. In the case where the Diversified Beta strategy is scaled to the same risk as the typical portfolio monthly, the Diversified Beta strategy excess returns are scaled linearly by a scaling factor, which is calculated by dividing the annualized volatility of the Typical Portfolio by the annualized volatility of the Diversified Beta strategy. The benchmark return (US repo rate) is subsequently added back to the adjusted excess returns to arrive at a total return for the specified return level. Due to the effects of compounding, annualized historical returns, standard deviations, and Sharpe ratios will not scale perfectly linearly. Worst 1 and 2 year return periods are the worst performing 12 month and 24 month periods and are based on the most negative cumulative returns over 12 and 24 month periods. Where shown, drawdowns are calculated as the drawdown from previous peak.

Note 10: “Diversified Beta” mandates are represented by all Bridgewater portfolios that utilize Bridgewater’s All Weather strategy. AUM figures are in US\$ billions, as of December 31 for each calendar year.



## NOTES

Note 11: For illustrative purposes only. The “Traditional Global Fixed Income Strategy” pie chart weights are an estimate based upon Bridgewater Associates’ understanding of the makeup of the global aggregate bond universe. The “ Fully Diversified Alpha Overlay” chart is used as an illustration of Bridgewater’s Pure Alpha strategy risk allocation and is not representative of the asset weights held in the strategy at any point in time and may change without notice. Information ratio is a measure of the efficiency by which active managers convert active risk into excess returns. It is calculated by dividing the excess returns experienced over a given period by the volatility of the value added during the same period. The number of years expected to have 95% confidence of a positive excess return is based purely on statistical analysis, and is not based on the experienced returns of any account or accounts. Actual returns, risks and information ratios are likely to vary from expected returns and risks. There is no guarantee that the above results will be achieved.

Note 12: Alpha overlay performance is based on the Bridgewater Pure Alpha Strategy 12% Volatility gross of fees returns scaled to a 6% risk level. Annualized excess returns are scaled by a scaling factor, which is calculated by dividing 6% by the annualized standard deviation of the annualized excess returns. Due to the effects of compounding, annualized excess returns will not scale perfectly linearly. Because the returns are scaled, they may be deemed to be simulated or hypothetical. Please see the simulated performance disclosure on the Pure Alpha Performance Disclosures slide. PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE PERFORMANCE. For the full Bridgewater Pure Alpha strategy gross and net of fees performance disclosures please see the Pure Alpha Performance Disclosures slide.

The underlying data used to calculate the US Equities, Global Equities, US Fixed Income, Global Fixed Income, and Currency Overlay performance statistics comes from InvestorForce. All managers that submit data to InvestorForce are included in the analysis except where omission of returns by the managers necessitates exclusion. Excess returns and standard deviations are averages taken across the relevant active manager universe. Value added is calculated by subtracting the official returns of each manager’s specified benchmark from the total return experienced by the manager over the period indicated. Annualized annual excess returns are scaled by a scaling factor, which is calculated by dividing 6% by the annualized standard deviation of the annualized excess returns. PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE PERFORMANCE.

Note 13: The chart shows the complexion of active management strategies managed by Bridgewater. “Diversified Alpha” mandates are represented by all active Bridgewater portfolios that utilize Bridgewater’s Pure Alpha strategy, which utilizes the widest opportunity set of active management decisions across numerous asset classes. “Traditional” mandates are represented by all active Bridgewater portfolios other than “Diversified Alpha” mandates, i.e., portfolios that utilize active management strategies that are more constrained with narrower active management opportunity sets.

Note 14: The chart shown is for illustrative purposes only. No claim is being made that any account can or will achieve the theoretical results shown above. Expected alpha/returns tracking error/volatility are statistical estimates. This illustration should not be relied upon to make predictions of actual future account performance.

Note 15: The chart shown is for illustrative purposes only and shows how an investor might implement a beta replication + alpha overlay strategy. This illustration should not be relied upon to make predictions of actual account implementation.



# **ALL WEATHER PERFORMANCE DISCLOSURES**



## **Bridgewater All Weather Strategy Gross Performance Disclosure:**

For the period June 1996 (the inception of the strategy) through August 2001 the performance is based on the total return of the Bridgewater All Weather strategy as implemented for Bridgewater's principals and their affiliates and was not fully hedged to the US Dollar. The All Weather strategy currently is fully hedged, and the performance reflected after August 2001 includes these hedging transactions. For the period of August 2001 through present the performance shown is the actual total returns of the longest running fully funded All Weather account. For the entire history excess returns are calculated by subtracting the cash return of the US repo rate from the total returns described above. Of note, the All Weather strategy's target leverage, volatility and return, as well as the asset mix varied from June 1996 to July 2005. From August 2005 through the present the strategy has targeted 10% volatility. Bridgewater manages additional All Weather portfolios not included in this performance history.

The performance provided is gross of fees and includes the reinvestment of all interest, gains, and losses. Returns will be reduced by the investment advisory fees and any other expenses that may be incurred in the management of the account. Investment advisory fees are described in Part II of Bridgewater's Form ADV. No representation is being made that any account will or is likely to achieve returns similar to those shown. Trading in futures is risky and can result in losses as well as profits. PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS.

## **Bridgewater All Weather Strategy Net Performance Disclosure:**

For the period June 1996 (the inception of the strategy) through August 2001 the performance is based on the total return of the Bridgewater All Weather strategy as implemented for Bridgewater's principals and their affiliates and was not fully hedged to the US Dollar. The All Weather strategy currently is fully hedged, and the performance reflected after August 2001 includes these hedging transactions. For the period of August 2001 through present the performance shown is the actual total returns of the longest running fully funded All Weather account. For the entire history excess returns are calculated by subtracting the cash return of the US repo rate from the total returns described above. Of note, the All Weather strategy's target leverage, volatility and return, as well as the asset mix varied from June 1996 to July 2005. From August 2005 through the present the strategy has targeted 10% volatility. Bridgewater manages additional All Weather portfolios not included in this performance history.

The performance provided is net of fees and includes the reinvestment of all interest, gains, and losses. The net of fees returns have been calculated using our standard fee schedule for a minimum size account, which are the highest fees we have or would currently charge an account. Investment advisory fees are described in Part II of Bridgewater's Form ADV. No representation is being made that any account will or is likely to achieve returns similar to those shown. Trading in futures is risky and can result in losses as well as profits. PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS.

Performance as of the current month is estimated and subject to change.

**Individually Managed Accounts:** Individually managed account performance will vary based on constraints, funding levels and other factors.

## **Terminology:**

Excess return is calculated by subtracting the return of the cash benchmark from the total return over a given period.

Volatility refers to the standard deviation of monthly total returns. Volatility is one possible measurement of the dispersion of returns.

Sharpe ratio is calculated by dividing the excess return over a given period by the volatility of the excess return during the same period.

Past excess return and volatility are not necessarily indicative of future excess return and volatility and there can be no assurance that the excess return and volatility actually reflected in accounts will be at historical levels or levels either specified in the investment objectives or suggested by our forecasts.

## **All Weather Simulated Portfolio Note:**

All Weather is simulated and gross of all fees (including investment management fees). All Weather is constructed using a proprietary mix and weighting of assets. The returns used to construct All Weather are actual market returns where available and Bridgewater Associates' estimates otherwise. Bridgewater Associates' estimates for various market returns are based on Bridgewater Associates' understanding of global financial markets and may change without notice. The benchmark cash return is defined as the Repo rate since 1991 and prior to 1991 the lesser of the 3 month T-bill times 1.05 and the 3 month Euro rate. For a description of the limitations of simulated portfolios please see the "Simulated Performance Disclosure" below.

## **Simulated Performance Disclosure:**

HYPOTHETICAL OR SIMULATED PERFORMANCE RESULTS HAVE CERTAIN INHERENT LIMITATIONS. UNLIKE AN ACTUAL PERFORMANCE RECORD, SIMULATED RESULTS DO NOT REPRESENT ACTUAL TRADING OR THE COSTS OF MANAGING THE PORTFOLIO. ALSO, SINCE THE TRADES HAVE NOT ACTUALLY BEEN EXECUTED, THE RESULTS MAY HAVE UNDER OR OVER COMPENSATED FOR THE IMPACT, IF ANY, OF CERTAIN MARKET FACTORS, SUCH AS LACK OF LIQUIDITY. SIMULATED TRADING PROGRAMS IN GENERAL ARE ALSO SUBJECT TO THE FACT THAT THEY ARE DESIGNED WITH THE BENEFIT OF HINDSIGHT. NO REPRESENTATION IS BEING MADE THAT ANY ACCOUNT WILL OR IS LIKELY TO ACHIEVE PROFITS OR LOSSES SIMILAR TO THOSE SHOWN.



## DEFINITIONS FOR RBT SLIDES

**Alpha:** The risk taken by active managers above and beyond their passive, benchmark-replicating positions.

**Beta:** The risk in a portfolio that arises from passively holding asset classes.

**Portfolio VaR:** A measure of the amount of a total portfolio's risk, taking into consideration correlations within and across asset classes.

**Var Share:** A measure of the amount of a total portfolio's risk represented by a particular piece when correlations between asset classes are assumed to be 1.

**CoVar Share:** A measure of the amount of a total portfolio's risk represented by a particular piece when all the cross correlations are taken into account.

**Excess return:** The return above the risk free rate.

**Sharpe Ratio:** The ratio of Beta excess returns to VaR.

**Information Ratio:** The ratio of Alpha excess returns to VaR.



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**Research/Outlook Disclosure:**

This research is based on Bridgewater Associates, Inc. analysis and on current public information from sources that we consider reliable, but we do not assume responsibility for the accuracy of the data. We obtain economic and market data from government and private sources. Major external databases used include statistics compiled by the International Monetary Fund, central monetary authorities of G-8 countries, the OECD, the Commerce Department, and external data vendors, such as DRI, DataStream, Compustat, and Bloomberg.

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