

Hedge Fund Indexes

Prepared for QWAFEFW Chicago
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By Matthew Moran

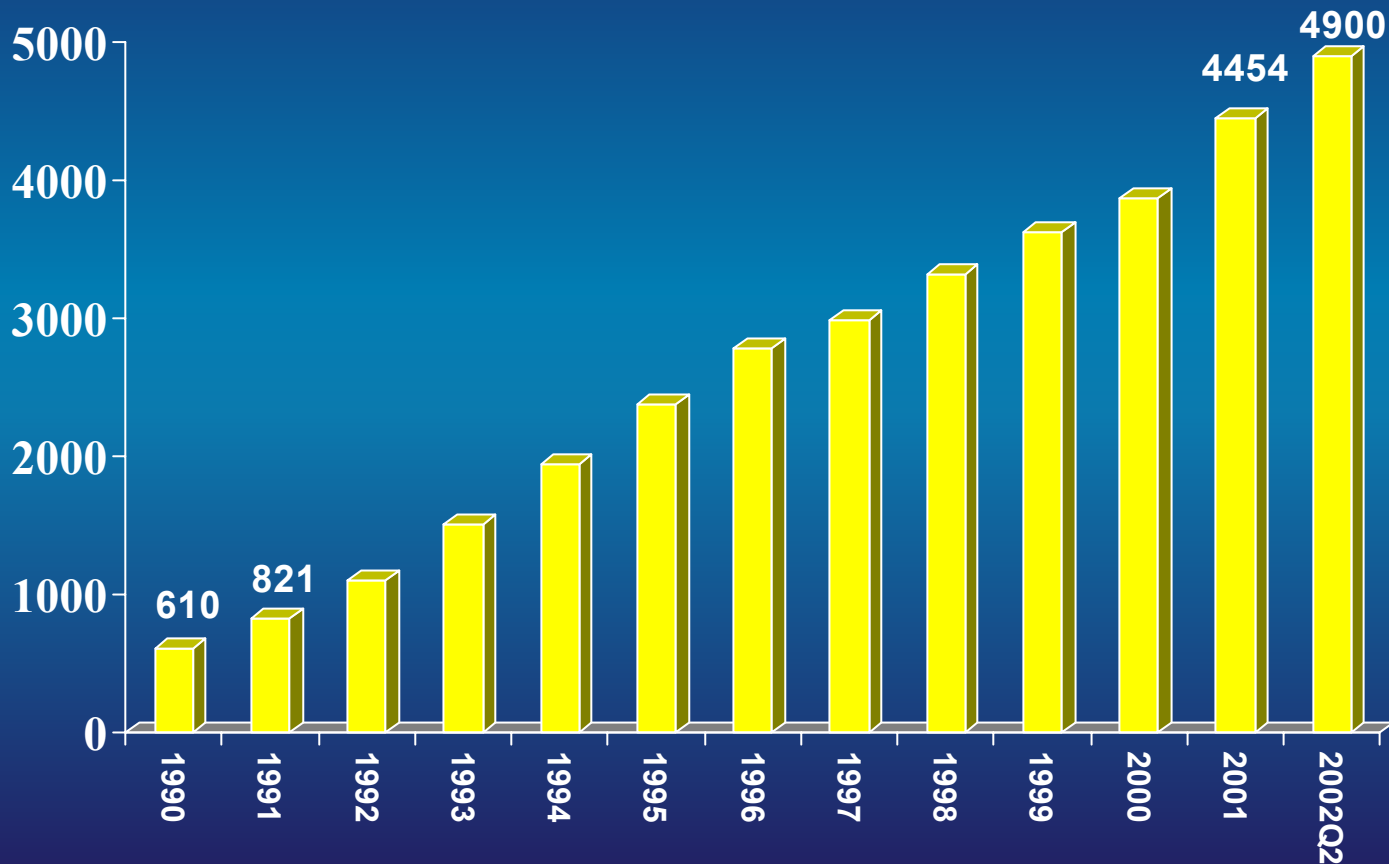
Hedge Fund Assets (in \$billions)

Source: Hedge Fund Research - HFR Inc.



Number of Hedge Funds

Source: HFR, Inc.

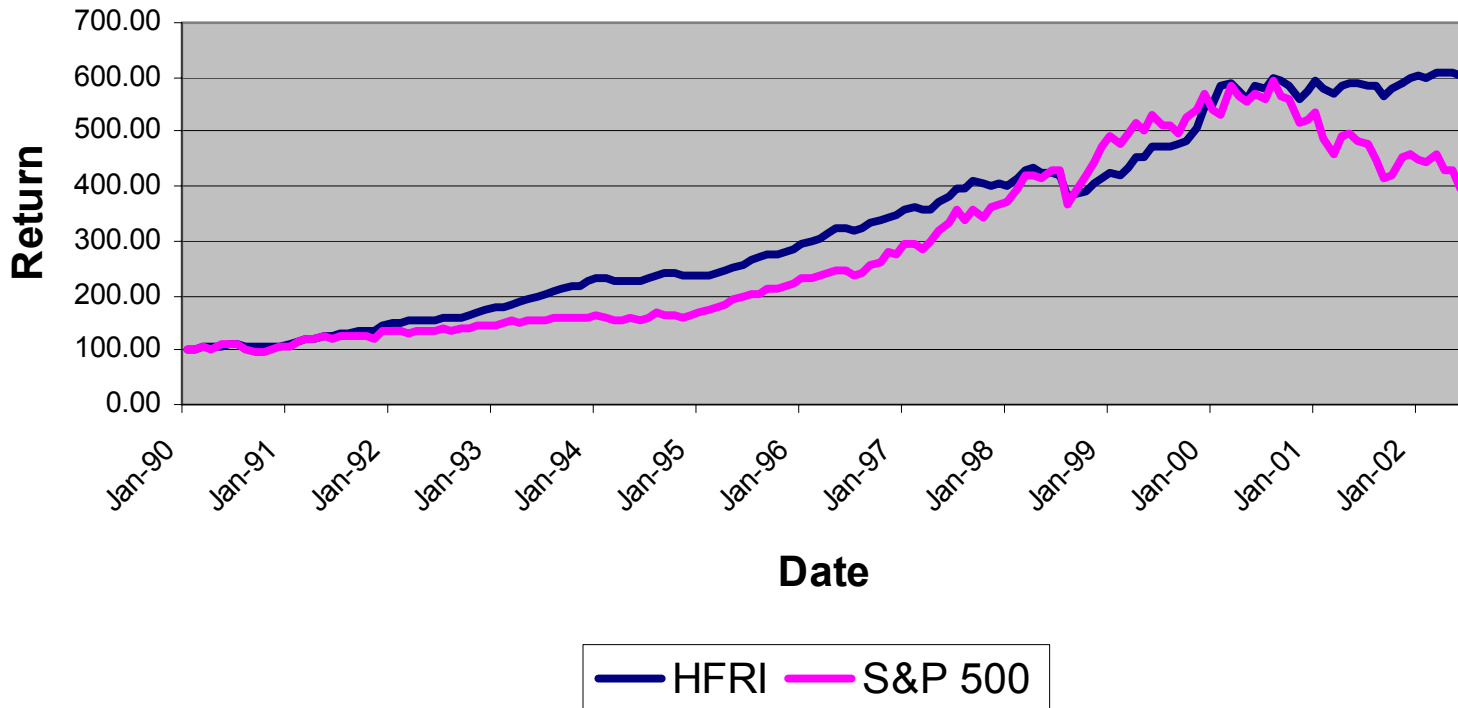


Sampling of Hedge Fund Indexes

<u>Provider</u>	<u># of Indices</u>	<u>Launch Date</u>	<u># of Funds</u>
Hennessee Grp	23	1992	500
HFR	33	1994	1,300
MAR	19	1994	1,500
Van Hedge	15	1995	750
EACM	13	1996	100
Hedgefund.net	33	1998	1,800
CSFB/Tremont	9	2000	383
Zurich Capital	5	2001	60
S&P	1	2002	50
MSCI	140	2002	1,500

Sources: Paper by Amenc & Martinelli, 2002

Hedge Funds v Equities



Caution: Hedge fund indexes are subject to survivorship and selection biases.

Comparing Performance (Jan. 1990 – Dec. 2001)

Source: Schneeweis and Georgiev, *The Benefits of Hedge Funds*, 2002

	<u>Hedge Funds</u> <u>EACM 100</u>	<u>Stocks</u> <u>S&P 500</u>	<u>Bonds</u> <u>Lehman Gov/Corp</u>
Annualized Return	13.8%	12.9%	8.1%
Annualized StdDev	4.3%	14.6%	4.2%
Sharpe Ratio	1.95	0.51	0.62
Minimum Monthly Return	-4.5%	-14.5%	-2.5%
Correlation with EACM 100		0.39	0.17

Alternative Assets & Risk Control

Calculations from 1990

<u>Weights</u>			<u>Return</u>	<u>Risk</u>	<u>Return/Risk</u>
<u>Stocks</u>	<u>Bonds</u>	<u>Hedge Funds</u>			
60	40	0	8.77%	8.096%	1.083
58	37	5	9.21%	7.918%	1.163
55	40	5	9.27%	7.387%	1.255
60	35	5	9.38%	8.221%	1.141
50	35	15	9.73%	7.02%	1.386

Calculations from 1970

<u>Weights</u>			<u>Return</u>	<u>Risk</u>	<u>Return/Risk</u>
<u>Stocks</u>	<u>Bonds</u>	<u>Commodities</u>			
60	40	0	10.29%	11.573%	0.889
58	37	5	10.44%	10.652%	0.980
55	40	5	10.29%	10.826%	0.950
60	35	5	10.54%	10.826%	0.974
55	30	15	10.73%	9.07%	1.183

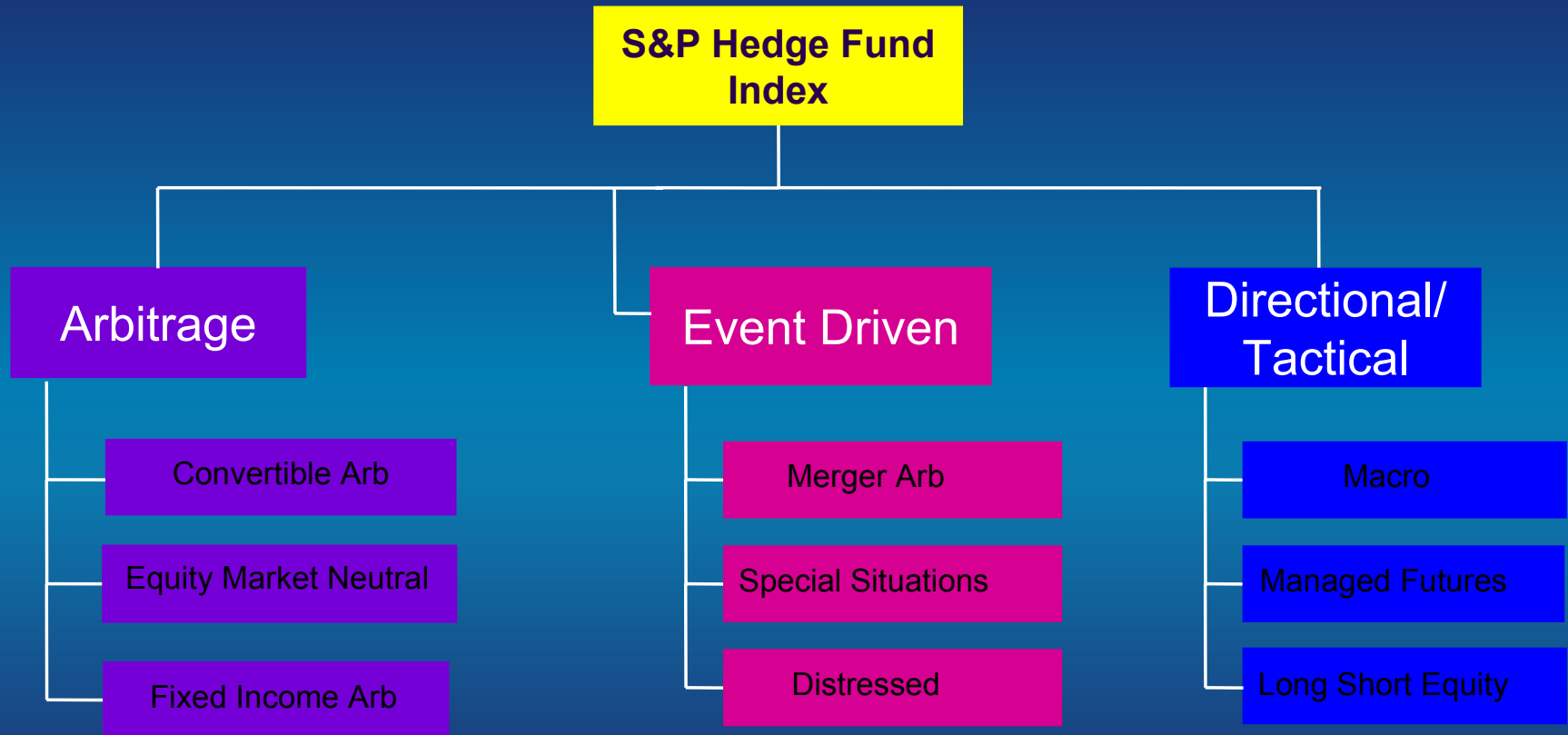
S&P Hedge Fund Index

The source for some of the nearby slides is Standard & Poor's. Please visit <http://www.spglobal.com> for more information

S&P Hedge Fund Index - Key Facts

- Investable - shares of S&P Hedge Fund Index available
- \$270 Million already invested
- Daily liquidity
- 11.3% return on Pro Forma index from 1998 to present - net of hedge fund manager fees
- 3% Standard Deviation of returns
- 2.2 Sharpe ratio
- Equal-weighted across 9 hedge fund strategies to maximize diversification
- Correlations
 - .07 S&P 500
 - .52 High Yield Bonds
 - .26 US T-bills
 - .12 MSCI ACWI

S&P Index Structure

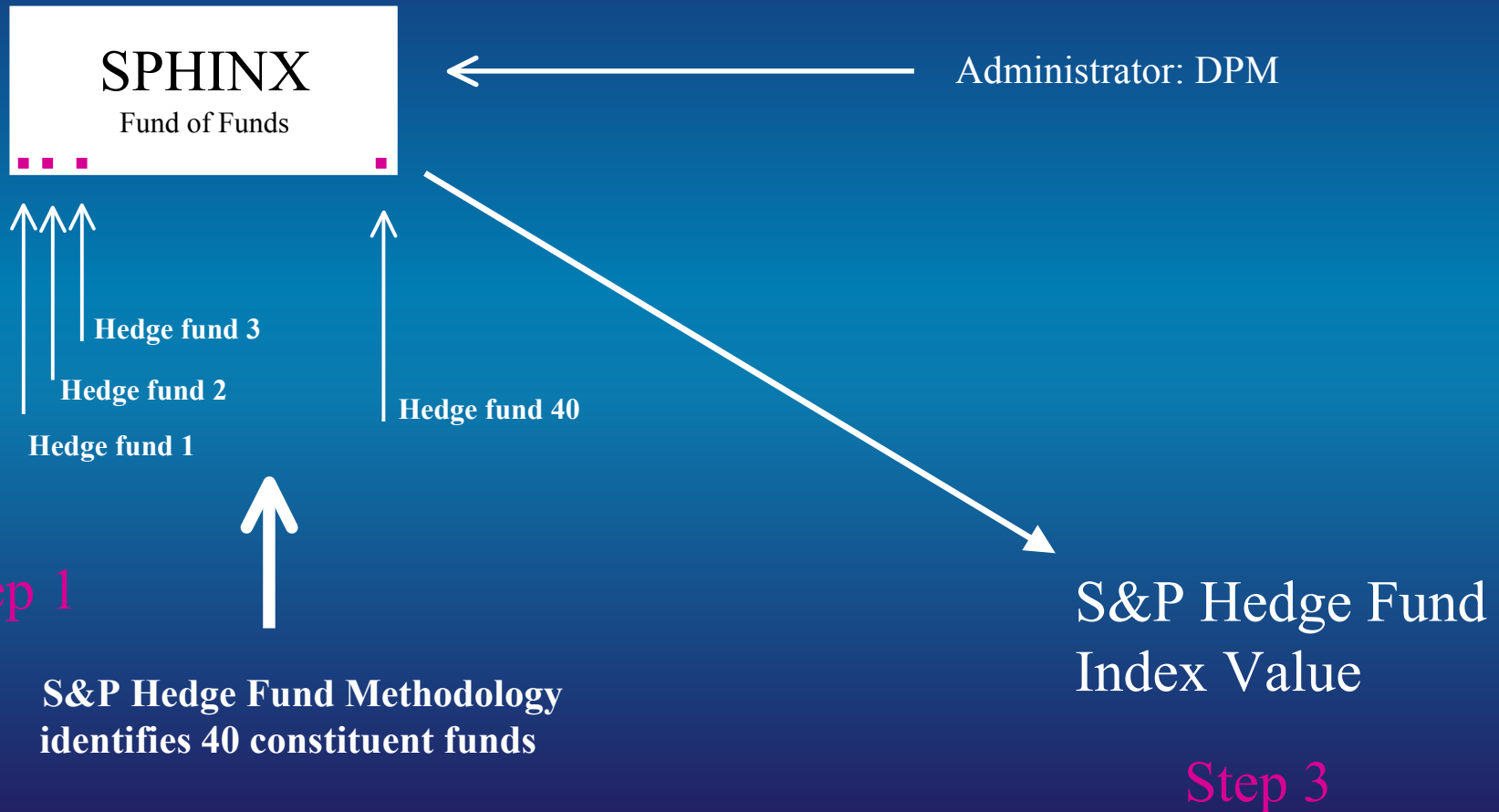


S&P Index Calculation

Index Fund Manager: Plus Funds

Step 2

*Managed Accounts



MSCI Hedge Fund Indexes

The source for many of the following slides is MSCI.

www.msci.com/hedge

MSCI Hedge Fund Indexes – Background

- ◆ Strong interest expressed by clients for MSCI Hedge Fund Indices to help them better understand performance characteristics of hedge fund strategies
- ◆ Developed the product in consultation with various market participants, including
 - hedge fund managers
 - funds of hedge funds
 - institutional investors
- ◆ Financial Risk Management provided hedge fund industry insight to assist in the development of the index structure and classification framework

MSCI Hedge Fund Indices

- ◆ MSCI Hedge Fund Classification StandardSM
 - Clearly defined
 - Consistently applied
- ◆ Fully transparent index construction
- ◆ Flexible index design
- ◆ Independent and objective index maintenance
- ◆ Web-based analytical tool – MSCI Hedge Fund Indices Subscriber SiteSM – facilitates index and hedge fund analysis

MSCI Database Overview

Comprehensive and reliable hedge fund database

- ◆ More than 1,500 funds have agreed to participate in the database to date
- ◆ Over 1,000 hedge funds in the MSCI Hedge Fund Indices and database to date
- ◆ Over 140 indices

MSCI - Defining the Hedge Fund Opportunity Set

For hedge funds, the concept of “a market” providing both the definition and the measure of the opportunity set does not exist

hedge funds use investment management tools and techniques, such as short selling, use of derivatives and leverage which imply that the underlying securities cannot capture the opportunity set

the opportunity set is best described as the full range of hedge fund strategies which is best represented by the hedge funds that implement these strategies

The hedge fund opportunity set available to each investor may not be the same due to

the private nature of hedge fund investing

different terms of investment negotiated with different investors

MSCI Index Objectives and Guiding Principles

Objective

- To fairly represent the relevant opportunity set at the strategy and composite level in a transparent and flexible manner

Guiding Principles

- Broad representation of the opportunity set
- Fair representation at the strategy level
- Fully transparent index construction
- Flexibility of building block design
- Independence and objectivity

MSCI - Defining Hedge Fund Strategies

- ◆ Strategies are defined according to the common characteristics that shape their performance
- ◆ The three primary characteristics are Investment Process, Asset Class and Geographical Region
 - ◆ Example: Merger Arbitrage / Equity / North America
- ◆ Similar investment processes are combined into process groups providing another level of aggregation
 - ◆ Example: Relative Value / Merger Arbitrage / Equity / North America
- ◆ Likewise, geographical regions with similar profiles are grouped into areas
- ◆ Secondary characteristics may also be used to provide further granularity
 - ◆ Example: Relative Value / Merger Arbitrage / Equity / Developed Markets / North America / Mid and Large Cap

MSCI Hedge Fund Index Eligibility Requirements

- ◆ MSCI includes both open and closed hedge funds in the indices
- ◆ MSCI includes emerging and established funds
- ◆ Constituent eligibility requirement example:
 - Agreement on strategy classification
 - Minimum \$15 million of assets under management
 - Provide asset and return data since inception
 - Audited financial statements
- ◆ Equal weighting of fund returns in strategy and aggregate indices
 - Better reflects the generic investment process
 - Produces more stable and meaningful indices
- ◆ Due diligence process ensures funds are classified consistently

MSCI Index Families

MSCI provides three composite indices based on fund size

- ◆ Broad Hedge Fund Composite Index Series

Funds in excess of \$15 million

- ◆ Core Fund Index Series

Funds in excess of \$100 million within a given strategy

Minimum fund size cut-off is not influenced by strategy, process, geography or asset class

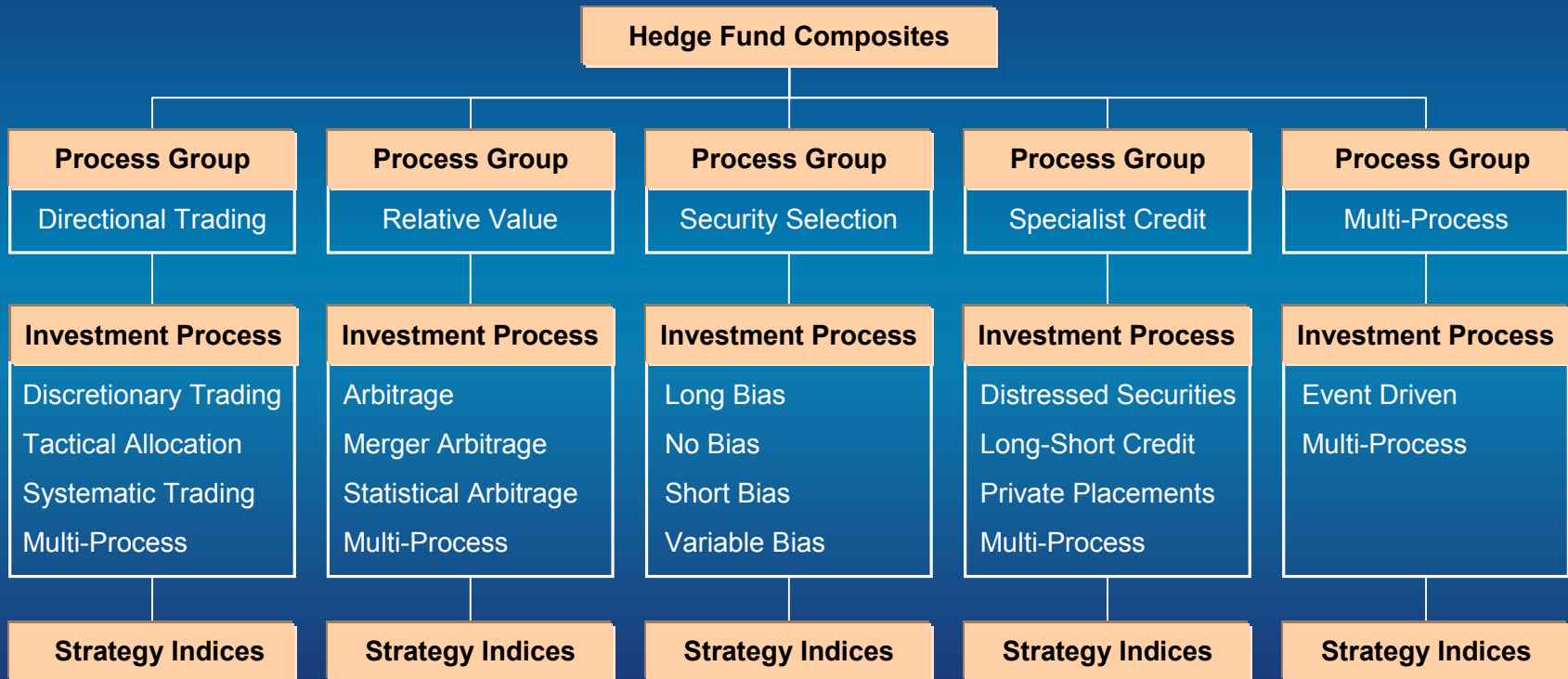
- ◆ Small Fund Index Series

Funds between \$15 million and \$100 million

Four Levels of Breadth and Coverage

MSCI Index Structure

This chart represents the detailed structure of the MSCI Hedge Fund Indices, beginning at the strategy level and aggregating up to the MSCI Hedge Fund Composite Index



Estimating the Hedge Fund Universe

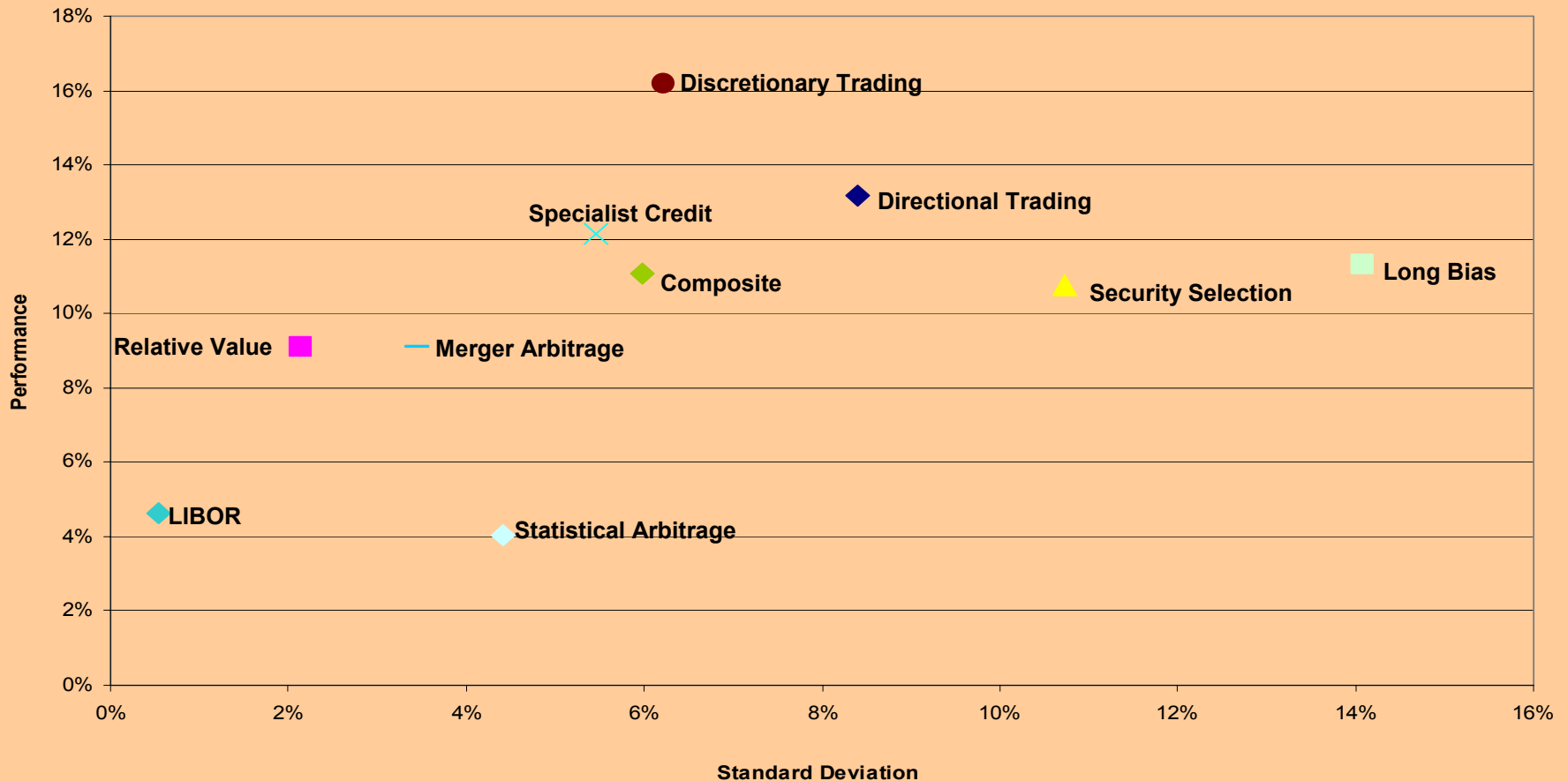
- ◆ MSCI has identified a universe of approximately 2,700 hedge funds
- ◆ Although 6,000 hedge funds are commonly referenced, a large proportion do not fit MSCI's definition of hedge funds, such as:
 - ◆ funds of hedge funds
 - ◆ long-only funds
 - ◆ managed accounts
- ◆ Of the 2,700 hedge funds identified, 1,500 or 56% have agreed to participate in the MSCI Hedge Fund Indices to date

Uses of Hedge Fund Indices

The MSCI Hedge Fund Indices are designed to contribute to the investment process in the following ways:

- As indicators of the performance for the various hedge fund strategies
- As the basis for performance comparisons
- As the basis for high level performance attribution for a portfolio of hedge funds
- As a research tool

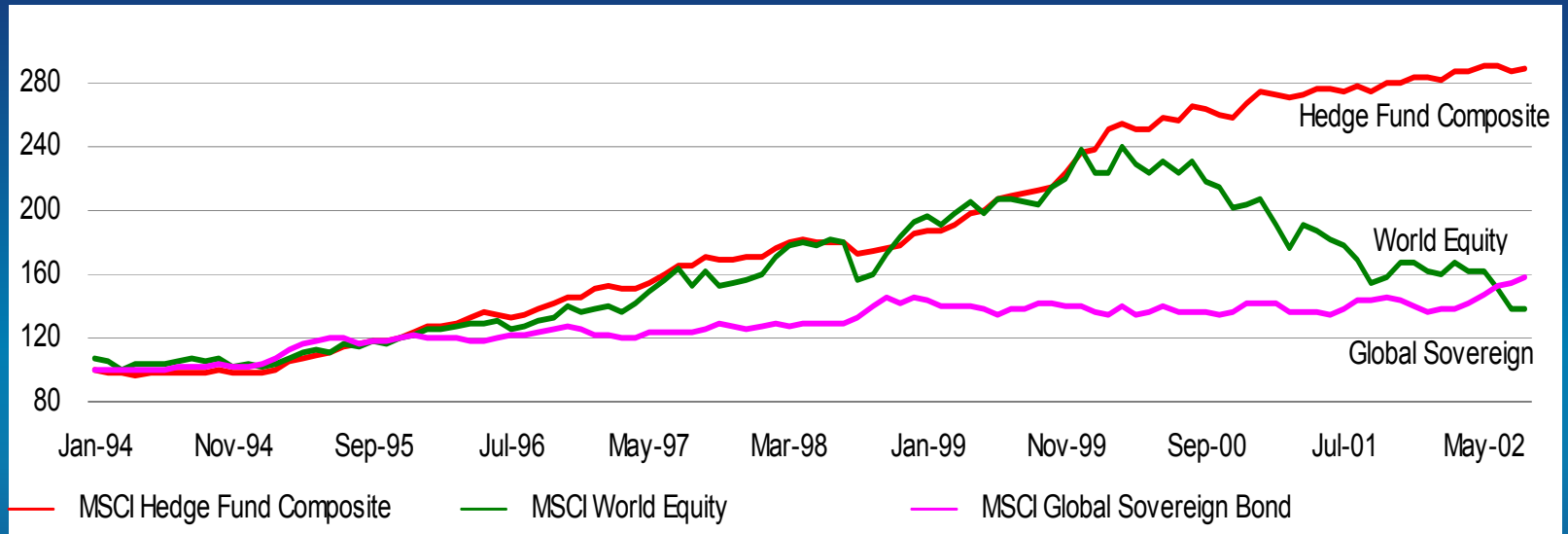
Comparison based on 3 Years of Data Ending August 2002



MSCI Hedge Fund Composite Versus Other Market Indices

Long Term Performance

MSCI Hedge Fund Composite Index, MSCI World Equity and MSCI Global Sovereign Bond



Index Statistics for periods ending August 2002

	HF Composite	World Equity	Global Sovereign
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1 Year Return	3.77%	-18.31%	10.05%
3 Year Return	11.07%	-12.32%	4.30%
5 Year Return	11.68%	-1.92%	5.04%
5 Year St Dev	6.12%	16.40%	6.80%
5 Year Sharpe Ratio	1.11	-0.42	0.02
5 Year Beta	0.26	1.00	-.41

Transparency

Benefits and Attributes

MSCI provides this level of index transparency

- ◆ For index and constituent subscribers, the constituent fund data in each index is available and linked directly to the index, enabling clients to better analyze index performance and risk characteristics
- ◆ Complete and published methodology clarifies how MSCI constructs and maintains the indices
- ◆ Web based analytical tool – MSCI Hedge Fund Indices Subscriber Site – which facilitates index and fund analysis

"Performance Evaluation of Hedge Funds with Option-based and Buy-and-Hold Strategies"

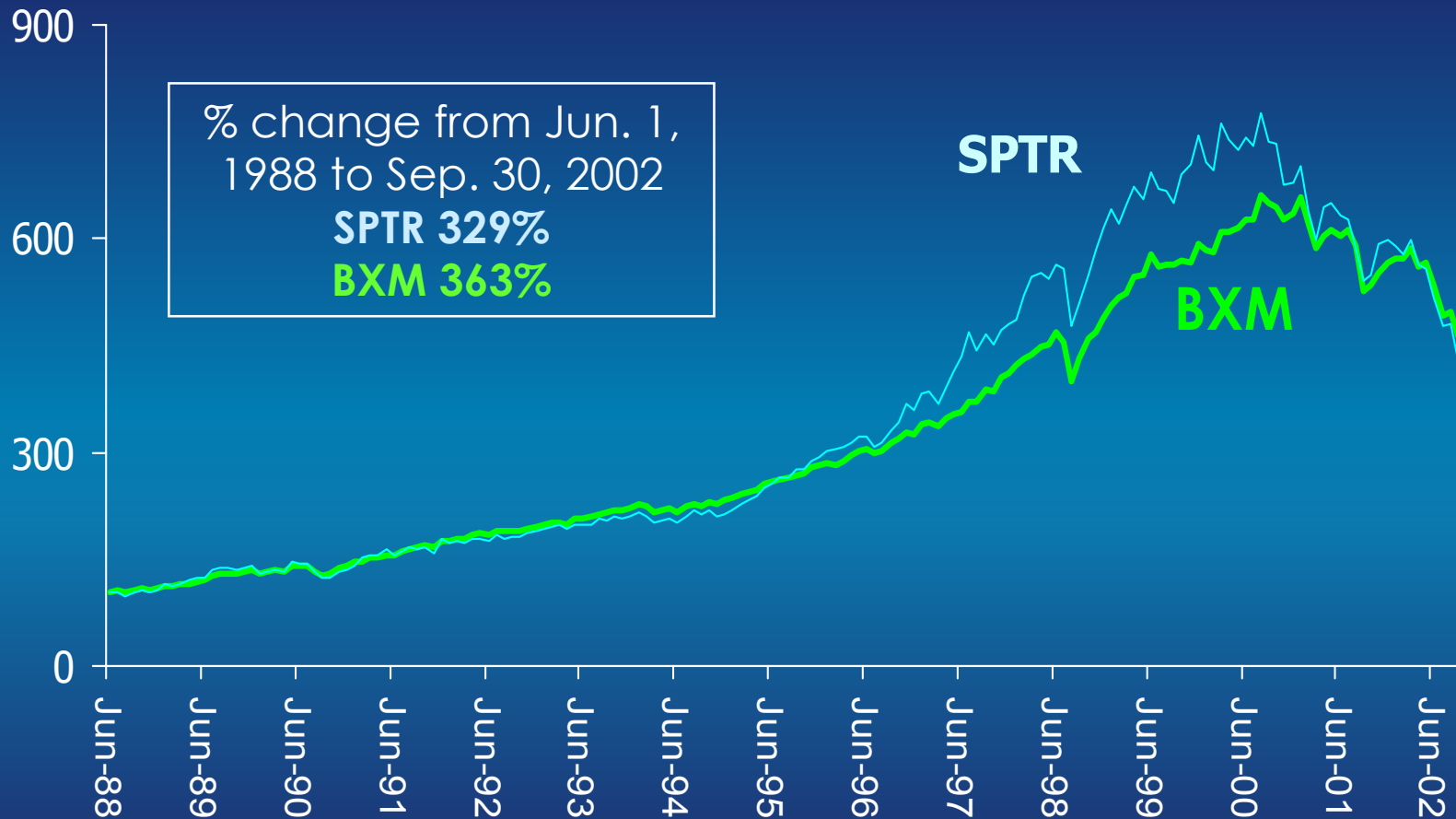
Paper by Agarawal and Naik

at <http://www.gsu.edu/~fncvaa/benchmark.pdf>

Noted that - "hedge fund returns exhibit non-linear option-like exposures ... "

Stocks and Options

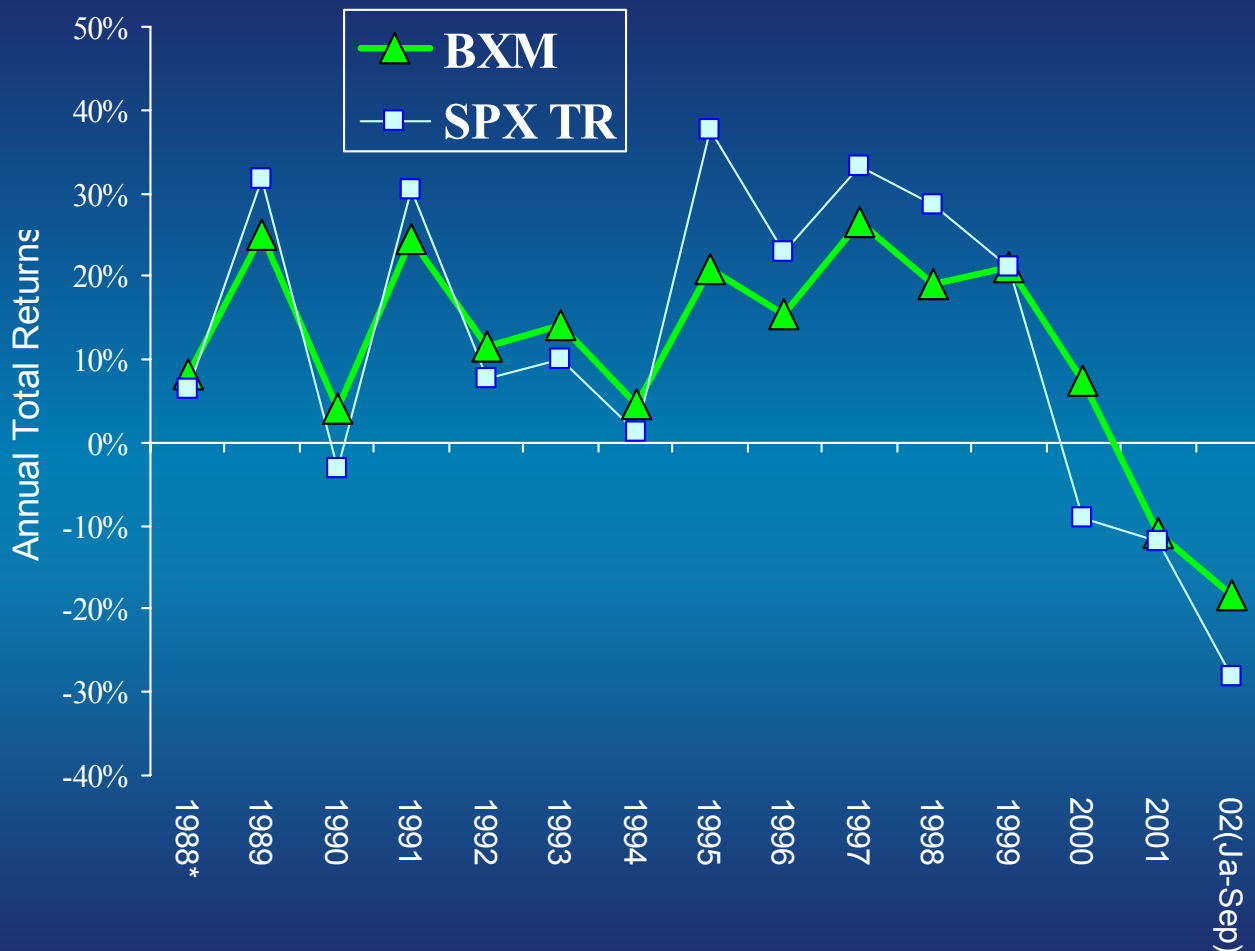
Month-end Prices in S&P 500 Total Return (SPTR) and CBOE BuyWrite MonthlySM (BXM) Index from June 1988 – Sept. 2002*



* June 1988 is the first month for daily prices for the SPTR and BXM indexes. The BXM Index is designed to represent a hypothetical buy-write strategy. Like many passive indexes, the BXM Index does not take into account significant factors such as transaction costs and taxes and, because of factors such as these, many or most investors should be expected to underperform passive indexes. See Risk Disclosures for more information.

Stocks and CBOE BuyWrite Monthly Index –

Annual Returns for Total Return Indexes (which include reinvested dividends)

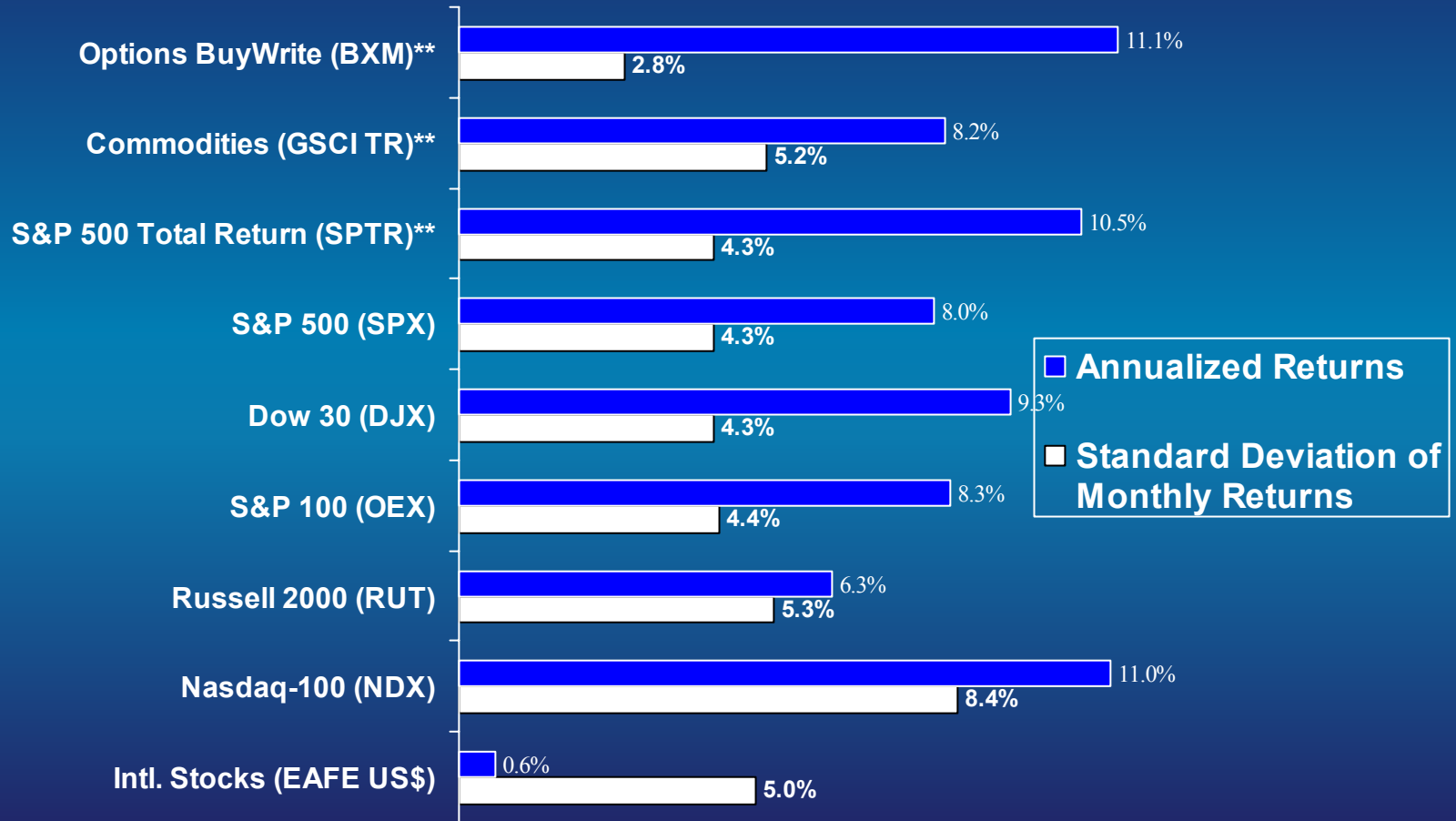


	BXM	SPTR
1988*	8.1%	6.3%
1989	25.0%	31.7%
1990	4.0%	-3.1%
1991	24.4%	30.5%
1992	11.5%	7.6%
1993	14.1%	10.1%
1994	4.5%	1.3%
1995	21.0%	37.6%
1996	15.5%	23.0%
1997	26.6%	33.4%
1998	18.9%	28.6%
1999	21.2%	21.1%
2000	7.4%	-9.1%
2001	-10.9%	-11.9%
Ja-Sp02	-18.40%	-26.20%

* 1988 returns are for June – Dec only. The BXM Index is designed to represent a hypothetical buy-write strategy. Like many passive indexes, the BXM Index does not take into account significant factors such as transaction costs and taxes and, because of factors such as these, many or most investors should be expected to underperform passive indexes. Please see Risk Disclosures at www.cboe.com/bxm

Returns and Standard Deviations

for Select Indexes (Month-ends June 1988* - Sept. 2002)



[This slide was added after the presentation was given:]

Papers on Directionality and Skewness

- ◆ “The Statistical Properties of Hedge Fund Index Returns and Their Implications for Investors” Brooks, Chris ; Kat, Harry M. THE JOURNAL OF ALTERNATIVE INVESTMENTS Fall 2002 Volume 5, Number 2, Pages 26 – 44
The monthly return distributions of many hedge fund indices exhibit highly unusual skewness and kurtosis properties as well as first-order serial correlation. This has important consequences for investors. Although many hedge fund indices are highly attractive in mean-variance terms, this is much less the case when skewness, kurtosis and autocorrelation are taken into account. Sharpe ratios will substantially overestimate the true risk/return performance of (portfolios containing) hedge funds. Similarly, mean-variance portfolio analysis will overestimate the benefits of including hedge funds in an investment portfolio and therefore overallocate to hedge funds. We also find substantial differences between indices that aim to cover the same type of strategy. Investors' perceptions of hedge fund performance and value added will therefore strongly depend on the indices used.
- ◆ “Absolute Return Strategies Revisited” Brunel, Jean L.P. THE JOURNAL OF WEALTH MANAGEMENT Spring 2002 Volume 4, Number 4, Pages 63 – 75
Observing that many absolute return fund-of-funds managers focus on the low correlation of their returns to broad equity markets, the author uses the equity market weakness of the last several quarters to evaluate the relationship between non-directional fund-of-funds and equity market returns in a variety of environments. He concludes that there has been a surprisingly high degree of stability in the correlation coefficients of these strategies relative to a variety of equity market indices and that these correlations have tended to be higher than one might have expected. He suggests that the focus on correlation may be misplaced and that it might be redirected to the funds' particularly high Sharpe ratios, which explains the non-directionality of the strategies, and which recent substantial cash flows into the industry might jeopardize.
- ◆ "On the Risk and Return of the CBOE BuyWrite Monthly Index" Whaley, Robert.
<http://faculty.fuqua.duke.edu/~whaley/pubs/BXM.pdf> Whaley states that there is some negative skewness for both the options BuyWrite (BXM) and the S&P 500, but this skewness "does not appear to be severe."

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