

EXCHANGE TRADED DERIVATIVES

IN A
PROFESSIONALLY
MANAGED PORTFOLIO



Chicago Mercantile Exchange

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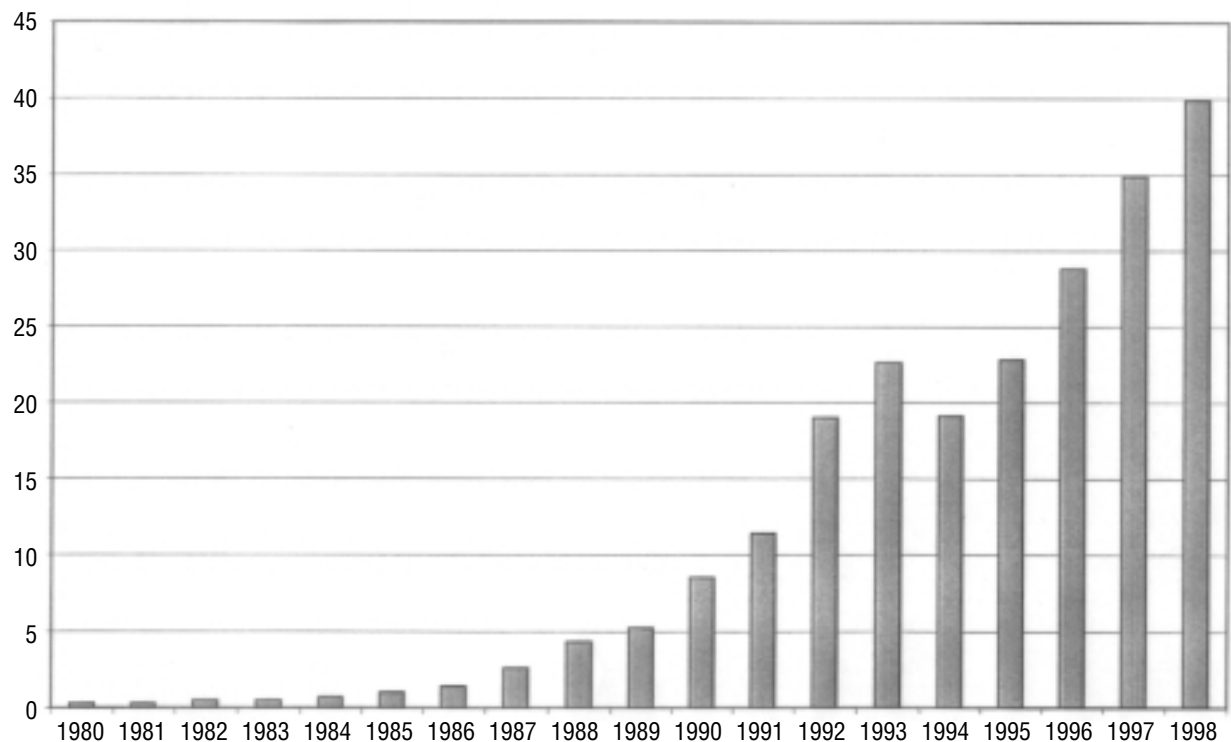
INTRODUCTION

This brochure provides an overview of managed futures, which is taken here to mean professionally managed investment portfolios of exchange-traded derivatives (futures and options on futures contracts). Derivatives are financial products designed to offer a profit/loss payoff that mirrors certain aspects of the returns of the instruments on which they are based, such as securities, commodities and currencies. Derivative products include futures contracts, forward contracts, warrants, swap contracts and related options. The advantage of exchange-traded derivatives is that regulated exchanges provide clearing and regulatory safeguards to investors.

Over the past two decades, the choice of investment opportunities has grown from “traditional” instruments such as stocks, bonds and real estate, to include mutual funds, hedge funds, foreign securities and managed futures. Today’s sophisticated international markets provide new profit opportunities to investors. The ability of managed futures to access these opportunities has led to the rapid growth of these investment vehicles. Figure 1 illustrates the growth of assets invested in managed futures from 1980 through 1998.

Figure 1: Growth of Managed Futures Industry 1980–1998

Assets under management (\$ in billions)



Source: Managed Account Reports

A Look at the Managed Futures Industry: Then and Now

	Feb 1979	Feb 1999
Number of Advisors	17	317
Number of Advisors: Assets over \$100 million	0	44
Most Assets/Advisor	\$6.6m	\$2.2b
Estimated Assets in Managed Futures	\$.3b	\$39.9b

Source: Managed Account Reports

Using managed futures allows investors to benefit from:

- changes in interest rates and equity markets around the world;
- currency exchange rate shifts; and
- changes in global supply and demand for agricultural products, precious and industrial metals, and energy products such as oil and natural gas.

Because of the broad range of products and instruments encompassed by managed futures, their addition to a traditional portfolio can provide global diversification in financial instruments and currencies; help hedge against inflation and deflation; and generate returns that are not correlated with more traditional investments.

The following sections of this publication describe the fundamentals of managed futures and explore the benefits of a managed futures investment. They also offer insight into evaluating managed futures investments and explain how to invest, as well as identifying resources for further information.

FUTURES CONTRACTS

An overview of managed futures begins with a description of futures contracts. A futures contract is a legally binding agreement designed to allow buyers and sellers to lock in a price on a well-specified good (e.g., physical commodity, fixed-income security, equity index, or currency) on a forthcoming settlement date.

Example 1: Currency Futures

A Chicago Mercantile Exchange Swiss franc futures contract is for 125,000 Swiss francs for delivery in March, June, September or December. Say the June contract price is \$0.6532 per Swiss franc. A buyer of the contract at that price is obligated to buy 125,000 Swiss francs for \$81,650 ($125,000 \times \0.6532) in June; a seller of the contract at the same price is obligated to sell 125,000 Swiss francs for \$81,650.

The value of this contract for each party may increase or decrease, depending on market price fluctuations of the underlying asset, but the price to which they are obligated does not change. Therefore, 125,000 Swiss francs may be worth more or less than \$81,650 in June, but the buyer and seller complete the transfer at that amount, as agreed to in the futures contract.

Example 2: Stock Index Futures

Assume an investor expects the stock market to rise in the near future. He or she could purchase one S&P 500® stock index contract at, say 1400. If the market rises to 1410, the investor would offset this position by selling one S&P 500 contract at 1410 for a gain of \$2,500 ($(1410 - 1400) \times \$250 = \$2,500$).

Generally, buyers and sellers tend to offset their respective positions in the futures market before actual delivery takes place—that is, selling a futures contract if they previously had bought one, or buying a futures contract if they previously had sold one. In fact, only a small fraction of all futures contracts are held until expiration and fulfilled by delivery. Both buyers and sellers of futures have the obligation to settle the change in value of their contracts on a daily basis.

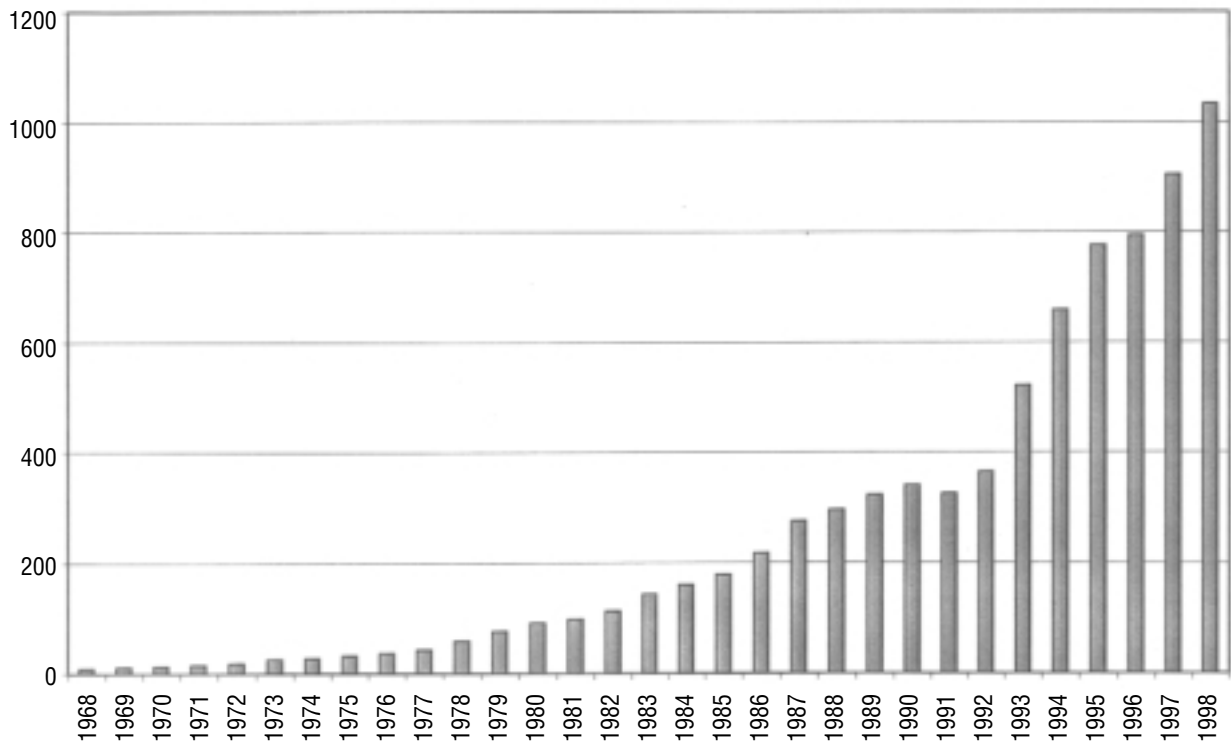
Futures contracts are traded on organized exchanges in the U.S. and in a number of countries around the world. The rules and regulations of U.S. exchanges are intended to support competitive, liquid and efficient markets, as well as safeguard market participants. The Commodity Futures Trading Commission (CFTC), a U.S. federal regulatory agency, helps enforce exchange self-regulation and ensure market integrity of U.S. markets.

Figure 2 shows the annual futures and options trading volume on U.S. exchanges from 1968 through 1998—an increase of 10,500% over the time period. Much of the growth is attributable to the creation of financial futures and options and the increasing worldwide need for risk management products.

Figure 2: Volume of Futures and Options Trading

On U.S. Futures Exchanges 1968–1998

Volume in millions of contracts traded



Source: Futures Industry Association

ENHANCING INVESTMENT PORTFOLIO PERFORMANCE

Adding managed futures to a portfolio of traditional investments can provide many benefits that enhance overall performance. These benefits are discussed below.

Portfolio Diversification

Modern portfolio theory emphasizes the benefits of diversification, and professional investors in increasing numbers are turning to “alternative” investments with low or negative correlation to “traditional” investments. Academic studies (for example, see articles cited in Appendix 3) have shown that managed futures have generated positive returns during periods when returns from traditional investments have been flat or negative. This “non-correlation” of returns can help in reducing the overall volatility of a portfolio (see Figure 3).

Global Investment Opportunities

Because of the broad scope of exchange-traded derivatives, the managed portfolio that includes these instruments gains global diversification by allowing investors access

to overseas stock and bond markets, as well as foreign currencies. Futures markets offer a number of trading vehicles that mirror international markets; some of these are listed in Figure 4.

High Return Potential

Managed futures can generate very attractive returns. As Figure 5 illustrates, the historic returns on managed futures are comparable to and often exceed the returns on traditional investments. This chart shows that a managed futures account can yield significantly greater gains than traditional investments. While the source of these returns is a matter of continuing study, some futures trading advisors maintain that they can generate superior returns in times when hedgers are changing their positions. Furthermore, such traders contend that they can use the leverage and low transaction costs inherent in futures trading to quickly and efficiently exploit market inefficiencies.

Figure 3: Correlation Matrix

For the period 7/1/89 to 6/30/99

	S&P 500®	Lehman Bonds	Barclay Futures Index	Barclay CTA Index
S&P 500® Total Return	1.00	0.37	-0.20	-0.07
Lehman Gov't Bonds Index	0.37	1.00	-0.05	0.15
Barclay Futures Index	-0.20	-0.05	1.00	0.42
Barclay CTA Index	-0.07	0.15	0.42	1.00

Source: Barclay Trading Group

Figure 4: Global Diversification

Managed futures offer essential portfolio diversification, providing access to an array of markets and contracts.

Interest Rates	Stock Indexes	Metals	Currencies	
Treasury Bonds	Nikkei 225	Gold	Euro FX	
Treasury Notes	S&P 500	Silver	Swiss Franc	
Eurodollars	S&P MidCap 400	Platinum	Japanese Yen	
LIBOR	Russell 2000®	Copper	Canadian Dollar	
	Nasdaq 100®	Aluminum	British Pound	
		Palladium	Australian Dollar	
			Mexican Peso	
Industrials	Grains	Softs	Meats	Other
Crude Oil	Wheat	Cocoa	Cattle	GSCI®
Heating Oil	Corn	Cotton	Feeder Cattle	Foreign Futures
Gasoline	Oats	Coffee	Hogs	
Lumber	Soybeans	Sugar	Pork Bellies	
		Orange Juice		

Figure 5: Year-By-Year Returns: Various Asset Classes

Year	Large Company Stocks	International Stocks EAFE	Long-Term Treasury Bonds	U.S. Treasury Bills	Inflation	GSCI Collateralized Futures	Barclay CTA Index	Barclay Futures Index
1971	14.31	31.21	13.23	4.39	3.36	21.08		
1972	18.98	37.60	5.69	3.84	3.41	42.43		
1973	-14.66	-14.17	-1.11	6.93	8.80	74.96		
1974	-26.47	-22.15	4.35	8.00	12.20	39.51		
1975	37.20	37.10	9.20	5.80	7.01	-17.22		
1976	23.84	3.74	16.75	5.08	4.81	-11.92		
1977	-7.18	19.42	-0.69	5.12	6.77	10.37		
1978	6.56	34.30	-1.18	7.18	9.03	31.61		
1979	18.44	6.18	-1.23	10.38	13.31	33.81		
1980	32.42	24.43	-3.95	11.24	12.40	11.08	63.69	31.18
1981	-4.91	-1.03	1.86	14.71	8.94	-23.01	23.92	31.23
1982	21.41	-0.86	40.36	10.54	3.87	11.56	16.67	12.46
1983	22.51	24.61	0.65	8.80	3.80	16.26	23.75	3.65
1984	6.27	7.86	15.48	9.85	3.95	1.05	8.74	14.18
1985	32.16	56.72	30.97	7.72	3.77	10.01	25.50	21.78
1986	18.47	69.94	24.53	6.16	1.13	2.04	3.83	10.48
1987	5.23	24.93	-2.71	5.47	4.41	23.77	57.28	16.21
1988	16.81	28.59	9.67	6.35	4.42	27.93	21.75	8.04
1989	31.49	10.80	18.11	8.37	4.65	38.28	1.79	8.26
1990	-3.17	-23.19	6.18	7.81	6.11	29.08	21.01	16.88
1991	30.55	12.49	19.30	5.60	3.06	-6.13	3.73	6.11
1992	7.67	-11.85	8.05	3.51	2.90	4.42	-0.91	6.86
1993	9.99	32.94	18.24	2.90	2.75	-12.33	10.37	8.08
1994	1.31	8.06	-7.77	3.90	2.67	5.29	-0.65	4.78
1995	37.43	11.55	31.67	5.60	2.54	20.33	13.65	3.44
1996	23.07	6.36	-0.93	5.20	3.32	33.92	9.13	14.01
1997	33.36	2.06	15.85	5.26	1.70	-14.10	10.90	9.73
1998	28.58	20.33	13.06	4.86	1.61	-35.75	7.00	9.03
Annualized Returns: 1980–1998								
Stocks (S&P 500)				17.7				
Barclay CTA Index				15.8				
International Stocks (MSCI EAFE)				14.2				
Long-Term Bonds (Lehman Gov't. Bond Index)				11.8				
Treasury Bills (3 mo. U.S. T-bills)				7.0				

Ability to Profit from Down and Up Markets

Like “hedge funds,” managed accounts and commodity pools enjoy the ability to take short positions (that is, to sell futures), thereby profiting from subsequent price declines. It is not uncommon for a given Commodity Trading Advisor (CTA) to maintain long positions in some markets and short position in others.

Inflation and Deflation Hedge

Because managed futures can profit from the rising or falling prices of a wide range of commodities, including precious metals and oil that are particularly sensitive to the economic environment, trading programs can be designed to profit from major shifts in the general level of prices. For example, the presence of, say, Goldman Sachs Commodity Index (GSCI) futures in a managed account can provide fully diversified, world production-weighted commodity exposure, all in a single futures instrument.

High Liquidity

Unlike other investments, such as real estate, investments in managed futures often are structured to be highly liquid, allowing investors to easily add or withdraw assets. The intervals at which funds may be withdrawn from managed funds vary from daily for some managed accounts to monthly or quarterly in commodity pools.

Government-Regulated

CTAs, CPOs, FCMs and the futures exchanges where the contracts are traded are government-regulated. Regulatory oversight of futures trading by the exchanges, the Commodity Futures Trading Commission (CFTC) and the National Futures Association (NFA) provides assurance of market integrity.

Clearing Organization-Guaranteed Contract Performance

Managed futures accounts, like all other accounts of customers doing business through a U.S. exchange, must be executed by and carried on the books of a “clearing member” (a brokerage firm or FCM that holds a membership in an exchange’s clearing organization). Once a trade between two clearing members is matched by the exchange, the rights and obligations under the futures or options contract do not run between the original buyer and seller—instead, they are between the buyer and the clearing organization, and between the seller and the clearing organization. An exchange’s clearing organization guarantees performance on every contract to each of its clearing members. Although each exchange’s clearing function operates somewhat differently, at minimum they all ensure that there are sufficient resources to meet obligations by: (1) collecting performance bonds; (2) marking contracts to the market at least once daily; and (3) establishing capital requirements and maintaining minimum financial standards for clearing members. Further information regarding CME financial safeguards is available in the publication entitled *The Financial Safeguard System of the Chicago Mercantile Exchange*.

Assets Earn Interest Income

In most managed futures situations interest income is earned on all or a portion of funds invested.

INVESTING IN MANAGED FUTURES

An investment in managed futures can be made either through a managed account or through a commodity pool. The latter is also known as a commodity fund or futures fund.

What is a Managed Account?

A managed account is an individual brokerage account with a brokerage firm (formally known as a Futures Commission Merchant or FCM) in which discretionary authority to direct trading is delegated to a **Commodity Trading Advisor** (CTA). The investor must enter into an advisory agreement with the selected CTA and must deposit funds into a trading account at a mutually agreed on FCM.

What is a Commodity Pool?

A commodity pool is generally a limited partnership in which the funds invested by the partners are combined for allocation to an investment with one or more CTAs. A **Commodity Pool Operator** (CPO) acts as general partner. Commodity pools may use one or more CTAs. When multiple CTAs are used in a single pool, the diversification effect is similar to investing in a mutual fund; the investor has access to a diverse group of CTAs rather than relying on the performance of a single CTA.

To invest in a commodity pool, limited partnership interests in the pool are purchased from the pool's CPO or selling agent.

Figure 6 illustrates the general structures of a Managed Account and a Futures Fund.

Managed Futures Professionals

The professional money managers who actually make managed futures trading or investing decisions are known as Commodity Trading Advisors (CTAs). CTAs employ a variety of strategies to take advantage of profit opportunities in the futures markets. A given CTA may have as clients one or more individual investors whose

accounts are traded by the CTA, and/or one or more commodity pools.

Commodity Pool Operators (CPOs) organize and operate managed futures funds. Their activities include soliciting and monitoring the CTAs that will manage the fund's money. CTAs and CPOs are required to be registered with, and are regulated by, the NFA and the CFTC. The CPO, as general partner, handles the pool's operation, structure, administration, CTA selection, CTA monitoring and investor reporting. A given CPO may operate one or more commodity pools and hire one or more CTAs.

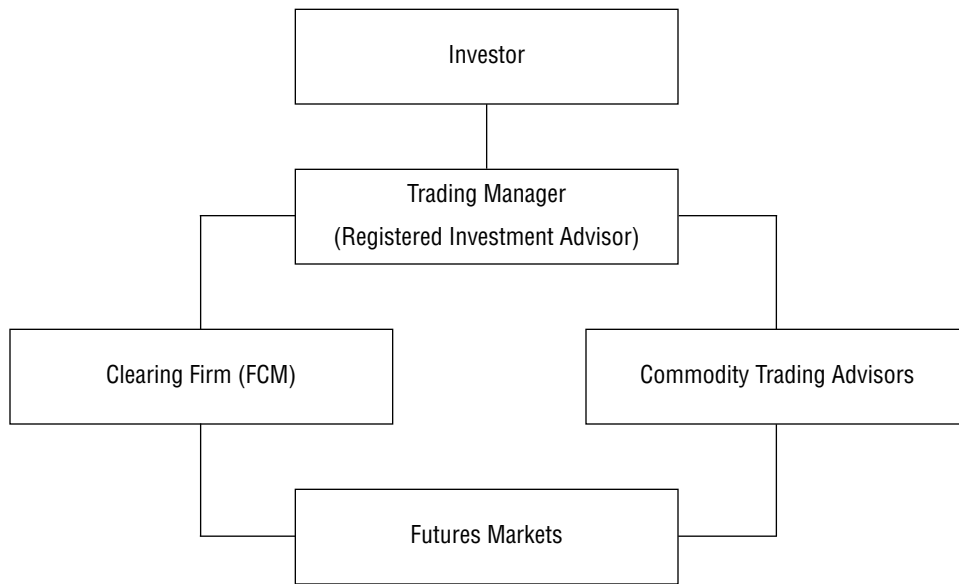
An individual or entity that advises clients (CPOs or individual investors) about CTAs and manages the allocations to CTAs is called a **Manager of Managers** or a **Trading Manager**. The manager maintains detailed performance and background information on many CTAs and usually evaluates them. Using criteria specific to each allocation, a Manager of Managers selects and monitors a group of CTAs for his or her clients.

Minimum Investment

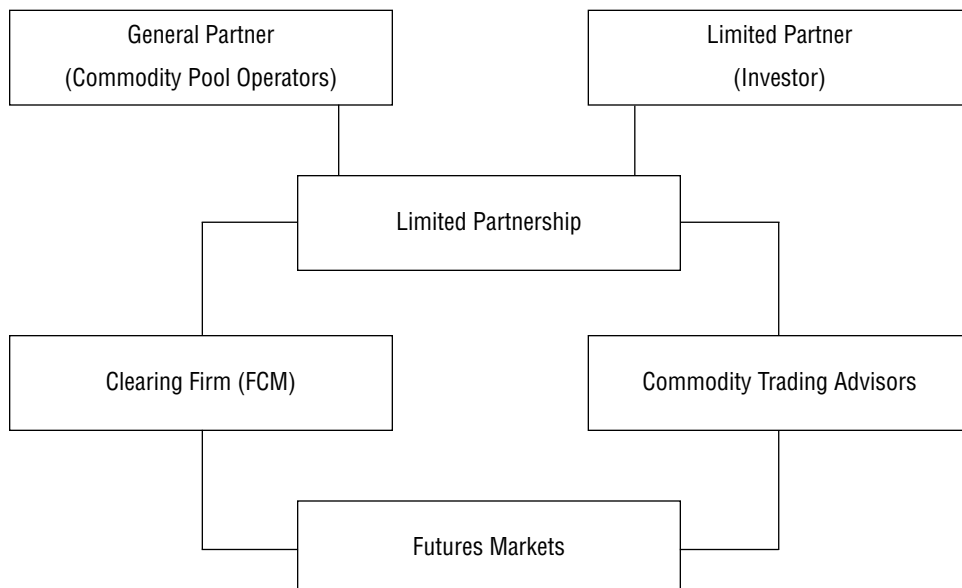
The minimum investment required varies, depending on the type and structure of the investment. For a managed account, it is set at an amount that the CTA considers adequate to implement its programs and to achieve proper account diversification. Depending on the CTA and trading approach, this amount may range from \$25,000 to \$5,000,000. For pooled investments, limited partnership interests may range from \$2,000 to \$5,000,000. Also, minimum investment size varies depending on whether the investment is designed principally to service individual investors or corporate clients.

Figure 6: Structures

General Structure of a Managed Account



General Structure of a Futures Fund



EVALUATING MANAGED FUTURES INVESTMENTS

Disclosure Document

To evaluate a managed futures investment, careful consideration should be given to the information contained in the Disclosure Document. CTAs and commodity pools are required by the CFTC to provide a Disclosure Document to all potential investors. This document includes such information as the background and experience of the CTAs and CPOs and their principals, track records of past performance, a description of the trading strategy and risk control measures, as well as fees and compensation.

Track Records

CTAs and commodity pools must report their actual performance records, also known as track records, for the previous three years. CTAs normally include their entire track records. If a CTA has no past performance, or is using hypothetical performance, this fact also must be disclosed.

Commodity pools also must include the past performance of all other pools that the CPO has operated in the previous three years and the performance of the pool's chosen CTAs.

Although past performance is no guarantee of future performance, track records should be reviewed carefully prior to investment, as they show historic returns and losses, as well as the program's volatility. It also is important to read the accompanying footnotes to fully understand what the numbers in the table include and represent. Investors are often surprised that managed futures as a class can exhibit less volatility with smaller drawdowns than many traditional investment choices.

Risk vs. Return in Managed Futures Trading

The typical investor focuses a great deal of attention on returns and frequently asks, what kind of return can I expect on a given investment. This is unfortunate and leads investors to chase the highest returns. The result is that investors who concentrate on returns will sometimes forget to consider the risks taken to generate those returns.

For example, let's compare two CTAs: CTA #1 and CTA #2. CTA #1 has an annualized compounded return over the last 10 years of 24.0%. CTA #2 has an annualized compounded return of 25.0% over the same time period. CTA #2 clearly has a performance advantage. But, performance figures alone don't tell us how much risk each manager has taken. The investor has to ask: How much additional risk (if any) was taken by CTA #2 in generating the higher returns? Higher returns generally (but not always) require taking greater risks. One percentage point of added return may be worth some additional risk, but most experts agree that that amount of added return is not worth *substantially higher risks*. (It is possible that #2 took equal or even less risk and generated a greater return. It is this kind of "value added" an investor seeks—getting the best returns possible while taking the least amount of risk.)

Tools for Measuring Risk

Three common tools that are used to measure risk and return are:

- 1) Standard Deviation
- 2) Sharpe Ratio
- 3) Drawdown

Standard Deviation

Standard deviation is a statistical measure of the range of a money manager's performance. In many circles, standard deviation is a proxy for risk. If an account has a high standard deviation, its range of performance has been very wide—indicating there is a greater potential for volatility. Standard deviation is usually expressed as a percentage and is usually an annualized number. Annualized standard deviations of 35% would be considered high (although some managers take extraordinary risk and exceed 50%). Some managers have a lower risk style and have standard deviations below 20%.

Sharpe Ratio

In the CTA example above, we mentioned that using return numbers by themselves does not provide enough information about the risks taken to generate a given return. The Sharpe Ratio allows an investor to analyze returns in conjunction with the risks taken to obtain those returns. The Sharpe Ratio is calculated as follows:

$$\frac{\text{Annualized Return} - \text{Risk Free Rate (T-bills)}}{\text{Annualized Standard Deviation}}$$

An example using the two CTAs above will illustrate how the Sharpe Ratio can be a tool in appraising returns and risk.

Manager	10-Year Ann. Return	Risk-free* Interest rate	Standard Deviation	Sharpe Ratio
CTA # 1	24%	5.00%	20%	.95
CTA # 2	25%	5.00%	30%	.67

* 3-mo U.S. Treasury bill rate is generally used as risk-free rate.

Clearly, in this example, CTA #2 has taken significantly more risk as measured by standard deviation. A dramatic increase in risk should also bring greater returns. CTA #2 beat CTA #1 by only one percentage point despite taking much higher risk. An investor has to decide what returns are acceptable for a given amount of risk. To match the Sharpe Ratio of CTA #1, CTA #2 would have to have had returns of 33.5%! At that point, the additional return would justify the risk according to this method of assessing risk versus return.

Drawdown

Standard deviation and Sharpe ratio can be used to evaluate risk and returns for a CTA. In addition, some investors also like to see how a manager fared during a bad trading spell. This is measured by calculating the maximum drawdown. Maximum drawdown simply measures the greatest decline experienced after reaching a given peak, over a period of time usually extending over most or all of a manager's track record. As an example, if an account declined from a peak of \$120,000 down to a low-point of \$80,000 then the peak-to-low drawdown (or maximum drawdown) would be said to be 33%. Drawdown is another way that an investor can compare the volatility of a manager's trading style. Larger drawdowns are usually seen by CTAs with high risk and standard deviations. Careful though! A CTA with extremely low risk could conceivably suffer a massive loss that leads to a substantial drawdown. Along with drawdown, some managers will calculate worst 12-month period (or worst 3- or 6- month period) and the length of time it takes to recover from a drawdown.

Table A: Performance Table

	Beginning Equity (1)	Additions (2)	Withdrawals (3)	Gross Realized Profit (Loss) (4)	Interest Income (5)	Brokerage Commissions and Misc. Expenses (6)	Net Realized Profit (Loss) (7)	Increase (Decrease) in Unrealized Profit (Loss) (8)	Trading Advisor's Fees (9)	Net Performance (10)	Ending Equity (11)	Monthly Rate of Return (12)	Index (13)
Feb.	\$ 0	\$226,424	\$ 0	\$ 3,026	\$ 906	\$ 35	\$ 3,897	\$ (488)	\$ 742	\$ 2,667	\$229,091	1.20%	1,012
Mar.	229,091	212,128	2,118	(1,853)	916	1,750	(2,687)	14,387	2,471	9,230	448,331	2.10%	1,033
Apr.	448,331	22,071	0	2,187	1,793	7,485	(3,505)	21,329	3,468	14,356	484,758	3.10%	1,065
May	484,758	106,409	0	(20,977)	1,939	2,033	(21,071)	(3,883)	(2,102)	(22,852)	568,315	-3.90%	1,023
June	568,315	38,727	3,485	11,759	2,273	555	13,477	(4,680)	451	8,346	611,903	1.40%	1,037
July	611,903	462,349	1,985	(5,084)	2,448	185	(2,821)	113,766	17,945	93,000	1,165,267	8.70%	1,127

How to read a performance table

Table A is an example of a typical 13-column CTA performance table. The left side of the table identifies the year and month of the activity. Following is a brief explanation of each column:

- (1) Beginning Equity—Beginning Equity includes all funds available for trading. Beginning Equity equals the (11) Ending Equity from the previous period.
- (2) Additions—Additions are the amounts credited to the trading accounts during the period, generally new accounts or increased allocations from existing accounts.
- (3) Withdrawals—Withdrawals are the amounts, other than through sources of expense, removed from the accounts during the period.
- (4) Gross Realized Profit (Loss)—Gross realized profits or losses represent the trading gains and losses on closed futures contract positions.
- (5) Interest Income—Interest income represents interest earned on U.S. Treasury bills (or other obligations) deposited as margin or certain cash balances on deposit with FCMs.
- (6) Brokerage Commissions & Misc. Expenses—Brokerage commissions are charged by the FCMs for clearing futures trades. Miscellaneous expenses include exchange fees and National Futures Association per-trade transaction fees; they may include other taxes and charges.
- (7) Net Realized Profit (Loss)—Net realized profit or loss equals (4) Gross Realized Profit (Loss) minus (6) Brokerage Commissions and Miscellaneous Expenses.
- (8) Increase (Decrease) in Unrealized Profit (Loss)—This column represents the increase or decrease from the preceding month in open futures contract positions. Unrealized profits and losses are calculated at the end of each month based on contract sizes and the differences between the futures contract closing price and the price at which the contract was initially purchased or sold.
- (9) Trading Advisor's Fees—These represent compensation earned by the Trading Advisors from the accounts under management. Negative fees occur in those months where subsequent trading losses reduced compensation previously earned, but not yet payable.
- (10) Net Performance—Net Performance equals (7) Net Realized Profit (Loss) plus (8) Increase (Decrease) in Unrealized Profit (Loss), less (9) Trading Advisor's Fees.
- (11) Ending Equity—Ending Equity equals (1) Beginning Equity plus (2) Additions, minus (3) Withdrawals, plus (10) Net Performance.
- (12) Monthly Rate of Return—The rate of return is computed by dividing the (10) Net Performance by (1) Beginning Equity. Monthly Rate of Return may also be determined using a "Time-Weighting" method which is calculated by dividing (10) Net Performance by the weighted average of (1) Beginning Equity plus (2) Additions minus (3) Withdrawals. The weighted average is computed by dividing the sum of each respective daily Beginning Equity plus Additions less Withdrawals balance, before reinvested profits or losses occurring during the month, by the number of days in the month.
- (13) Index—The index represents the value of a hypothetical \$1,000 investment assumed to have been made at the beginning date of the performance record. The index is calculated by adding the prior month's (13) Index to the product of the prior month's (13) Index multiplied by the current month's (12) Monthly Rate of Return. The Index is not intended to reflect the performance of any one individual account and is based on the compounded composite performance of all accounts. The Index assumes a continuous investment with no subsequent additions, withdrawals or distributions of accumulated profits.

Investment Strategy

The investment strategy describes how the CTA will invest or trade, what money management techniques will be used, and what markets will be traded. The trading approach generally can be categorized as systematic or discretionary. *Systematic traders* rely primarily on trading programs or models that generate buy and sell signals. Trades are selected, entered and exited according to such models, not permitting human intervention in the process. *Discretionary traders* rely on their experience and judgment, rather than on any formalized system or model in making their trading decisions.

CTAs also rely broadly on either of two types of analysis as a basis for trading decisions: technical or fundamental. *Fundamental analysis* is the study of external factors that affect the supply and demand of a particular commodity in an attempt to forecast future prices. Such factors might include weather, government policies, domestic and foreign political and economic events changing trade prospects. *Technical analysis* studies market prices themselves. Technical strategies generally involve a detailed look at such data as daily, weekly and monthly price fluctuations, volume variations, changes in open interest and chart patterns.

CTAs may use a combination of systematic and discretionary trading techniques, as well as a combination of fundamental and technical analysis.

Markets Traded

A diversified CTA might trade a number of markets ranging from livestock to foreign currencies and non-U.S. fixed income futures and options on futures. Specialized CTAs might invest in specific market sectors, such as currency instruments or energy products.

Fees and Expenses

CTA Compensation: CTAs typically are paid a fee for managing the fund or managed account (a management fee) and a portion of the trading profits (an incentive fee). The management fee is calculated as a percentage of assets under management and is paid on a monthly or quarterly basis. For example, if the CTA's annual management fee is 2% of the assets managed per annum, paid on a monthly basis, and he has \$1 million under management, at the end of the month he would receive a management fee of \$1,667 ($\$1,000,000 \times .02/12 = \$1,667$).

The incentive fee is paid as a percentage of net new profits, i.e., a portion of gains achieved above the previous high equity level. For example, if the CTA's incentive fee was 20% of net new profits and the CTA earned a 30% return by the end of the fee period, which may be monthly, quarterly or annually, the incentive fee paid would be \$60,000 ($\$1,000,000 \times .30 \times .20$).

In a losing period, the CTA would still receive a management fee, but not an incentive fee. A new incentive fee could only be earned after the loss was recouped and new profits were generated.

CPO Compensation: CPOs also are paid a management fee. In addition, they may earn an incentive fee under some commodity pool structures where the CPO is actively selecting and managing the pool's CTAs.

Brokerage Commissions: The commission rate that the clearing or carrying broker charges is quoted on a "round-turn" basis, which means the amount charged for the purchase and sale, or sale and purchase, of one futures contract. This is unlike securities or securities options brokerages which charge per side—buy and sell.

Often a portion of the brokerage commission is paid to the commodity pool's CPO, CTA or selling agents in lieu of other forms of compensation and for other services related to the investment, such as monitoring, reporting, and facilitating transfers and redemptions.

Sample Performance Reports

On the following pages are sample illustrations from two independent reporting services, the Barclay Trading Group and MAR (Managed Account Reports). Both services provide detailed information regarding managed futures and CTAs including statistics, track records, fees, drawdowns, etc. For more information on these and other services, see Appendix 2.

Sample Capital Management, Inc. (Diversified)

123 East Main St.
Anywhere, USA 12345
Ph. 555-555-5555 fax 888-888-8888
2nd Quarter 1999

Annual Returns

	1995	1996	1997	1998	1999 YTD
Advisor	28.74%	4.16%	27.02%	12.19%	6.12%
Barclay CTA Index	13.65%	9.13%	10.90%	7.00%	1.75%
Funds Managed (\$ millions)	51.2	53.3	67.7	65.0	60.0

Account Information

Management Fee:	2.00%	M/E Ratio:	12.00%
Incentive Fee:	20.00%	Options:	0.00%
Minimum Acct:	\$5000K	Discretion:	0.00%
RT/Yr/\$ Million:	1000	Interbank:	20.00%

Reward/Risk Ratios

	3-Year	Cumulative
Sharpe Ratio:	0.85	0.73
Sterling Ratio:	N/A	0.82
Barclay Ratio:	3.27	0.62
Efficiency Index:	1.16	0.90

Performance Analysis

Start Date:	03/83
Total Return Since Start Date:	7964.33%
Compounded Average Annual ROR:	30.84%
Average Monthly ROR:	2.71%
Standard Deviation of Monthly ROR:	9.90%
Number of Winning Months: 114	Average Gain: 8.19%
Number of Losing Months: 82	Average Loss: -4.89%

Trading Method

Reflects the performance of the DIVERSIFIED TRADING PROGRAM, a systematic computer based strategy using time series analysis. A mathematical algorithm determines the profitability of more than 80 exchange traded markets and selects those markets with greatest propensity to perform consistently. A market by market asset allocation system re-weights exposure based on relative volatility, and systematic rebalancing to a targeted mean variance portfolio rate of return is conducted periodically. Returns are gross of all fees.

Relative Volatility

Loss of 25% or more:	25.96%
Loss of 50% or more:	7.62%
QPA:	2.94

Correlations

Barclay Index:	0.69	S&P 500:	-0.05
U.S. Treasury Bonds:	0.14	EAFE:	-0.07
World Bonds	0.12		

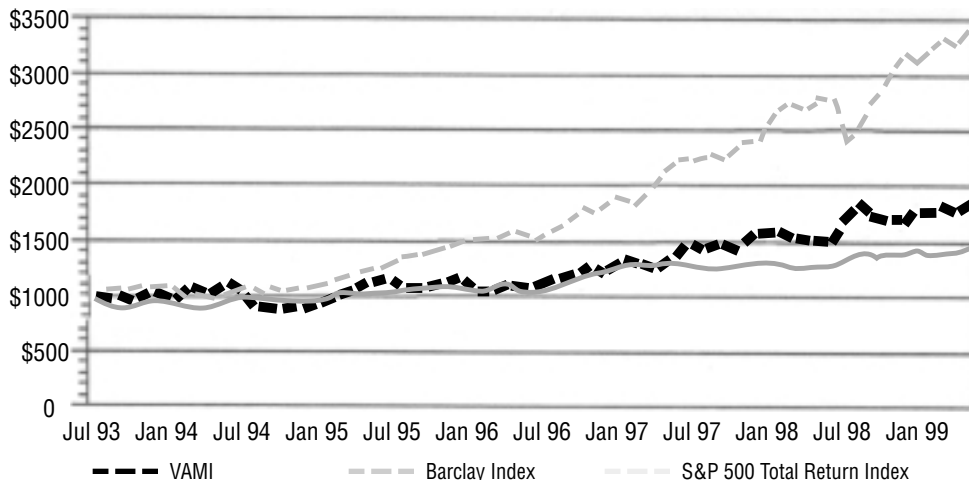
Drawdown Report

Depth	Length (Months)	Recovery (Months)	Start Date	End Date
34.27	2	12	May-83	Jul-83
25.52	3	7	Jun-86	Sept-86
22.19	5	2	Nov-87	Apr-88
19.60	4	7	Jun-94	Oct-94
18.34	7	4	Jun-88	Jan-89
18.31	5	4	Dec-90	May-91
17.42	1	1	Jul-84	Aug-84

Time Windows

Length (Months)	Best	Worst	Average
1	43.44%	-22.12%	2.71%
3	85.35%	-26.89%	8.13%
6	149.29%	-27.17%	16.71%
9	234.06%	-21.42%	26.20%
12	279.94%	-16.64%	36.90%
18	337.08%	-9.33%	61.17%
24	434.23%	-0.77%	86.89%

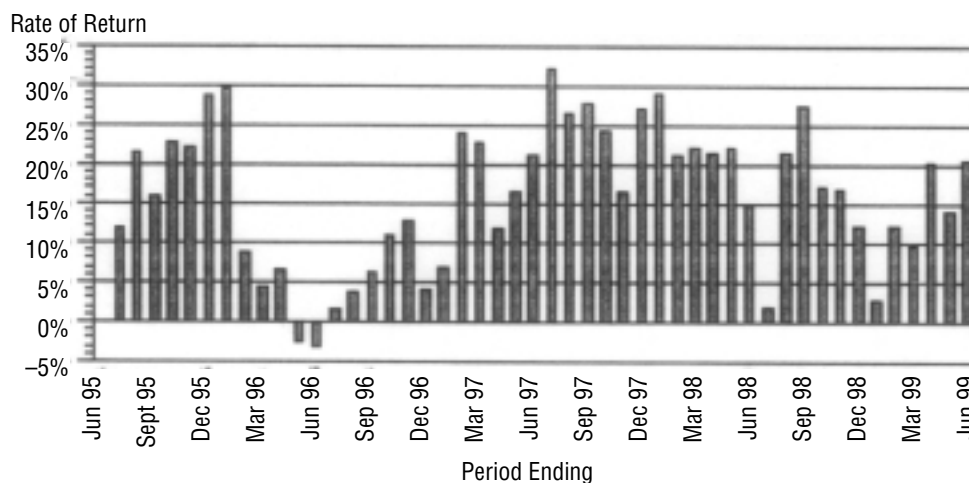
VAMI vs Barclay & S&P 500



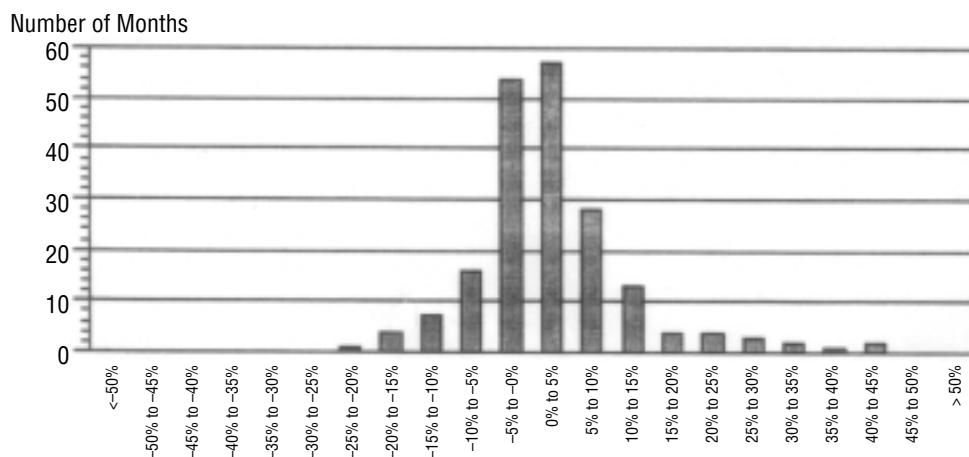
Performance History

DATE	VAMI	ROR
Jul-95	1000	-1.15
Aug-95	978	-2.15
Sep-95	976	-0.28
Oct-95	973	-0.25
Nov-95	999	2.65
Dec-95	1043	4.38
Jan-96	1045	0.25
Feb-96	951	-9.01
Mar-96	957	0.65
Apr-96	1011	5.61
May-96	980	-3.04
Jun-96	979	-0.15
Jul-96	1015	3.73
Aug-96	1014	-0.14
Sep-96	1037	2.28
Oct-96	1078	3.96
Nov-96	1127	4.51
Dec-96	1086	-3.61
Jan-97	1116	2.74
Feb-97	1178	5.57
Mar-97	1175	-0.23
Apr-97	1130	-3.87
May-97	1142	1.03
Jun-97	1186	3.89
Jul-97	1342	13.12
Aug-97	1282	-4.47
Sep-97	1324	3.34
Oct-97	1339	1.13
Nov-97	1312	-2.06
Dec-97	1380	5.18
Jan-98	1439	4.28
Feb-98	1427	-0.79
Mar-98	1437	0.68
Apr-98	1373	-4.46
May-98	1395	1.59
Jun-98	1364	-2.21
Jul-98	1369	0.33
Aug-98	1556	13.70
Sep-98	1688	8.45
Oct-98	1567	-7.14
Nov-98	1531	-2.31
Dec-98	1548	1.12
Jan-99	1477	-4.57
Feb-99	1603	8.49
Mar-99	1575	-1.70
Apr-99	1652	4.89
May-99	1589	-3.85
Jun-99	1643	3.39

Returns for Preceding 12-month Periods



Distribution of Monthly Returns



The Barclay Institutional Report 515-472-3456

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Performance of Trading Advisors Through August, 1999 (Partial List)

Advisor/Program Name	Minimum Investment Required	Start Date	Pct Change 1 Mo	Pct Change YTD	Pct Change 12 Mo	Pct Change 36 Mo	1 Mo Rank	YTD Rank	12 Mo Rank	36 Mo Rank	Initial Equity (Mil)	Current Equity (Mil)	Mgmt/ Incent Fees	Market Focus	Methodology
EICKELBERG & ASSOCIATES (PHOENIX)	1,000,000	1/94	-2.6	-9.1	-1.1	77.8	302	326	246	68	.13	7.54	0/25	DIV	Systematic
EIGER FUTURES MGT (INDEX)	25,000	9/93	-88.4	-89.1	-89.1	-96.1	173	371	359	289	.01	4/20	4/20	STX	Systematic
ELM FINANCIAL (GL FINANCIAL)	250,000	6/91	-5.8	-3.3	7.2	69.9	355	258	155	87	65.33	23.00	2/20	DIV	Systematic
EMC CAPITAL MGT (CLASSIC)	2,000,000	1/85	-9	-4.8	-4.8	41.0	249	254	280	157	1.07	56.97	2/20	DIV	Systematic
EMC CAPITAL MGT (NEW)	2,000,000	8/96	-1.4	-4.2	-4	27.1	256	270	235	206	1.07	10.61	2/20	DIV	Systematic
ESSEX TRADING (BALANCED GROWTH)	100,000	5/95	-1.6	6.9	19.8	88.2	266	99	75	57	.10	2.07	2/20	DIV	Systematic
ESTLANDER & RONNUND (GLOBAL)	5,000,000	8/91	-1	-11.0	-14.3	54.1	218	334	327	122	.24	57.30	2/20	DIV	Systematic
EURODOC TRADING ADVISORS (ACTUARIAL)	500,000	8/97	2.2	2.3	2.3	20.0	174	168	204	220	.32	2/20	FIN	Systematic	
FINAGRA MGT (AIG COMMODITY)	1,000,000	8/97	1.2	16.6	24.4	45.7	98	46	54	142	20.00	86.00	2/20	AG	Discretionary
FINAGRA MGT (SOFT COMMODITY)	Closed	10/95	.0	17.9	23.8	45.7	155	42	58	142	.32	2.24	2/20	AG	Discretionary
FIRST QUADRANT (GLOBAL TACTICAL)	5,000,000	6/89	8.1	7.1	5.7	2.6	175	84	175	258	50.00	2/20	DIV	DIV	Systematic
FIRST QUADRANT (TACTICAL CURRENCY)	5,000,000	4/92	1.7	1.7	5.0	12.0	176	175	185	239	1.94	2/20	CUR	CUR	Systematic
FIRST SOUTHEASTERN CAPITAL MGT	200,000	12/98	-3.4	15.5	5	32.2	322	51	82	150	5.43	20.98	1/20	DIV	Systematic
FORT (GLOBAL INCOME)	1,000,000	10/93	1.3	1.4	18.0	43.6	95	184	82	30	5.00	58.15	2/20	DIV	Systematic
FORT ORANGE CAPITAL (GLOBAL STRATEGIC)	1,000,000	9/92	-2.2	-22.0	-15.9	128.9	285	364	331	30	1.07	3/15	3/15	DIV	Trend-based
FRIEDBERG COMMODITY MGT (CURRENCY)	50,000	1/86	-3.3	19.0	-15.9	33.1	316	35	332	181	.28	80.99	3/0	CUR	Discretionary
FRIEDBERG COMMODITY MGT (DIVERSIFIED)	150,000	7/94	-7.9	-28.9	-27.7	2.1	364	367	354	260	.14	8.62	3/25	DIV	Discretionary
MICHAEL J FRISCHMEYER (ICL FEE)	40,000	1/81	-3.0	7.8	2.1	-30.7	308	87	205	282	.59	7.11	1/20	DIV	Trend-based
MICHAEL J FRISCHMEYER (REGULAR)	40,000	3/94	-3.0	-2.3	-6.9	-37.7	309	243	293	285	.63	1.25	.33/20	DIV	Trend-based
FUNDAMENTAL FUTURES	100,000	1/79	-5.7	-5.7	-16.5	-27.2	177	290	338	281	.47	4/15	4/15	AG	Discretionary
FUTURES TRADING CONCEPTS (GLOBAL DIV)	2,000,000	1/95	7.1	12.6	153.0	153.0	178	97	114	25	1.45	2/25	2/25	DIV	Trend-based
FUTURES TRUTH	100,000	9/95	-6	-7.1	-11.9	-19.3	240	307	319	279	.83	.95	2/20	DIV	Trend-based
FX CONCEPTS (DEVELOPED MARKETS CUR)	1,000,000	5/88	-4	16.9	47.3	47.3	179	215	87	137	50.00	1/20	1/20	CUR	Systematic
FX CONCEPTS (EMERGING MARKETS CUR)	1,000,000	12/97	21.3	26.8	26.8	26.8	180	32	49	195	2.38	10.39	1/20	CUR	Systematic
GAIA CORP IRELAND (10% RISK)	3,000,000	6/96	9	7.1	2.1	29.5	113	95	207	195	.65	14.60	2/20	CUR	Systematic
GAIA CORP IRELAND (25% RISK)	1,000,000	1/95	1.6	14.3	6.2	57.8	89	56	166	111	10.87	2/20	2/20	CUR	Systematic
GAIA CORP IRELAND (FX)	5,000,000	1/95	1.6	14.3	6.2	50.2	90	57	167	132	5.28	2/20	2/20	CUR	Systematic
GAMMA CAPITAL MGT	1,000,000	1/97	-5.2	-5.0	5.0	2.00	181	286	184	184	2.00	2/20	2/20	FIN	Systematic
GATEWAY FUTURES	1,000,000	1/92	-3.3	1.4	-1	32.3	317	182	228	184	.50	23.39	2.5/20	FIN	Systematic
GERLING & COMPANY PTY	100,000	1/97	3	3.2	-2.8	-2.8	143	148	264	281	.30	1.17	3/20	DIV	Trend-based
GK CAPITAL (DISCRETIONARY)	250,000	10/95	8	-8.9	-4.1	61.0	116	322	274	102	.20	2.80	2/20	DIV	Discretionary
GLACIER CAPITAL MGT	100,000	9/96	6.5	-7.3	-12.6	24.1	16	311	320	215	.10	.48	2/20	DIV	Trend-based
GLACIER CAPITAL MGT (EXPANDED DIV)	250,000	4/99	3	-4	16.9	47.3	140	215	87	137	50.00	1/20	1/20	CUR	Systematic
GLECKMAN CAPITAL MGT (FINANCIAL FUT)	125,000	3/98	-2.1	-6.5	2.8	2.8	283	295	201	184	.20	1.84	0/25	FIN	Systematic
GLOBAL CAPITAL MARKETS STRATEGIES	250,000	8/96	-4.4	-6.5	-6	53.6	336	299	237	126	.15	7.80	2/25	DIV	Systematic
GNI FUND MGT (BEACH-TECHNICAL)	5,000,000	6/94	0	11.1	19.8	92.8	156	69	74	55	2.64	240.00	3/20	DIV	Systematic
GNI FUND MGT (HCM-HAIDAR)	100,000	5/97	.6	-1.9	-2.6	24.4	119	236	262	213	5.00	35.20	2/20	DIV	Systematic
GOLDMAN MGT	100,000	1/87	2.8	2.8	4.6	262.4	182	153	187	213	.20	45.56	2/20	STX	Discretionary
GOLLYHOTTT TRADING (DISCRETIONARY)	5,000,000	1/93	1.0	1.3	7.0	262.4	108	185	157	8	1.60	45.56	2/20	DIV	Discretionary
GOLYHOTTT TRADING (SYSTEM)	5,000,000	3/98	-5.2	-4.8	-1.0	211.8	346	281	243	14	11.33	22.20	2/20	DIV	Systematic
GOTHAM INVEST MGT GROUP (DIV A)	1,000,000	4/98	-18.8	-9.6	-6.9	310.0	375	329	295	5	.04	10.21	2/20	DIV	Discretionary
GOTHAM INVEST MGT GROUP (DIV B)	300,000	1/99	-20.0	-13.3	16.5	16.5	376	341	91	252	.71	5.69	2/20	DIV	Discretionary
GOTHAM INVEST MGT GROUP (DIV C)	150,000	4/99	-22.9	-1.5	5.4	2.9	377	228	249	252	5.00	22.62	5/20	CUR	Systematic
GRINHAM MANAGED FUTURES PTY LTD	2,000,000	9/93	-3.5	-4.5	-1.2	40.8	327	275	248	158	.40	300.00	2/20	DIV	Systematic
HAMPTON INVESTORS (GX)	500,000	7/95	-5	-6.7	10.1	211.8	234	293	131	14	.25	81.00	2/20	STX	Systematic
HANSEATIC (DISCRETIONARY)	500,000	2/96	-2.2	-19.0	9.2	310.0	286	357	141	5	.04	10.21	2/20	DIV	Discretionary
HANSEATIC (GLOBAL)	500,000	11/96	2.8	3.4	16.5	16.5	56	143	91	252	.71	5.69	2/20	DIV	Discretionary
HANSEATIC (PLUS YIELD ENHANCEMENT)	500,000	4/91	-1	-1.5	-1.3	5.4	219	228	249	252	5.00	22.62	5/20	CUR	Systematic
HANSEN CAPITAL MGT	1,000,000	4/94	-2	15.8	16.3	2.9	225	49	93	257	1.00	12.03	2/25	DIV	Systematic
HARBOUR MGT (ORIGINAL)	200,000	6/91	-7.5	-6.7	-15.6	8.0	362	304	329	247	.29	2.00	3/20	DIV	Trend-based
HARBOUR MGT (MULTI-SYSTEM)	500,000	3/99	-4.8	30.4	91.3	303.6	341	22	9	20	.52	2.71	2/20	DIV	Systematic
HARGRAVE FIN GROUP (BOND ONLY)	50,000	8/98	9.0	5.6	44.7	303.6	10	117	19	6	.26	1.10	0/25	FIN	Systematic
HATHERSAGE CAPITAL (ACCELERATED)	1,000,000	12/91	-6.0	18.4	50.1	144.7	357	38	16	28	1.29	1.70	2/20	CUR	Discretionary
HATHERSAGE CAPITAL (DAILY GROWTH)	500,000	1/92	-2	10.6	23.8	128.0	226	71	59	31	1.00	10.90	2/20	CUR	Discretionary
HATHERSAGE CAPITAL MGT (LONG TERM)	1,000,000	8/91	-1.9	10.6	23.8	128.0	276	71	59	31	1.00	10.90	2/20	CUR	Discretionary
HAWKSBILL CAPITAL (GLOBAL DIVERSIFIED)	2,000,000	1/85	-8.9	-6.5	-1.4	158.8	368	300	250	20	.09	28.90	2/20	DIV	Trend-based

Sample/ Illustration Only

Source: MAR

CONCLUSION

The past decade has been witness to tremendous growth in the assets committed to managed futures. Institutional and private investors alike have become aware of the benefits associated with an investment in managed futures: access to foreign markets and commodities, the ease of going long or short to benefit from general price moves, enhanced returns and reduced portfolio risk, and the liquidity associated with global futures markets.

Managed futures present investors with another way of attaining investment return objectives and achieving portfolio diversification. For further information on the merits of including managed futures in a diversified investment portfolio, see the information sources in Appendices 2 and 3, or call the Chicago Mercantile Exchange.

APPENDIX 1: GLOSSARY OF TERMS

Clearing Member: Generally, a firm that is a member of an exchange clearing organization. Exchange clearing members have the ultimate responsibility for the financial commitments of customers who clear futures transactions through them.

Commodity Pool: An enterprise, usually in the form of a limited partnership, in which funds contributed by a number of investors are combined for purposes of trading futures or commodity options.

Commodity Pool Operator (CPO): An individual or organization that operates or solicits funds for a commodity pool. Generally required to be registered with the Commodity Futures Trading Commission (CFTC) and the National Futures Association (NFA).

Commodity Trading Advisor (CTA): An individual or organization that directly or indirectly advises others on the buying and selling of futures interests for compensation. Generally required to be registered with the CFTC and the NFA.

Disclosure Document: A document that every registered CTA and CPO is required to supply when soliciting customers; typically contains disclosure statements, information about the CTA's business background and trading methodology, as well as the CTA's Advisory Agreement and other agreements between the CTA and its client. The Disclosure Document must contain the actual performance record of customer accounts traded for the past three years.

Discretionary Account: An arrangement by which the owner of the account gives written power of attorney to a CTA to buy and sell without prior approval of the account owner. Often referred to as a **Managed Account**.

Drawdown: The dollar amount of a decline in performance of an investment from peak to trough. The depth and length of drawdown periods and the time taken to recover to the previous peak are closely watched factors.

Equity: The dollar value of a futures trading account if all open positions were offset at the going market price.

Futures Commission Merchant (FCM): A brokerage organization that does both of the following: (1) solicits or accepts orders to buy or sell futures contracts or futures options, and (2) accepts money or other assets from customers to support such orders.

Futures Contract: A standardized, legally binding agreement to buy or sell a specific quantity or grade of a commodity at a later date. Freely transferable and traded only by public auction on designated exchanges.

Incentive Fee: Fee based on performance that typically is charged quarterly by the CTA for managing a customer's account. This fee equals a specified percentage of new net profits, and generally is only charged if the net equity for the account for a given quarter exceeds its highest previous quarter-end net equity. Also referred to as **Performance Fee**.

Managed Account: A brokerage account at an FCM in which discretionary authority to direct trading is delegated to a CTA. See **Discretionary Account**.

Management Fee: Fee, based on amount of assets under management, that is charged by the CTA or CPO for managing a customer's account. This fee, typically charged monthly or quarterly, equals a specified percentage of the equity in the customer's account.

Manager of Managers: An individual or organization that allocates assets to CTAs and manages the allocations on behalf of investors. Generally registered as a CTA and CPO with the CFTC. Also referred to as a **Trading Manager**.

Margin: see **Performance Bond**.

Net Asset Value: The value of each unit of participation in a commodity pool. Basically a calculation of assets minus liabilities plus or minus the value of open positions when marked to the market, divided by the number of units.

Net Equity: The ledger balance plus open trade equity.

Net Performance: Increase or decrease in Net Asset Value exclusive of additions, withdrawals and redemptions.

Notional Funds: Funds that a client has committed to trading under the management of a CTA, but that are not physically on deposit in the client's trading account.

Performance Bond: The amount of money or collateral deposited by a customer with his broker, or by a broker with the clearing organizations, for the purpose of insuring the broker or clearing organization against loss on open futures contracts. Also known in the futures industry as "margin."

Performance Fee: See **Incentive Fee**.

Sharpe Ratio: Developed by William Sharpe of Stanford University, this ratio is one of the key risk/reward ratios used by the industry. It compares the rate of reward from an investment with the risk incurred in gaining that reward. The formula is the annualized rate of return minus the risk-free rate divided by the annualized standard deviation.

Standard Deviation: The degree to which each monthly return clusters about the mean. In a normal distribution, 68% of the months will be within one standard deviation of the mean and 95% will be within two standard deviations of the mean. Standard deviation is computed arithmetically.

Trading Manager: See **Manager of Managers**.

APPENDIX 2: INDUSTRY INFORMATION SOURCES

Information on CTAs, managed futures and commodity pools, as well as how to open managed accounts or purchase limited partnership interests in a commodity pool, can be obtained from the Chicago Mercantile Exchange (www.cme.com), other futures exchanges, futures commission merchants (FCMs) and from the following sources:

Independent Reporting Services:

Barclay Trading Group, Ltd.

508 N. 2nd St., Suite 201
Fairfield, IA 52556
515-472-3456
www.barclaygrp.com

Managed Accounts Reports (MAR)

220 5th Avenue, 19th Floor
New York, New York
212-213-6202
www.marhedge.com

TASS Management Limited

Charter House 1315 Carteret
London SW1H9DJ
United Kingdom
44 207 222 0099

TASS Management (NY office)

555 Theodore Fremd Ave. Suite C206
Rye, New York 10580
212-751-1252
www.tassman.com

Publications:

Futures Magazine

250 S. Wacker Drive, Suite 1150
Chicago, IL 60606

Regulatory Agencies

Commodity Futures Trading Commission

Three Lafayette Center
1155 21st Street NW
Washington, DC 20581
202-418-5020
www.cftc.gov

National Futures Association

200 West Madison Street, Suite 1600
Chicago, IL 60606-3447
312-781-1300
www.nfa.futures.org

Industry Associations

Managed Futures Association

1200 19th Street NW, Suite 300
Washington, DC 20036-2422
202-828-6040
www.mfainfo.org

Futures Industry Association

2001 Pennsylvania Ave. NW, Suite 600
Washington, DC 20006
202-466-5460
www.fiafii.org

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