

# **The Benefits of Managed Futures: 2006 Update**

**CISDM Research Department**

**Original Update: May, 2002**

**Current Update: May, 2006**

## **Abstract**

Various managed futures return (e.g., CTAs) opportunities stem from the expanded universe of securities available to trade and the strategies that can be employed. Funds can access both financial and non-financial (commodity) markets and can easily take long or short futures and option positions in any of these markets. Expanding the set of investment opportunities results in providing diversification benefits to a portfolio that cannot be replicated through traditional stock and bond investment strategies.

In this annual update, the return and risk characteristics of various managed futures strategies are reviewed as well as the risk and return impacts of adding CTAs to traditional stock and bond portfolios. In addition, results are presented on the impact of market factors such as changes in credit spreads or market volatility on CTA returns. Results show that traditional market factors may have little correlation with CTA returns, however, passive systematic models of CTA performance can be created. Therefore, one can think of CTA returns as a combination of manager skill and an underlying return to the CTA strategy or investment style itself. Lastly, the stability of the return and risk parameters over time are analyzed as well as the relative performance of investable CTA indices and traditional CTA fund of fund products.

# The Benefits of Managed Futures

## Introduction

The term *managed futures* represents an industry comprised of professional money managers known to manage client assets on a discretionary basis, using global forward, futures and options markets as the primary investment medium. Under the Commodity Exchange Act, all individuals and firms, with certain exceptions, that intend to do business as futures professionals must be registered with the Commodity Futures Trading Commission (CFTC)<sup>1</sup>. Two such categories of futures professionals that must be registered include Commodity Trading Advisors (CTAs)<sup>2</sup> and Commodity Pool Operators (CPOs)<sup>3</sup>.

Basically, managed futures provides direct exposure to international financial and non-financial asset sectors while offering (through their ability to take both long and short investment positions) a means to gain exposure to risk and return patterns not easily accessible with investment in traditional long-only stock and bond portfolios as well as in many alternative investments such as hedge funds, real estate, private equity, or commodities. While it is impossible in a short synopsis to convey all the details of the benefits of managed futures, managed futures investment offer the means to:

1. Reduce the volatility of stock, bond or stock and bond portfolios as well as the volatility of portfolios which are comprised of both traditional stock and bond investments as well as alternative investments such as commodities, real estate, and hedge funds.
2. Provide return in economic environments in which traditional stock and bond investments as well as other alternative investments offer limited return opportunities.

## General Description of Managed Futures

Futures and options have been used for centuries both as a risk management tool and a return enhancement vehicle. Managed futures, as an investment alternative, has been available primarily since the 1970's and has experienced significant growth over the past several decades. As shown in Exhibit 1, the assets under management for managed futures in the CISDM database has grown from approximately \$21 billion in 1994 to about \$135 billion at the end of 2005.

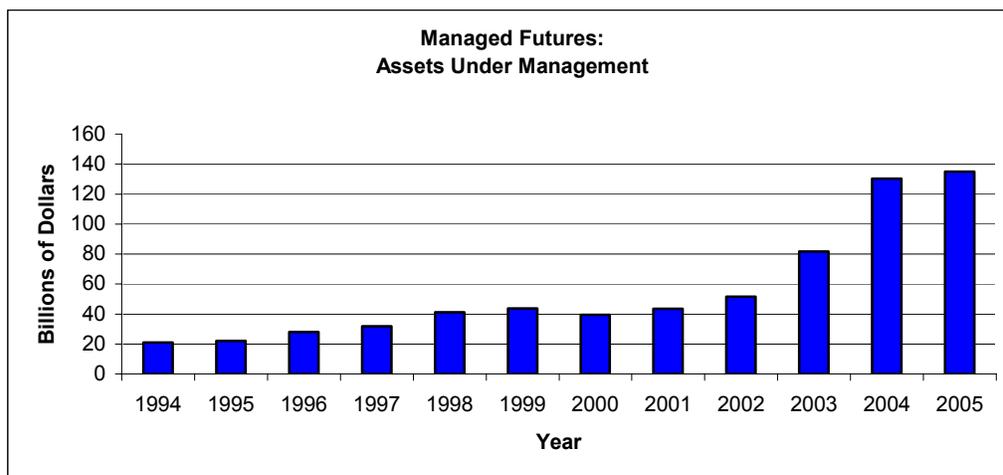
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<sup>1</sup> CFTC has authorized the National Futures Association (NFA), a self-regulatory organization, to receive and review applications and grant registrations.

<sup>2</sup> CFTC defines Commodity Trading Advisor as any person, who, for compensation or profit, directly or indirectly advises others as to the advisability of buying or selling commodity futures or option contracts.

<sup>3</sup> CFTC defines Commodity Pool Operator as any individual or firm that operates a commodity pool. (For example: If a pool is organized as a limited partnership, its general partner typically is its CPO.) A commodity pool is an investment trust, syndicate, or similar form of enterprise operated for the purpose of trading commodity futures or option contracts.

## Exhibit 1



Source: CISDM

This growth in investor demand<sup>4</sup> for managed futures products indicates investor appreciation of the potential benefits of managed futures (e.g., reduced portfolio risk, potential for enhanced portfolio returns, ability to profit in different economic environments, and the ease of global diversification) as well as the special opportunities that futures/options traders have in lower transaction costs, lower market impact costs, use of leverage, and trading in liquid markets.

Managed futures have been described as skill-based investment strategies. Skill-based strategies obtain returns from the unique skill or strategy of the trader. As a result, managed futures have also been described as *absolute return* strategies, as these returns do not depend on the long-term return in underlying traditional stock, bond or currency markets. Because managed futures are actively managed, trader skill is certainly important. More recently, however, it has been shown that managed futures returns have been driven by market factors such as price momentum in various financial and non-financial assets. One may think of their returns as a combination of manager skill and an underlying return to the strategy itself. Industry practitioners and academics have created managed futures indices that can be used as benchmarks for managed futures investors. Investors should note that each managed futures strategy return series has its own approach to performance presentation, manager selection, and investment style classification.

In this article, the following active manager based CTA indices provided by CISDM are used.

### Composite Index

**CISDM CTA Asset and Equal Weighted Indices:** CISDM offers both asset weighted and equal weighted CTA indices. CTA Asset Weighted Index reflects the dollar-weighted return and

<sup>4</sup> The requirements for investing in public futures funds generally differ among various product providers. For example, according to the Morgan Stanley website, a minimum net worth of \$75,000 (excluding homes, furnishings and automobiles) or a minimum annual income of \$30,000 and a net worth of \$30,000 (with the same exclusions) may be considered sufficient to allow investors to take advantage certain managed futures investments. However to invest with a public Citigroup Managed Futures fund, one would require a net worth of at least \$150,000 (exclusive of home, etc.) or a minimum of \$45,000 income/\$45,000 net worth (exclusive of home, etc.). The requirements of private placement funds are generally higher and vary by offering. See [www.morganstanleyindividual.com/investmentproducts/managedfutures/why/](http://www.morganstanleyindividual.com/investmentproducts/managedfutures/why/) and [www.smithbarney.com/pdf/Intro\\_toMF\\_1203.pdf/](http://www.smithbarney.com/pdf/Intro_toMF_1203.pdf/)

the CTA Equal Weighted Index (CISDM CTA EQ) reflects the average return for CTAs reporting to CISDM database<sup>5</sup>.

### **Investment Strategy**

**CISDM CTA Systematic Index:** Trade primarily in the context of a predetermined systematic trading model. Most systematic CTAs follow a trend-following program although some trade countertrend.

**CISDM CTA Discretionary Index:** Trade financial, currency, and commodity futures/options based on a wide variety of trading models including those based on fundamental economic data and/or individual trader's beliefs.

### **Markets Traded**

**CISDM CTA Financial:** Trade financial futures/options as well as currency futures/options and forward contracts.

**CISDM CTA Currency Index:** Trade currency futures/options and forward contracts.

**CISDM CTA Equity Index:** Trade equity futures/options and forward contracts.

**CISDM CTA Physical Index:** Trade commodity futures/options and forward contracts within the energy, agriculture and metal complex.

**CISDM CTA Diversified Index:** Trade financial futures/options, currency futures/options and forward contracts as well as commodity futures/options.

### **Pools (Fund of Funds)**

**CISDM CTA Public Pool Index:** An investment trust, syndicate, or similar form of enterprise operated for the purpose of trading commodity futures or option contracts. AS CPO is defined as an individual or firm that operates one or more commodity pools.

In this study we also review the performance of

### **Active Manager Based CTA Indices**

Similar to other active hedge fund manager based investable hedge fund indices (e.g., Dow Jones Hedge Fund Strategy Benchmarks, S&P Hedge Fund Indices) active manager based CTA indices are available. In this study, the S&P Managed Futures Index<sup>6</sup>, BTOP 50 Index<sup>7</sup> and

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<sup>5</sup> In order to be included in a CISDM CTA index, a CTA must have at least \$500,000 under management and at least a 12-month track record. For more information, please visit [www.cisdms.org](http://www.cisdms.org).

<sup>6</sup> The S&P Managed Futures Index (S&P MFI) is an investable index designed to be representative of investments in managed futures hedge funds/programs. Specifically, the index aims to track systematic managers employing mainly technical trend following and pattern-recognition trading methodologies. The S&P MFI includes the four

CSFB/Tremont Managed Futures Index<sup>8</sup> performance are reviewed. Each index has several distinguishing characteristics. The S&P Managed Futures Index is equally weighted among 14 programs whereas the BTOP 50 Index is equally weighted among the largest trading advisors that represent no less than 50% of investable assets in aggregate of the Barclay CTA Universe. The constituents' weights of the CSFB/Tremont Managed Futures index on the other hand are calculated based on their assets under management for a selected set of managers.

### **Investable Passive CTA Indices**

Similar to other security based investable indices (e.g., ETFs on the S&P 500), CTA passive security based indices exist that are based on a systematic approach to futures/option trading with the goal of replicating the underlying return stream to the particular CTA trading strategy. For instance, the MLM Index™ is based on actual market prices for a basket of actively traded futures contracts consisting of commodities, global bonds and currencies. Two other investable passive CTA indices (AIA Indices<sup>9</sup> and sGFI<sup>10</sup>) are included which provide index based performance returns for CTA but which are currently available only from the platform providers.

### **Sources of Returns to Managed Futures**

The real benefit to managed futures is that they provide sources of returns that are uniquely different from traditional stock or bonds or even hedge funds. For instance, futures contracts and option contracts can provide direct exposure to underlying financial and commodity markets. Therefore, actively traded futures and options may provide similar returns to the underlying assets, but often with greater liquidity and less market impact. Futures and option traders may also easily take short positions or actively allocate assets between long and short positions within the futures/options market trading complex. In addition, options traders may also directly trade market/security characteristics such as price volatility, which underlie the contract. The unique return opportunities to managed futures may also stem from the expanded universe of securities available for trading and from the broader range of trading strategies.

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Managed Futures funds represented in the flagship S&P Hedge Fund Index, as well as ten managed futures programs added to create a broader, more representative single strategy index.

<sup>7</sup> The BTOP50 Index is provided by Barclay Group and seeks to replicate the overall composition of the managed futures industry with regard to trading style and overall market exposure. The BTOP50 employs a top-down approach in selecting its constituents. The largest investable trading advisor programs, as measured by assets under management, are selected for inclusion in the BTOP50. In each calendar year the selected trading advisor programs represent, in aggregate, no less than 50% of the investable assets of the Barclay CTA Universe. To be included in the BTOP50, the following criteria must be met: 1) Program must have at least two years of trading activity; 2) Program's advisor must have at least three years of operating history; 3) The BTOP50's portfolio will be equally weighted among the selected programs at the beginning of each calendar year and will be rebalanced annually.

<sup>8</sup> The CSFB managed futures index represents a portfolio of CTAs which are listed on their website.

<sup>9</sup> For details of the AIA index see [www.cisdms.org](http://www.cisdms.org). The index is basically a multi-period (short, mid and long) trendfollowing program. Other examples of passive CTA indices include those developed by Lequeux and Acar (1998). The AFX index is based on three moving averages of lengths 32, 61 and 117 days and applied to a Bank of International Settlements (BIS) weighted portfolio of currencies.

<sup>10</sup> Its Bloomberg ticker is "SGFI".

It is important to note that many managed futures strategies trade primarily in futures markets, which are a net zero sum game. If CTAs were only trading against other CTAs then one may conclude that managed futures returns were based solely on manager skills. However, academics and practitioners<sup>11</sup> have shown that some spot market players are willing to sell or hedge positions even if they expect spot positions to rise or fall in their favor (e.g., currency and interest rate futures may be traded over time due to government policy to smooth price movements).<sup>12</sup> Managed futures traders offer liquidity to such hedgers and obtain a positive return/risk tradeoff in return. In addition, managed futures offer the market integrity and safety of trading in organized exchanges thus providing further assurances of investor safety.

## **Empirical Results**

### **CTA EQ Index: Standalone Risk and Return Performance**

Exhibit 2 shows the historical performance for CISDM CTA Equal Weighted Index and various CTA subindices for the period 1994-2005. While CTAs have often been regarded as a risky investment, the average annualized standard deviation of 35 individual CTAs<sup>13</sup> that had complete data for the period 1994-2005 is less than that of the firms comprising Dow Jones 30 Industrial Average Index (23.37% vs. 28.50%). Results in Exhibit 2 also show that since 1994, investment in a portfolio of CTAs (e.g., CISDM CTA Equal Weighted Index) provides stand-alone risk and return benefits generally similar to the U.S. stock and bond investments. The individual Sharpe ratios are as follows: CISDM CTA Equal Weighted Index (0.49), S&P 500 (0.45) and Lehman Brothers Government/Credit bond Index (0.55).

Results in Exhibit 3 illustrate the correlation between individual CTA strategies. The relatively low correlation between CTA discretionary and CTA systematic illustrate the benefit of combining those two strategy approaches in a combined CTA portfolio. However, the high correlation between the CTA Systematic index and the CTA EQ index also indicates the dominance of that strategy as the primary strategy in the CTA universe. In addition, the relative dominance of the Systematic CTA in the CTA EQ portfolio is also affected by their relatively greater standard deviation of the CTA Systematic such that the CTA Systematic may dominate the performance of a EQ portfolio unless the strategy investments are volatility weighted.

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<sup>11</sup> See Kritzman [1993] for the discussion on optimal currency hedging policy with biased forward rates and Spurgin (2005) for the arguments on the sources of return to managed futures.

<sup>12</sup> Other examples of individuals willing to pay to reduce risk are those who buy insurances. Insurance firms obtain a positive return to risk investment from individuals wishing to hedge various risks.

<sup>13</sup> To get detailed information about the 35 CTAs used in this study, please contact CISDM.

## Exhibit 2

Performance: CISDM CTA Universe Strategies and Traditional Assets (1994-2005)

Index	Annualized		Sharpe Ratio	Skew	Kurtosis	Maximum Drawdown
	Return	Standard Deviation				
<b>CISDM CTA Equal Weighted Index</b>	8.14%	8.61%	0.49	0.39	0.07	-8.75%
<b>CISDM CTA Discretionary</b>	8.58%	5.35%	0.88	0.71	1.21	-5.60%
<b>CISDM CTA Systematic</b>	6.70%	9.10%	0.31	0.34	0.61	-8.31%
<b>CISDM CTA Currency</b>	4.88%	7.10%	0.14	0.78	3.17	-14.59%
<b>CISDM CTA Diversified</b>	8.08%	10.50%	0.40	0.36	0.21	-11.36%
<b>CISDM CTA Equity</b>	4.25%	9.28%	0.04	-0.54	2.02	-24.91%
<b>CISDM CTA Financial</b>	10.00%	11.17%	0.55	0.51	0.44	-13.83%
<b>S&amp;P 500</b>	10.52%	14.77%	0.45	-0.59	0.61	-44.73%
<b>Lehman Gov/Corp</b>	6.35%	4.50%	0.55	-0.46	0.98	-5.76%

## Exhibit 3

	CTA EQ	CTA Disc.	CTA Sys.	CTA Curr.	CTA Div.	CTA Equity	CTA Fin.
<b>Composite Index</b>							
<b>CISDM CTA EQ</b>	1.00						
<b>Investment Strategy Approach</b>							
<b>CISDM CTA Discretionary</b>	0.55	1.00					
<b>CISDM CTA Systematic</b>	0.91	0.52	1.00				
<b>Market Traded Approach</b>							
<b>CISDM CTA Currency</b>	0.47	0.34	0.55	1.00			
<b>CISDM CTA Diversified</b>	0.92	0.62	0.92	0.40	1.00		
<b>CISDM CTA Equity</b>	0.16	0.06	0.13	-0.04	0.17	1.00	
<b>CISDM CTA Financial</b>	0.86	0.40	0.84	0.50	0.78	0.11	1.00

In addition to the low correlation between certain market based CTA strategies (e.g. currency and equity markets) CTA strategies in general have a low correlation with traditional equity and bond market (Exhibit 4) and thus provide potential diversification benefits to a stock and/or bond portfolio. Practitioners have often suggested that this low correlation is because the skill-based investment strategies employed by the managers do not explicitly attempt to track a particular index. Their goal is to maximize long-term returns independently of a prescribed traditional stock and bond index and they emphasize absolute returns and not returns relative to a predetermined index. It is important to realize, however, that while managed futures do not emphasize benchmark tracking, this does not mean that their entire return is based solely on manager skill or is independent of the movement of underlying stock, bond, or currency markets.

## Exhibit 4

Performance: CISDM CTA Universe Strategies and Traditional Assets (1994-2005)			
Index	Correlation		
	S&P 500	Lehman Gov/Corp	Lehman High Yield
CISDM CTA Equal Weighted Index	-0.12	0.34	-0.10
CISDM CTA Discretionary	0.12	0.25	0.15
CISDM CTA Systematic	-0.07	0.32	-0.03
CISDM CTA Currency	0.14	0.10	0.18
CISDM CTA Diversified	-0.11	0.32	-0.07
CISDM CTA Equity	-0.09	-0.03	-0.10
CISDM CTA Financial	-0.12	0.34	-0.11
<b>S&amp;P 500</b>	1.00	0.01	0.51
<b>Lehman Gov/Corp</b>	0.01	1.00	0.23

## CTA EQ Index: Portfolio Performance

Since managed futures are shown to have a low correlation to stocks, bonds or hedge funds they offer low correlation and diversification opportunities to traditional stock, bond or hedge fund portfolios. The potential return and diversification advantages of managed futures when considered as an addition to widely diversified asset portfolios are illustrated in Exhibit 5. The CTA EQ has returns similar to most traditional domestic or international stock and bond portfolios and a reported standard deviation below that of traditional equity portfolios. In addition, as indicated in the previous section and as shown in Exhibit 5, CISDM CTA EQ has a low correlation with both alternative (e.g., hedge funds) and traditional stock and bond investments.

## Exhibit 5

### Performance (1994- 2005)

	CISDM CTA EQ	CISDM HFI	S&P 500	Lehman Gov/Corp	MSCI	Lehman Global
Annualized Return	8.14%	13.36%	10.52%	6.35%	8.40%	6.03%
Annualized Standard deviation	8.61%	7.34%	14.77%	4.50%	13.84%	5.21%
Sharpe Ratio	0.49	1.29	0.45	0.55	0.33	0.41
Maximum Drawdown	-8.75%	-11.61%	-44.73%	-5.76%	-46.31%	-7.43%
Correlation With CISDM CTA EQ	1.00	-0.03	-0.12	0.34	-0.12	0.31

As shown in Exhibit 6, the Sharpe ratio of the portfolios (Portfolio III and VI) which include at least a 10% investment in managed futures dominate those that invest solely in traditional stock and bond investments or in stock, bond and hedge funds (e.g., Portfolio III vs. II and Portfolio VI vs. V). The individual portfolio Sharpe ratios are as follows for domestic portfolios (Portfolio I (0.63), Portfolio II (0.80), Portfolio III (0.87)) and for international portfolios (Portfolio IV

(0.48), Portfolio V (0.67), Portfolio VI (0.74))<sup>14</sup>. The benefits of managed futures in diversified portfolios is further illustrated in Exhibit 7, when the CISDM CTA Equal Weighted Index is added to a S&P 500, Lehman Brothers Bond index, as well as a S&P 500 and Lehman Brothers bond portfolio, the risk adjusted investment opportunities expand.

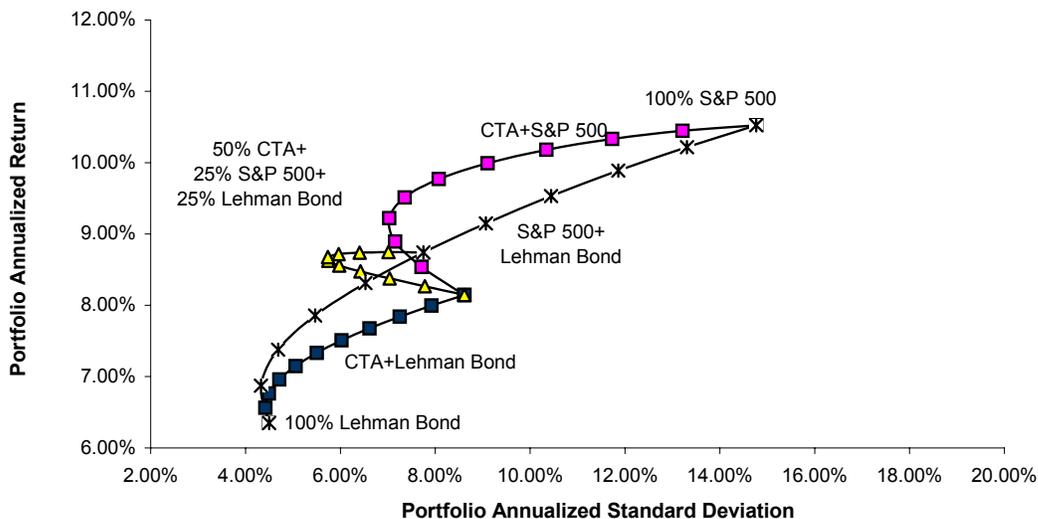
### Exhibit 6

Performance (1994- 2005)	Portfolio I	Portfolio II	Portfolio III	Portfolio IV	Portfolio V	Portfolio VI
	S&P 500 & Lehman Gov/Corp	S&P 500, Lehman Gov/Corp & CISDM HFI	S&P 500, Lehman Gov/Corp, CISDM HFI & CTA EQ	MSCI & Lehman Global	MSCI, Lehman Global & CISDM HFI	MSCI, Lehman Global, CISDM HFI & CTA EQ
<b>Annualized Return</b>	8.74%	9.68%	9.59%	7.49%	8.67%	8.68%
<b>Annualized Standard deviation</b>	7.75%	7.27%	6.58%	7.58%	7.12%	6.46%
<b>Sharpe Ratio</b>	0.63	0.80	0.87	0.48	0.67	0.74
<b>Maximum Drawdown</b>	-16.07%	-13.25%	-9.37%	-19.69%	-15.83%	-11.78%

Portfolio I = 50% S&P 500 and 50% Lehman BrothersGov/Corp Bond  
 Portfolio II = 40% S&P 500, 40% Lehman Brothers Gov/Corp Bond and 20% CISDM Hedge Fund Index  
 Portfolio III = 90% Portfolio II and 10% CISDM CTA Equal Weighted Index  
 Portfolio IV = 50% MSCI and 50% Lehman Brothers Global Bond  
 Portfolio V = 40% MSCI, 40% Lehman Brothers Global Bond and 20% CISDM Hedge Fund Index  
 Portfolio VI = 90% Portfolio V and 10% CISDM CTA Equal Weighted Index

### Exhibit 7

**Risk and Return of Stock, Bond and CISDM CTA Equal Weighed Index: 1994-2005**



<sup>14</sup> In this article, we use CISDM Equal Weighted Hedge Fund index (CISDM HFI) to represent the performance for hedge funds. CISDM Equal Weighted Hedge Fund index reflects the average performance of the hedge fund managers reporting to the CISDM Hedge Fund database. It is calculated as the rate of return to an equally weighted portfolio of hedge fund managers who trade a wide variety of hedge fund strategies that are based on a wide variety of trading models. This index goes back historically to January 1980.

## Performance Comparison

While CTAs have been shown to provide return and risk benefits over the 1994-2005 period, as with any alternative or traditional asset their performance has varied over the period. The primary question is the degree to which CTAs have offered reasonable risk and return over typical investment periods. In Exhibit 8 the differential performance (e.g. performance attribute in the 2000-2005 minus the performance attribute in 1994-1999) characteristics of CTAs for the six year periods 2000-2005 and 1994-1999 are compared. As shown in Exhibit 8, the annualized rate of return was greater in the first subperiod (1994-1999) than in the later (2000-2005). This lower return in the most recent period has led some investors to question the potential returns to CTAs. However, as also shown in Exhibit 8, the CTA risk (standard deviation) was less in the second period such that the relative Sharpe Ratios between the two periods remained relatively constant.

### Exhibit 8

Differential Performance Statistics: (2000-2005) - (1994-1999)

Index	Annualized Return	Annualized Standard Deviation	Sharpe Ratio	Skew	Kurtosis	Maximum Drawdown
CISDM CTA Equal Weighted Index	-1.07%	0.42%	-0.15	-0.07	-0.14	-3.12%
CISDM CTA Discretionary	-1.07%	-0.66%	-0.09	0.62	3.34	1.08%
CISDM CTA Systematic	-0.67%	-2.60%	0.02	0.13	0.30	1.16%
CISDM CTA Currency	-0.24%	-1.75%	0.00	-1.21	-4.24	6.04%
CISDM CTA Diversified	-3.12%	-2.28%	-0.21	-0.30	-0.58	-2.89%
CISDM CTA Equity	5.52%	-2.86%	0.63	-0.40	6.14	14.35%
CISDM CTA Financial	0.69%	-0.88%	0.10	-0.59	-0.65	-2.17%
<b>S&amp;P 500</b>	-24.69%	1.60%	-1.77	1.00	-2.74	-29.36%
<b>Lehman Gov/Corp</b>	1.37%	0.20%	0.28	-0.91	1.24	1.18%

### Recent Performance (2001-2005)

As shown in Exhibit 8, the CISDM CTA Equal Weighted Index as well as the S&P 500 have underperformed in the past six year period in contrast to the earlier part of the past decade. However, as shown in Exhibit 9, managed futures have continued to provide benefits on a stand-alone basis relative to the S&P 500 as well as additions to traditional stock and/or bond portfolios. Exhibit 9 shows that over the past 5 years (2001-2005), individual CTA strategies have offered higher returns but less volatility than that of the S&P 500. Exhibit 10 also shows that CTAs remain an important part of a diversified stock and bond portfolio. The Sharpe ratio of an equally weighted stock and bond portfolio is 0.22 and the Sharpe ratio of an equally weighted stock and bond portfolio with 20% hedge fund component is 0.41, whereas adding 10% CTA allocation to the stock, bond, and hedge fund portfolio results in a portfolio with a Sharpe ratio of 0.50.

**Exhibit 9**

**Recent Performance (2001-2005)**

Recent Performance: CISDM CTA EW Strategies and Traditional Assets (2001-2005)						
Index	Annualized Return	Annualized Standard	Skew	Kurtosis	Sharpe Ratio	Maximum Drawdown
CISDM CTA EQ	7.05%	8.71%	0.13	-0.33	0.57	-8.75%
CISDM CTA Discretionary	9.38%	4.07%	0.27	-0.35	1.79	-2.39%
CISDM CTA Systematic	6.86%	9.24%	0.10	-0.38	0.51	-9.92%
CISDM CTA Currency	6.40%	6.34%	0.88	0.62	0.68	-7.37%
CISDM CTA Diversified	7.98%	10.96%	-0.03	-0.39	0.53	-11.36%
CISDM CTA Equity	6.61%	9.00%	0.06	-0.28	0.50	-8.69%
CISDM CTA Financial	4.23%	3.48%	-0.09	1.71	0.61	-2.84%
CISDM CTA Physicals	9.52%	7.57%	0.04	0.55	0.98	-5.99%
S&P 500	0.54%	14.94%	-0.37	0.15	-0.11	-38.87%
Lehman Gov/Corp	6.10%	4.86%	-0.81	1.38	0.82	-4.58%
Lehman High Yield	8.86%	8.82%	-0.60	2.48	0.77	-12.01%

**Exhibit 10**

**Performance January, 2001-December, 2005**

	CISDM CTA			Lehman		
	EQ	CISDM HFI	S&P 500	Gov/Corp	MSCI	Lehman Global
Annualized Return	7.05%	9.11%	0.54%	6.10%	2.64%	6.81%
Annualized Standard deviation	8.71%	5.10%	14.94%	4.86%	14.68%	5.90%
Sharpe Ratio	0.57	1.37	-0.11	0.82	0.04	0.79
Maximum Drawdown	-8.75%	-5.29%	-38.87%	-4.58%	-38.85%	-5.42%
Correlation With CISDM CTA EQ	1.00	-0.02	-0.27	0.39	-0.21	0.43

	Portfolio I	Portfolio II	Portfolio III	Portfolio IV	Portfolio V	Portfolio VI
	S&P 500 & Lehman Gov/Corp	S&P 500, Lehman Gov/Corp & CISDM HFI	S&P 500, Lehman Gov/Corp, CISDM HFI & CISDM CTA EQ	MSCI & Lehman Global	MSCI, Lehman Global & CISDM HFI	MSCI, Lehman Global, CISDM HFI & CTA EQ
Annualized Return	3.67%	4.75%	5.04%	5.04%	5.86%	6.04%
Annualized Standard deviation	7.06%	6.50%	5.79%	7.77%	7.06%	6.38%
Sharpe Ratio	0.22	0.41	0.50	0.38	0.53	0.61
Maximum Drawdown	-14.63%	-11.99%	-9.13%	-15.93%	-13.06%	-10.13%

Portfolio I = 50% S&P 500 and 50% Lehman Brothers Gov/Corp Bond  
 Portfolio II = 40% S&P 500, 40% Lehman Brothers Gov/Corp Bond and 20% CISDM Hedge Fund Index  
 Portfolio III = 90% Portfolio II and 10% CISDM CTA Equal Weighted Index  
 Portfolio IV = 50% MSCI and 50% Lehman Brothers Global Bond  
 Portfolio V = 40% MSCI, 40% Lehman Brothers Global Bond and 20% CISDM Hedge Fund Index  
 Portfolio VI = 90% Portfolio V and 10% CISDM CTA Equal Weighted Index

## CTA Pool (e.g., Fund of Fund) Investments

It is important to realize that the above results reflect the performance of the CISDM CTA indices. These indices reflect the performance of a portfolio of noninvestable CTAs. In short the indices reflect the performance of a non investable Fund of CTAs. The actual performance of a pool of CTAs may differ somewhat from that shown in the previous tables. First of all, CTA pools often add on an additional layer of fees to reflect their additional asset management and oversight role. In addition, CTA pools often engage in more active management of funds within their strategy. In Exhibit 11, the performance of the CISDM CTA Pool index is reported in comparison to the CISDM equal weighted hedge fund index. For the period examined the correlation between the two indices is identical, however, the return and the standard deviation of the CISDM Pool Index is below that of the CISDM Equal Weighted CTA index. This is consistent with 1) the greater number of non investable funds existing in the overall index, and 2) the additional layer of fee existing on most fund of fund products.

### Exhibit 11

2001 - 2005	ARR	StDev	Sharpe Ratio	MaxDD	Skewness	Kurtosis	Correl (CISDM)
CISDM CPO Equal WeightedPublic Pools	5.99%	9.99%	0.38	-12.98%	0.06	-0.29	0.97
CISDM CTA Asset Weighted	7.65%	8.22%	0.67	-8.25%	-0.10	-0.35	1.00
CISDM CTA Equal Weighted	7.05%	8.71%	0.56	-8.75%	0.13	-0.33	0.95
Portfolio I	3.67%	7.06%	0.22	-14.62%	-0.26	-0.14	-0.07
Portfolio II	4.27%	5.75%	0.37	-8.50%	-0.03	-0.20	
S&P 500 Total Return	0.54%	14.94%	-0.11	-38.87%	-0.36	0.15	-0.19
Lehman U.S. Government/Credit	6.11%	4.86%	0.81	-4.58%	-0.81	1.38	0.39
Lehman U.S. Aggregate	5.87%	4.00%	0.93	-3.55%	-0.92	1.41	0.37

Portfolio I: S&P 500/Lehman Gov.Corp. Bond Equal Weight

Portfolio I: 80% Portfolio 1 and 20% CTA CPO EW

## Investable CTA Indices

The growth in CTA investment has encouraged a number of firms to offer active manager based CTA index products. This group includes well-known index providers such as S&P and global investment banks such as CSFB. Each of these CTA indexes differs in unique ways. As a result, seemingly similar active manager based CTA indexes may have different return and risk performance over similar times. However, previous studies [Schneeweis, 2006] results also show that despite differences in risk and return, the various CTA indexes generally report similar correlations to each other as well as to major market factors such as stock and bond indexes.

In addition, various futures based passive CTA indices have been suggested as possible surrogates for active CTA investment. In Exhibit 12a and 12b, the relationships between active manager based investable (S&P MFI) and passive futures based CTA indices and their respective correlations with market factors are given. Results show that the investable manager based and passive futures based indices have similar correlations to the non investable CISDM EQ index and the investable stock and bond indices.

## Exhibit 12a: Investable CTA Index Risk and Return Characteristics

2001 - 2005	ARR	StDev	Sharpe				Correl (CISDM)
			Ratio	MaxDD	Skewness	Kurtosis	
CSFB/Tremont	7.45%	13.81%	0.38	-16.53%	-0.22	-0.30	0.94
BTOP50	7.09%	10.31%	0.48	-10.92%	-0.11	-0.08	0.97
S&P MFI	6.19%	16.28%	0.25	-16.87%	-0.13	-0.52	0.94

2001 - 2005	ARR	StDev	Sharpe	MaxDD	Skewness	Kurtosis	Correl (CISDM)
SGFI	4.87%	5.11%	0.53	-7.55%	-0.31	0.26	0.73
BMLM	2.62%	6.76%	0.07	-8.94%	0.27	1.86	0.52
AIA	2.53%	7.49%	0.05	-16.01%	0.21	0.31	0.62

## Exhibit 12b: Investable CTA Market Factor Correlations

2001-2005	Correlation		
	S&P 500	Lehman U.S. Aggregate	Lehman U.S. Corporate High Yield
CSFB/Tremont	-0.31	0.35	-0.20
BTOP50	-0.29	0.38	-0.18
S&P MFI	-0.35	0.40	-0.22
SGFI	-0.18	0.42	-0.06
BMLM	-0.21	0.27	-0.05
AIA	-0.32	0.32	-0.22

## Market Factors

CTAs have been suggested as providing diversification benefits to traditional assets due to their low correlation with traditional assets. One reason for this low correlation is that CTAs have often been described as being long volatility; that is, they provide the ability to make money in markets in which there are extreme market movements. In the following Exhibits 13A, 13B and 14 we provide evidence on the correlation between CTAs and the volatility of their underlying markets and the correlation between CTAs and passive indices which attempt to track the momentum pattern of CTAs. Results show that simple momentum models provide a better explanation of CTA returns than market factor volatility. In short, the highest correlations are reported between the active manager based CISDM strategy based indices and their corresponding passive security based index (e.g., CISDM currency/AIA currency (.66); CISDM Financial/AIA Financial (.53); in contrast to their correlations with changes in volatility (e.g. changes in VIX) which are all below .20.

## Exhibit 13A

Factor Correlations

Index	S&P 500	Lehman Gov/Corp	Lehman High Yield	Change in VIX
<b>CTA Composite</b>				
<b>CISDM CTA EQ</b>	-0.12	0.34	-0.10	0.18
<b>CTA Subindices-Strategy Based</b>				
<b>CISDM Discretionary</b>	0.12	0.25	0.15	-0.06
<b>CISDM Systematic</b>	-0.07	0.32	-0.03	0.11
<b>CTA Subindices-Market Traded</b>				
<b>CISDM CTA Currency</b>	0.14	0.10	0.18	-0.08
<b>CISDM CTA Diversified</b>	-0.11	0.32	-0.07	0.16
<b>CISDM CTA Equity</b>	-0.09	-0.03	-0.10	-0.01
<b>CISDM CTA Financial</b>	-0.12	0.34	-0.11	0.19
<b>Traditional Assets</b>				
<b>S&amp;P 500</b>	1.00	0.01	0.51	-0.68
<b>Leh. Bros. Bond</b>	0.01	1.00	0.23	0.10
<b>Russell 3000</b>	0.99	0.00	0.54	-0.69

## Exhibit 13B

Correlation

	Change In S&P 500 VOL	Change In Lehman Gov/Corp VOL	Change In Lehman High Yield VOL
<b>1994-2005</b>			
<b>CISDM CTA EQ</b>	-0.02	-0.01	-0.08
<b>CISDM CTA Discretionary</b>	-0.19	-0.22	-0.11
<b>CISDM CTA Systematic</b>	-0.07	-0.06	-0.06
<b>CISDM CTA Currency</b>	-0.11	-0.09	-0.13
<b>CISDM CTA Diversified</b>	-0.06	-0.06	-0.09
<b>CISDM CTA Equity</b>	-0.19	-0.20	-0.19
<b>CISDM CTA Financial</b>	0.02	0.02	-0.05
<b>S&amp;P 500</b>	-0.33	-0.36	0.00
<b>Lehman Gov/Corp</b>	0.03	0.01	-0.14
<b>Lehman High Yield</b>	-0.38	-0.44	-0.03

## Exhibit 14

Factor Correlations

Index	AIA Passive CTA Indices			
	Interest Rate	Currency	Stock	Physicals
<b>CTA Composite</b>				
<b>CISDM CTA EQ</b>	0.50	0.65	0.33	0.30
<b>CTA Subindices-Strategy Based</b>				
<b>CISDM Discretionary</b>	0.21	0.32	0.28	0.24
<b>CISDM Systematic</b>	0.46	0.57	0.25	0.26
<b>CTA Subindices-Market Traded</b>				
<b>CISDM CTA Currency</b>	-0.11	0.66	-0.13	0.02
<b>CISDM CTA Diversified</b>	0.47	0.52	0.36	0.36
<b>CISDM CTA Equity</b>	0.13	-0.03	0.24	0.22
<b>CISDM CTA Financial</b>	0.56	0.53	0.27	0.12

### Selected Recent Research: Comments

One cannot in this brief presentation, discuss the entirety of research being conducted in the area of Managed Futures. For a complete review of current research, please check ‘The Myths of Managed Futures’ at [www.cisdms.org](http://www.cisdms.org). The following provides a brief sample of issues surrounding current research in managed futures.

**Distributional Characteristics:** Mean and variance have been shown to not fully describe the historical distributions of both traditional and alternative investments. A study conducted by Lamm [2005] concluded that CTAs possess overlooked performance characteristics (positive skew and excess kurtosis) which are of significant value to investors and concludes that this positive asymmetry in CTA returns can serve as an offset to the negative asymmetry of other assets in portfolio construction. However, as shown in Exhibit 8, there is little indication that CTAs have experienced high positive skew or kurtosis over the past five years. In contrast, understanding the stability of conditional return movement (e.g., relative return movement in extreme market conditions) may provide a better understanding of the risk diversification benefits of CTAs than traditional stand alone risk measures such as skewness or kurtosis.

**Sources of Returns:** Recent research [Kidd and Brorsen, 2004] has suggested that decrease in price volatility and increase in kurtosis of price changes may have reduced technical trading profitability, resulting in the declined returns to CTAs over the recent years. While for certain traditional assets such as equity there has been a decrease in volatility in recent years, for other traditional assets such as bond, the volatility has in fact increased. Moreover as shown in Exhibit 13B, there is little evidence that change in equity or bond volatility is a source of CTA return, such that while for many CTA strategies price changes are necessary for expected returns, that movement is not necessarily captured by measuring a financial asset volatility. In contrast, Spurgin [2005] proposes a more fundamental view that certain markets such as equity index

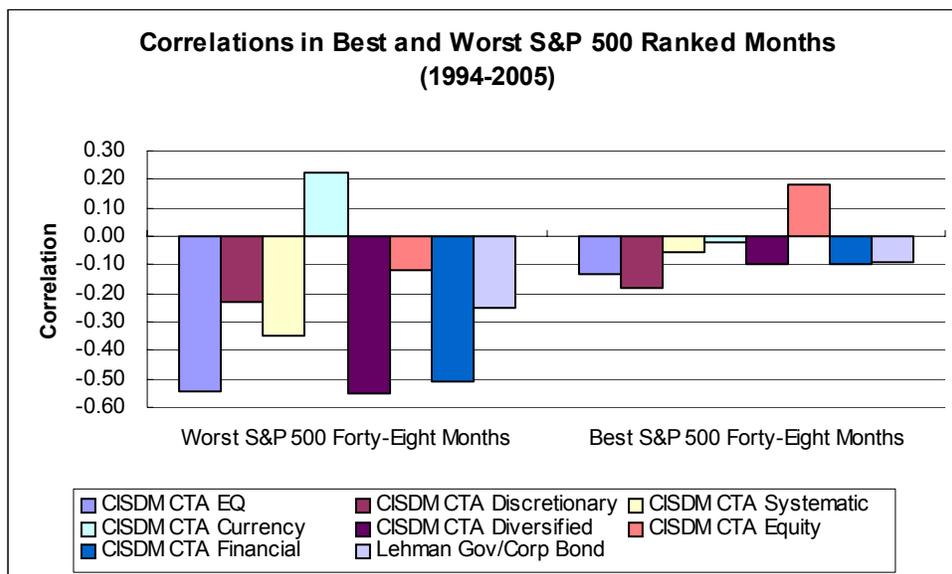
futures seem unlikely to offer positive risk-adjusted returns to trend-followers because of the absence of a group of participants who would be willing to pay speculators to hold excess risk on a temporary basis. Other markets such as gold seem unlikely to offer positive returns because of the absence of an economic necessity for both producers and consumers to hedge. He also concludes that markets such as currencies, interest rates and production factors such as crude oil are however likely candidates for excess returns to speculators. As shown in Exhibit 14, passively created indices have been shown to reflect the performance of active systematic CTAs. Future analysis of the conditions in which these indices provide profitable periods will enable better conditional models of expected CTA returns.

## **Conclusions**

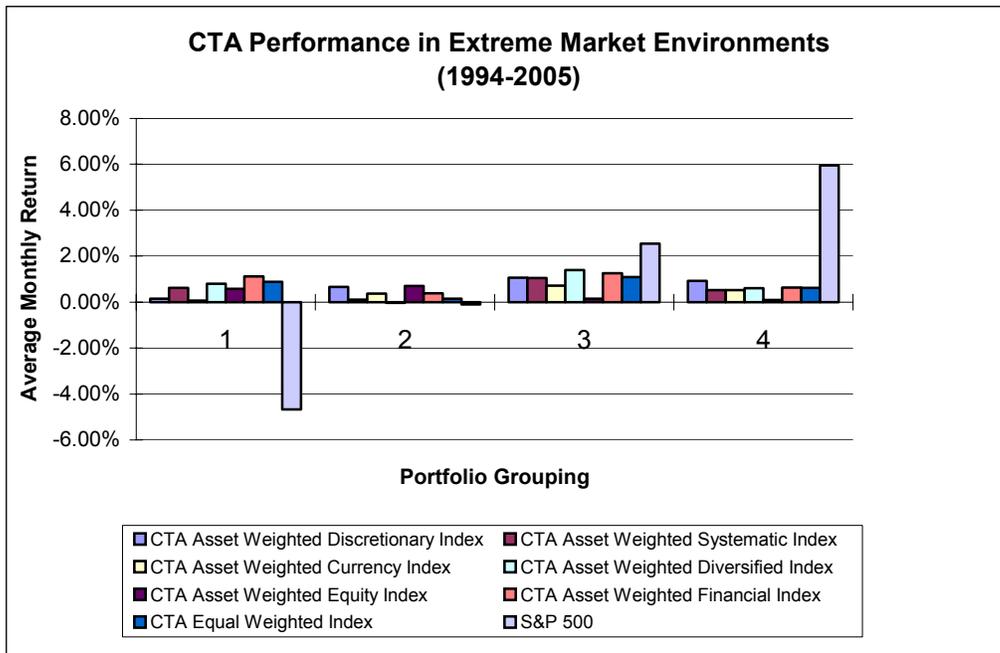
As indicated in this study, managed futures offer risk and return opportunities not easily accessible with investment in traditional as well as other alternative asset classes. The results of this study provide important information to the investment community about the benefits of managed futures. Most traditional money managers (and many hedge fund managers) are restricted by regulation or convention to holding primarily long investment positions and from using actively traded futures and option contracts (which offer lower transaction costs and lower market impact costs than direct stock or bond investment). Thus, in contrast to most stock and bond investment vehicles as well as many hedge fund strategies, managed futures offer unique return opportunities which exist through trading a wide variety of global stock and bond futures and options market and through holding either long or short investment positions in different economic environments. Simply put, the logical extension of using investment managers with specialized knowledge of traditional markets to obtain maximum return/risk tradeoffs is to add specialized managers who can obtain the unique returns in market conditions and types of securities not generally available to traditional asset managers; that is, managed futures.

## Appendix 1: CTA performance in Extreme markets environments

Research in the alternative investment area has often provided evidence that in extreme market environments, alternative investments such as CTAs have provided the opportunity of positive returns even when traditional stock and bond markets perform poorly. For example, as show in the following exhibit, for the period 1994 to 2005, the CISDM CTA equal weighted index exhibits moderate negative correlation with S&P 500 when the S&P 500 posted its forty-eight worst months and yet much lower negative correlation when the S&P 500 reported its best forty-eight months.



Unfortunately correlations are a poor statistical measure to represent the conditional returns of CTAs in extreme equity or fixed income markets. For example, in the months in which the S&P had its best performance, CTAs had low negative correlation. However, when S&P 500 returns are ranked from low to high and divided into four sub periods, as shown in the following exhibit, managed futures offers the opportunity of obtaining positive returns in months in which the S&P 500 reported positive returns and in months in which S&P 500 posted negative returns. In fact, the CTA return behavior is similar across most market environments. Thus the reported low to negative correlation of CTAs to the S&P 500 in up equity markets simply reflects the relative returns around their means, the low correlation in up S&P 500 markets or the high negative correlation in down S&P 500 markets does not indicate that CTAs will provide positive returns in down markets or negative low returns in up markets. Investors should instead concentrate on the actual returns obtained in the various market environments.



## Appendix II: Selected Academic and Professional Research Centers

The following organizations may be useful to private equity investors, entrepreneurs and researchers.

Managed Funds Association: [www.mfainfo.org](http://www.mfainfo.org)

Alternative Investment Management Association: [www.aima.org](http://www.aima.org)

CISDM: [www.cisdsm.org](http://www.cisdsm.org)

Futures Industry Association: [www.futuresindustry.org](http://www.futuresindustry.org)

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