

COMMODITY TRADING ADVISOR (CTA) PRIMER

Commodity Trading Advisors (CTAs) manage approximately 15% of the total \$2 trillion in hedge fund assets under management. In general, CTA managers trade futures and deploy systematic trading strategies. CTAs are diversified by asset class (e.g. commodities, rates, currencies, equity indices), geography, trading time horizon, and program type (e.g. trend following, pattern recognition, mean reversion, etc.). Managed futures (another name for these hedge fund strategies) are often considered to be the most liquid and transparent of hedge fund strategies. Exhibit 1 further explains various CTA strategies as well as the regulatory regime surrounding CTAs. In our view, the right CTA investments can play an important role in an investor's portfolio.

BENEFITS OF AN ALLOCATION TO CTAs

We believe that CTAs have attractive characteristics, as illustrated in the three tables below.

CTAs offer attractive risk/return characteristics in their own right.

Performance Statistics

(Sources: Barclay CTA Database, HFR Database, and Pertrac Database)

<i>Period: January 2002 – December 2011</i>	Barclay CTA Index¹	S&P 500	Barclays Bond Index	HFRX Global Index
Annualized Returns	5.4%	2.9%	5.8%	1.8%
Annualized Standard Deviation	6.9%	15.9%	3.7%	6.1%
Skewness	0.28	(0.62)	(0.45)	(2.07)
Excess Kurtosis	0.31	1.22	1.7	8.19
Sharpe	0.79	0.18	1.56	0.29
Largest Drawdown (DD)	(7.7%)	(51.0%)	(3.8%)	(25.2%)
Length of Largest DD (<i>Months</i>)	5	16	7	14
Sterling (<i>Ann. Return / Max DD</i>)	0.70	0.06	1.51	0.07
Sortino (<i>Ann. Return / Downside Dev.</i>)	1.45	0.25	2.86	0.36

CTAs can provide portfolio diversification benefits typically due to low and sometimes negative correlations to traditional asset classes and macro indicators. Typical CTA risk return profiles have had negative correlations to equities in several crisis periods and are relatively insensitive to the broader economic climate.

Barclay CTA Index Correlation to Indices and Macro Indicators

(Source: Bloomberg)

	Since 2000	2008
S&P 500	(0.13)	(0.44)
JP Morgan Global Aggregate Bond Index	0.37	0.13
Yield on Gov't 3 mo. Bills	0.03	(0.07)
US yield curve steepness	(0.06)	(0.04)
S&P Muni Index	0.11	(0.48)
HFRX	0.20	0.07
MSCI World	(0.05)	(0.26)
GS Commodity Index	0.27	0.16
VIX	0.01	0.11
CPI mom change	(0.07)	(0.31)
Conference Board US Leading Indicator	(0.11)	0.08
Chicago Fed. National Activity Coincident Indicator	(0.01)	0.14
Conference Board US Lagging Indicator	0.02	(0.36)

^[1] We use the Barclay CTA Index as a proxy for the CTA industry. It is an unweighted index which measures the overall performance of the industry, showing performance of a large number of CTAs with at least four years of data.

CTAs tend to outperform equities during periods of turmoil.

CTA Performance During Severe Stock Market Declines

Source: Barclay CTA Database

Event	Time Period	S&P 500	Barclay CTA Index
Crash of '87	9/01/87 - 12/31/87	(24.2%)	14.6%
Iraq-Kuwait war	1/01/90 - 10/31/90	(11.5%)	23.5%
Russian Default/ LTCM Blowup	5/01/98 - 8/31/98	(13.5%)	6.8%
Tech Bubble Bursts	5/01/00 - 9/30/02	(42.0%)	24.5%
Stock Market Crash	12/31/07 - 12/31/08	(37.4%)	15.6%

CTAs have been shown to add value to a broadly diversified portfolio across different market conditions. Over many market events, CTAs prove to be the most “alternative” alternative asset class amongst liquid hedge funds and less liquid private and real asset strategies. This can be demonstrated by looking at the two worst periods for global equity markets over the past decade which were May 2000 - September 2002 and 2008. During those two time periods the S&P 500 lost -42% and -37.4% of its value, respectively, and the Barclay CTA Index was up 24.5% and 15.6%, respectively.

On the basis of these observations, we conclude that CTAs are a good “all weather” investment and can provide useful diversification benefits to most portfolios.

STRUCTURING A CTA INVESTMENT

Having made the case for CTAs, the key question becomes one of how to structure an investment. Two of the primary considerations are: (i) single manager CTAs versus pooled CTAs and (ii) larger CTAs versus emerging/smaller CTAs.

We will first compare single manager CTA investments to pooled CTA investments. Single manager CTAs may be strong investments in their own right; however, the volatility of individual CTAs can be higher with the potential for sizable drawdowns occurring at different points of an economic or market cycle. Often, widely followed indices mask single manager volatility and drawdown profiles of their underlying constituents. For example, the Newedge CTA Index reflects 20 of the largest CTA funds. Over the trailing five year period through December 31, 2011, the Newedge CTA Index² had a maximum drawdown of just (7.1%). However, looking through to the underlying constituent programs, no fewer than 13 programs - or 65% of the constituent index sub-funds - experienced drawdowns of at least (15%) over that same period.

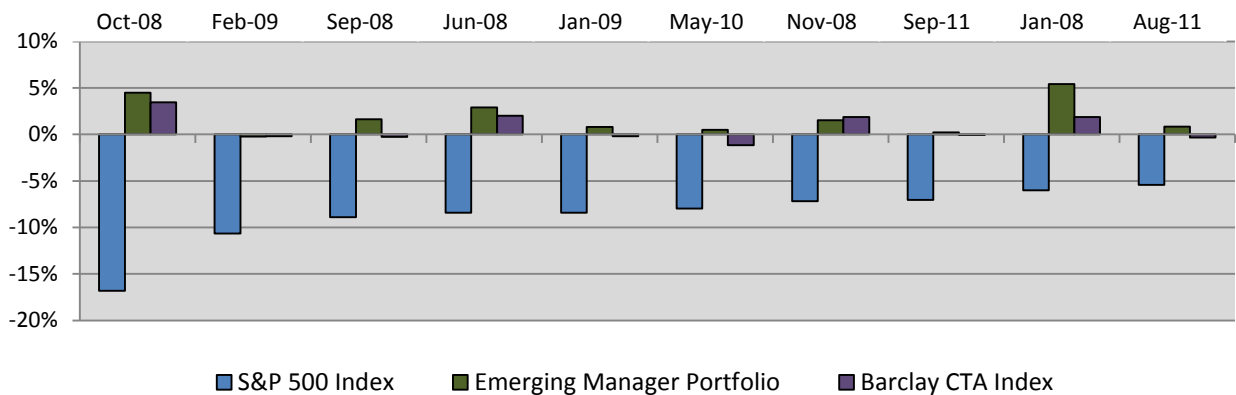
Following our thesis that there are benefits to pooled CTA vehicles, investors can then consider whether to invest in pools of the larger CTAs or pools of emerging / smaller CTAs. Our experience, based on many years of investing, suggests that investments in emerging / smaller CTAs can be very effective. To demonstrate this, in the chart below we have compared the performance statistics of (i) recognized CTA indices (Barclay & Newedge); (ii) statistics of an unweighted composite of some of the largest CTAs by size (“Top 10 Pool”); and (iii) an actively selected pool of 25 emerging / smaller CTAs, diversified by style, trading time frame, and asset class. The 25 CTA “Emerging Manager Pool” was selected on the basis of qualitative and quantitative due diligence using the judgment of a team of experienced investment professionals at Pulse Capital Partners.

² As with the Barclay CTA Index, we use the Newedge CTA Index as a proxy for the CTA industry. The Newedge CTA Index is equal-weighted and reconstituted annually. The index calculates the net daily rate of return for a pool of CTAs selected from the largest managers open to new investment.

Period: January 2006 – December 2011	Barclay CTA Index	Newedge CTA Index	Top 10 Pool	Emerging Manager Pool
Ann. Returns	4.73%	4.46%	8.04%	10.60%
Ann. Std. Dev.	5.96%	7.77%	7.72%	7.15%
Sharpe	0.79	0.57	1.04	1.48
Largest Drawdown	5.60%	7.09%	5.89%	4.02%
Sterling	0.84	0.63	1.37	2.64
Sortino	1.51	0.94	1.89	3.44

“Emerging Manager Pool” refers to a pool of 25 CTAs that the authors selected and assigned weights to in November of 2010. Each constituent CTA was chosen based on a number of criteria, such as size, age, strategy, and portfolio utility. From December 2010 through December 2011, the CTAs (and their respective weights) contained in the pool remained unchanged. The measurement period goes back six years to reflect the trading horizon of the 25 manager Emerging Manager Pool.

Performance of the “Emerging Manager Pool” During 10 Worst Months of S&P 500 Performance



We observe, based on the data above, that while a broad exposure to CTAs has attractive characteristics, the Emerging Manager Pool demonstrates (i) alpha over diversified indices (Barclay & Newedge), (ii) higher returns, and (iii) lower drawdowns and volatility over the Top 10 Pool. This conclusion is fundamentally supported by the diversified sources of alpha that smaller / emerging CTAs are able to deliver. They are able to have more flexible investing styles and trading time horizons than the larger CTAs, who tend to move in tandem due to their size and market liquidity constraints. Exhibit 2 shows the low average correlation among the 25 CTAs in the selected Emerging Manager Pool in support of the observations above.

POOL CONSTRUCTION

Putting together an actively managed pool of emerging / smaller CTA managers requires the following:

- Deep experience and a rigorous investment process in manager selection based on exhaustive due diligence (both operational and investment)
- Access to and ability to screen effectively a large global universe of CTAs that would have differentiated models, signals, and styles
- Quantitative tools that enable value-add strategic and tactical asset allocation processes
- Advanced risk management tools that use trade level transparency to aggregate exposure and P&L contributions on a daily basis, in order to monitor risk at various levels as well as conduct various risk analyses (see Exhibit 3 below)

RISK MANAGEMENT AND MANAGED ACCOUNTS

Our experience is that risk management oversight of CTA investments can be enhanced with managed account investment structures. Exhibit 4 provides details as to the ingredients required to set up an effective managed account co-mingled structure for a pooled CTA product. Some of the benefits of the managed account structure are:

- Daily transparency allowing full and frequent reporting for investors and the investment manager;
- Controls over cash movements, thus mitigating fraud risk
- Protection against manager style drift
- Reduced counterparty risks
- Independent valuation/reconciliation controls
- Near real-time monitoring of investment guidelines
- An improved ability for the investment manager to undertake dynamic tactical asset allocation
- The ability to more actively control drawdowns

CONCLUSION

In summary, we believe this primer draws several important conclusions:

- As an asset class, CTAs have strong risk / reward characteristics and offer investors transparency and liquidity
- CTAs exhibit low correlations to other major asset classes and can generate alpha in their own right
- An actively managed pool of emerging / smaller CTAs can be pooled to form a “multi-strategy” exposure through a single fund offering
- The use of a managed account fund structure provides a risk controlled solution which can be accretive to a broad portfolio of hedge funds

INFORMATION ABOUT PULSE CAPITAL PARTNERS, LLC

Pulse Capital Partners, LLC was founded in 2010 with an aim towards growing next generation managers and providing customized managed account portfolios to institutional investors. The investment team is led by Ibrahim Gharghour and Joe Burns, who have 30+ combined years of hedge fund investment experience. The team has extensive experience investing in CTAs and other systematic strategies.

Pulse Capital Partners, LLC
640 Fifth Avenue, 17th Floor
New York, NY 10019
212-430-1860
www.pulsecp.com

Style Diversification		Regulatory Oversight
Fundamental	Analyze(s) non-price factors affecting global markets, which create directional and relative value trading opportunities across multiple timeframes.	<p>CTAs have been highly regulated in the United States since the mid-1970s when the U.S. Congress created the Commodity Futures Trading Commission (the "CFTC"). The CFTC was given jurisdiction over futures trading in the United States. At time of creation of the CFTC, Congress allowed for the creation of a "registered futures association," which allowed futures industry participants to create a self-regulatory organization to enforce CFTC regulations. In response, the National Futures Association ("NFA") was set up to act as the self-regulatory organization for the futures industry.</p> <p>The NFA's main purpose is to protect the interests of investors in the futures or commodities industry in the US. The NFA protects investors in many ways, primarily by checking the background of any firm or individual that wants to conduct business in the futures industry. All brokers who trade commodities and futures or who manage commodities or futures products should be registered with the NFA. The NFA also has investigation / audit and enforcement divisions that are given authority to fine members for failure to protect investor interests or follow CFTC rules.</p>
Short-term trend following	Based on algorithmic, discretionary, or chart-based methodologies. Seeks to take advantage of short term price movements	
Intermediate & Long-Term Trend-Following	Same methodologies as above but focus is on price trends over a 3-6 month time period or longer	
Arbitrage	Uses systematic or fundamental analysis to identify price relationships (intra or inter market or between different time periods) that will diverge or converge over time. Seeks to profit from changes in these price relationships	
Contrarian	Identifies short-term opportunities resulting from price movements around core trends (e.g. where markets are over-extended or in non-directional environments)	
Tactical / Technical	Uses technical analyses to determine short-term price disparities	
Global Macro	Uses fundamental analyses to take positions on longer term macro trends in multiple markets	

Exhibit 2
EMERGING MANAGER POOL / ADDITIONAL INFORMATION

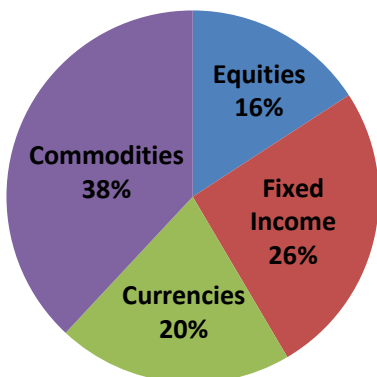
Emerging Manager Pool Cross-Correlation Analysis

	Program #1	Program #2	Program #3	Program #4	Program #5	Program #6	Program #7	Program #8	Program #9	Program #10	Program #11	Program #12	Program #13	Program #14	Program #15	Program #16	Program #17	Program #18	Program #19	Program #20	Program #21	Program #22	Program #23	Program #24	Program #25	Barclay CTA Index
Program #1	1.00	-0.05	0.09	-0.03	0.21	0.05	-0.06	0.40	-0.13	-0.11	-0.06	0.05	0.11	-0.06	0.24	-0.03	-0.16	0.00	0.04	-0.27	0.04	0.25	-0.16	-0.13	-0.14	-0.10
Program #2	-0.05	1.00	0.06	0.39	0.35	0.27	0.23	-0.01	0.45	0.44	0.52	0.55	0.21	0.17	-0.14	0.03	0.09	0.58	0.44	0.47	0.25	0.50	0.50	0.13	0.25	0.76
Program #3	0.09	0.06	1.00	0.03	-0.04	0.00	0.16	-0.03	0.03	0.14	0.07	0.01	-0.12	-0.03	0.15	-0.16	0.11	0.06	0.17	0.03	0.15	-0.06	0.03	0.18	-0.05	0.09
Program #4	-0.03	0.39	0.03	1.00	0.26	0.28	0.42	-0.16	0.50	0.60	0.54	0.59	0.36	0.45	-0.21	0.02	-0.21	0.62	0.37	0.18	0.25	0.26	0.74	0.22	0.22	0.68
Program #5	0.21	0.35	-0.04	0.26	1.00	0.36	0.19	0.20	0.48	0.28	0.48	0.45	0.46	0.11	0.28	0.40	-0.19	0.45	0.20	-0.13	-0.21	0.14	0.27	0.35	-0.01	0.50
Program #6	0.05	0.27	0.00	0.28	0.36	1.00	0.15	0.31	0.19	0.42	0.19	0.81	0.25	0.31	-0.10	0.07	0.11	0.27	-0.05	0.17	-0.28	0.21	0.15	-0.22	0.36	0.43
Program #7	-0.06	0.23	0.16	0.42	0.19	0.15	1.00	0.02	0.34	0.54	0.38	0.50	0.24	0.35	-0.23	0.15	0.03	0.36	-0.14	-0.03	0.33	0.18	0.41	-0.18	0.35	0.41
Program #8	0.40	-0.01	-0.03	-0.16	0.20	0.31	0.02	1.00	-0.18	0.09	-0.20	0.22	0.05	-0.19	0.23	-0.22	0.31	-0.04	-0.30	0.21	0.23	0.33	-0.26	-0.27	0.39	-0.07
Program #9	-0.13	0.45	0.03	0.50	0.48	0.19	0.34	-0.18	1.00	0.30	0.50	0.49	0.25	0.32	-0.13	0.06	-0.32	0.49	0.41	0.23	0.12	0.32	0.64	0.32	0.10	0.74
Program #10	-0.11	0.44	0.14	0.60	0.28	0.42	0.54	0.09	0.30	1.00	0.36	0.68	0.23	0.42	-0.12	0.13	-0.01	0.56	0.39	0.27	0.12	0.43	0.70	0.00	0.37	0.68
Program #11	-0.06	0.52	0.07	0.54	0.48	0.19	0.38	-0.20	0.50	0.36	1.00	0.43	0.43	0.32	0.01	-0.01	-0.25	0.40	0.39	0.11	0.12	0.16	0.68	0.33	0.11	0.70
Program #12	0.05	0.55	0.01	0.59	0.45	0.81	0.50	0.22	0.49	0.68	0.43	1.00	0.37	0.31	-0.08	0.09	0.01	0.68	0.13	0.31	0.01	0.56	0.70	-0.09	0.44	0.70
Program #13	0.11	0.21	-0.12	0.36	0.46	0.25	0.24	0.05	0.25	0.23	0.43	0.37	1.00	0.22	-0.03	0.39	-0.05	0.31	0.03	0.02	0.13	0.15	0.37	0.13	0.20	0.38
Program #14	-0.06	0.17	-0.03	0.45	0.11	0.31	0.35	-0.19	0.32	0.42	0.32	0.31	0.22	1.00	-0.30	-0.19	-0.14	0.25	0.37	0.16	-0.05	-0.23	0.68	-0.03	0.25	0.36
Program #15	0.24	-0.14	0.15	-0.21	0.28	-0.10	-0.23	0.23	-0.13	-0.12	0.01	-0.08	-0.03	-0.30	1.00	-0.32	-0.06	-0.14	0.05	-0.34	-0.05	-0.04	-0.29	0.20	-0.18	-0.14
Program #16	-0.03	0.03	-0.16	0.02	0.40	0.07	0.15	-0.22	0.06	0.13	-0.01	0.09	0.39	-0.19	-0.32	1.00	0.15	0.10	-0.32	0.08	-0.11	0.22	0.01	-0.13	0.26	0.22
Program #17	-0.16	0.09	0.11	-0.21	-0.19	0.11	0.03	0.31	-0.32	-0.01	-0.25	0.01	-0.05	-0.14	-0.06	0.15	1.00	-0.05	-0.42	0.08	0.24	-0.20	-0.17	-0.17	0.09	-0.24
Program #18	0.00	0.58	0.06	0.62	0.45	0.27	0.36	-0.04	0.49	0.56	0.40	0.68	0.31	0.25	-0.14	0.10	-0.05	1.00	0.56	0.33	0.12	0.53	0.72	0.17	0.24	0.83
Program #19	0.04	0.44	0.17	0.37	0.20	-0.05	-0.14	-0.30	0.41	0.39	0.39	0.13	0.03	0.37	0.05	-0.32	-0.42	0.56	1.00	0.13	0.01	0.16	0.51	0.45	-0.08	0.52
Program #20	-0.27	0.47	0.03	0.18	-0.13	0.17	-0.03	0.21	0.23	0.27	0.11	0.31	0.02	0.16	-0.34	0.08	0.08	0.33	0.13	1.00	-0.04	0.54	0.20	0.14	0.60	0.50
Program #21	0.04	0.25	0.15	0.25	-0.21	-0.28	0.33	0.23	0.12	0.12	0.12	0.01	0.13	-0.05	-0.05	-0.11	0.24	0.12	0.01	-0.04	1.00	0.06	0.11	0.06	0.15	0.12
Program #22	0.25	0.50	-0.06	0.26	0.14	0.21	0.18	0.33	0.32	0.43	0.16	0.56	0.15	-0.23	-0.04	0.22	-0.20	0.53	0.16	0.54	0.06	1.00	0.19	0.12	0.41	0.63
Program #23	-0.16	0.50	0.03	0.74	0.27	0.15	0.41	-0.26	0.64	0.70	0.68	0.70	0.37	0.68	-0.29	0.01	-0.17	0.72	0.51	0.20	0.11	0.19	1.00	0.18	0.55	0.82
Program #24	-0.13	0.13	0.18	0.22	0.35	-0.22	-0.18	-0.27	0.32	0.00	0.33	-0.09	0.13	-0.03	0.20	-0.13	-0.17	0.17	0.45	0.14	0.06	0.12	0.18	1.00	-0.20	0.26
Program #25	-0.14	0.25	-0.05	0.22	-0.01	0.36	0.35	0.39	0.10	0.37	0.11	0.44	0.20	0.25	-0.18	0.26	0.09	0.24	-0.08	0.60	0.15	0.41	0.55	-0.20	1.00	0.44
Barclay CTA Index	-0.10	0.76	0.09	0.68	0.50	0.43	0.41	-0.07	0.74	0.68	0.70	0.70	0.38	0.36	-0.14	0.22	-0.24	0.83	0.52	0.50	0.12	0.63	0.82	0.26	0.44	1.00

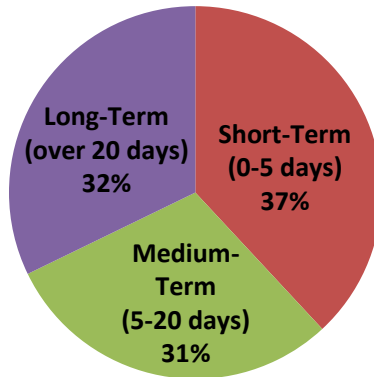
Average pairwise correlation across the 25 managers: 17.4%

Emerging Manager Pool Diversification

Asset Class Diversification



Time Horizon Diversification



Style Diversification

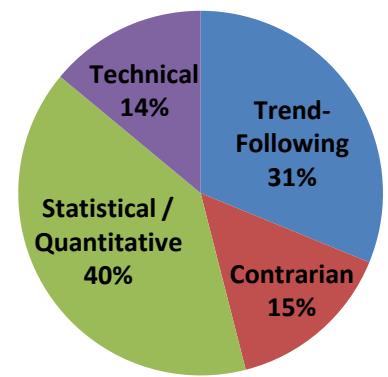


Exhibit 3
EXAMPLE RISK REPORT

Certain numbers below are intentionally left blank – this chart is for illustrative purposes only

MTD (net) Founder - Standard 0.00%	YTD Return (net) Founder - Standard 0.00%	Cumulative Return S.I. (net) Founder - Standard 0.00%	Annualized Return S.I. (net) Founder - Standard 0.00%
Estimated Net Return (Today) 0.00%	Annualized Volatility S.I. 0.00%	WDD (Daily) S.I. 0.00%	Skew 0.48
			Excess Kurtosis -0.20
			CVaR (d, 95%) -0.59%

Sectors

	AGRICULTURAL COMMODITIES	CURRENCIES	ENERGY	EQUITY INDICES	INTEREST RATES	METALS
Today's Gross Perf Contribution	0.10%	0.16%	0.03%	0.00%	0.08%	0.02%
MTD Gross Perf Contribution	0.18%	0.24%	0.16%	0.04%	-0.31%	-0.04%
Gross Exposure	41.93%	37.81%	58.19%	15.90%	487.57%	10.62%
Net Exposure	4.67%	0.41%	7.36%	5.55%	303.05%	2.31%
10-d Volatility	24.54%	9.04%	26.01%	10.51%	1.01%	18.22%
Volatility-Adj. Gross Exposure	10.29%	3.42%	15.13%	1.67%	4.94%	1.93%
Volatility-Adjusted Net Exposure	1.15%	0.04%	1.91%	0.58%	3.07%	0.42%

MARKETS

Currencies

	AUD	BRL	CAD	CHF	CZK	EUR	GBP	HKD	HUF
Gross Exposure	5.67%	0.30%	0.00%	2.53%	1.38%	9.82%	8.81%	0.00%	0.36%
Net Exposure	5.67%	0.30%	0.00%	-1.68%	-1.38%	-6.35%	-5.44%	0.00%	-0.36%

	KRW	MXN	NZD	PLZ	RUB	SEK	TRY	JPY	ZAR
Gross Exposure	0.86%	-0.59%	0.82%	0.40%	0.62%	0.26%	0.54%	33.12%	7.25%
Net Exposure	0.86%	-0.59%	0.82%	0.40%	0.62%	0.26%	0.54%	7.25%	0.81%

Equity Indices

	FTSE	S&P500	DAX	HSI	Nikkei	MSCI Taiwan	Nasdaq	ASX SPI	CNX Nifty	TSX
Gross Exposure	2.07%	3.01%	0.13%	0.80%	4.37%	0.07%	2.61%	1.66%	0.24%	0.33%
Net Exposure	2.07%	3.01%	0.13%	-0.43%	-0.30%	0.07%	2.61%	-1.66%	-0.24%	-0.33%
10-d Volatility (%)	9.34%	6.32%	12.91%	22.43%	12.59%	15.83%	7.65%	12.51%	11.69%	11.42%
Volatility-Adj. Gross Exposure	0.19%	0.19%	0.02%	0.18%	0.54%	0.01%	0.20%	0.21%	0.03%	0.04%
Volatility-Adjusted Net Exposure	0.19%	0.19%	0.02%	-0.10%	-0.11%	0.01%	0.20%	-0.21%	-0.03%	-0.04%

Interest Rates

	Bank Accept	Australia Govt	Canada Govt	ED	Euribor	German Govt	Japan Govt	UK Govt	US Govt
Gross Exposure	111.25%	3.38%	12.72%	77.47%	69.64%	51.75%	27.27%	64.91%	68.42%
Net Exposure	-46.74%	-1.63%	12.72%	72.26%	69.54%	46.17%	27.27%	64.91%	61.15%
10-d Volatility (%)	0.47%	1.48%	5.48%	0.43%	0.55%	3.14%	1.48%	1.42%	3.52%
Volatility-Adj. Gross Exposure	0.52%	0.05%	0.70%	0.33%	0.37%	0.65%	0.40%	0.67%	1.30%
Volatility-Adjusted Net Exposure	-0.22%	-0.02%	0.70%	0.31%	0.37%	0.30%	0.40%	0.67%	0.98%

Metals

	Gold	Copper	Aluminum	Nickel	Tin	Zinc	Silver	Platinum
Gross Exposure	4.37%	3.99%	0.43%	0.32%	0.39%	0.39%	0.37%	0.37%
Net Exposure	4.37%	-0.68%	-0.38%	-0.24%	-0.35%	-0.39%	-0.37%	-0.37%
10-d Volatility (%)	12.89%	21.58%	20.43%	22.38%	23.80%	18.09%	27.65%	21.66%
Volatility-Adj. Gross Exposure	0.56%	0.86%	0.09%	0.07%	0.09%	-0.07%	0.10%	0.08%
Volatility-Adjusted Net Exposure	0.56%	-0.15%	-0.08%	-0.05%	-0.08%	-0.07%	-0.10%	-0.08%

Use of Managed Accounts

The investment manager of a multi manager CTA fund can enhance their ability to manage risk through the use of an effective managed account platform providing “managed account-like” transparency and controls in tandem with well-structured sub-advisory agreements that delegate authority to underlying trading managers to trade on behalf of the fund. An effective trading agreement allows the investment manager the flexibility to manage risk, including: (i) giving the investment manager the authority to reduce each program’s exposure at any time, (ii) defining a list of approved counterparties, and (iii) setting investment and risk guidelines for the underlying trading manager.

The inherent transparency of the managed account structure allows drawdowns to be managed by the investment manager. As stated above, the investment manager should have the authority to reduce exposure at any time. In the event that the portfolio is experiencing a drawdown that is not in line with the mandate of the portfolio, the investment manager can systematically reduce exposures within the portfolio. Appropriate cash controls should be maintained by the investment manager, but delegation of authority to move cash should be given to the administrator.

CTAs generally employ a method where a model relies on various inputs from the market and instructs the advisor when to trade. These instructions are usually referred to as signals. Once the advisor receives the signal, they will then place the orders with their brokers, often in an automated manner. The broker will then attempt to execute the trade. Once the trade is executed, the advisor will allocate the trade to the appropriate accounts. If the executing broker is not the clearing broker, they will need to give-up the trade to the designated clearing broker. The sub-advisory agreement should include a schedule of approved counterparties that authorizes which brokers the advisor can execute and clear with.

Give-up Agreements are arranged prior to trading. The agreement will designate which brokers can give-up the trades to the investment manager’s clearing broker. Some advisors prefer to execute through specific brokers, but the investment manager should select their own clearing brokers that meet their own criteria. As the broker who ultimately has custody of the positions, it is important to make sure the clearing broker is viable. The investment manager should also maintain an alternative clearing broker to allow them the flexibility to move their positions in the event that one clearing broker has difficulty continuing their business.

The advisor will report their activity to the administrator after the trade has been executed. The administrator will then reconcile the activity to the statements they receive from the clearing broker. Some administrators provide a platform that allows investment managers to monitor the advisors 24 hours a day. Investment guidelines included in the trading agreement can be integrated with the platform where the investment manager could monitor contract limits, sector exposures, margin to equity usage, and other factors. We believe that active investment guideline monitoring protects against style drift and helps reduce the ability for the manager to take inappropriate risk.

Managed Account Platform Structure

Legal Setup	Platform Capabilities	Administrator Capabilities
<ul style="list-style-type: none"> ▪ Structure (Fund or Individual Managed Account) ▪ Investment Manager Agreement ▪ Sub Advisory Agreements <ul style="list-style-type: none"> ➢ Give Up Agreements ➢ Investment Guidelines ▪ ISDA/ISMA ▪ Prime Broker/FCM ▪ Custody Bank (Cash) ▪ Service Agreements <ul style="list-style-type: none"> ➢ Service Providers <ul style="list-style-type: none"> ○ Administrator ○ Managed Account Platform ○ Auditor ○ Outside Counsel 	<ul style="list-style-type: none"> ▪ 24 hour risk monitoring ▪ Consolidated exposure tracking ▪ P&L and statistical metrics ▪ Valuation ▪ Operational Due Diligence ▪ Guideline Monitoring 	<ul style="list-style-type: none"> ▪ Daily processing of portfolio activity ▪ Daily reconciliation ▪ Collateral Management ▪ Cash Controls ▪ Daily P&L/NAV ▪ Financial reporting ▪ Investor Services

Commodity Trading Advisor - An individual or a firm that is registered with the Commodity Futures Trading Commission and receives compensation for giving people advice on options, futures and the actual trading of managed futures accounts.

Commodity Futures Trading Commission - A U.S. federal agency established to ensure the open and efficient operation of the futures markets.

Managed Futures - Futures positions entered into by commodity trading advisors on behalf of investors.

Barclay CTA Index - A leading industry benchmark of representative performance of commodity trading advisors (CTAs).

S&P - The Standard and Poors 500 (S&P 500), an index made up of five hundred different stocks, is the benchmark of the overall market and is frequently used as the standard of comparison in terms of investment performance.

Barclays Bond Index - Barclays Global Aggregate Bond Index provides a broad-based measure of the global investment grade fixed-rate debt markets.

HFRX - The HFRX Global Hedge Fund Index is a benchmark of hedge fund industry performance that is engineered to be representative of the overall composition of the hedge fund universe.

Standard Deviation - A measure of the dispersion of a set of data from its mean. The more spread apart the data, the higher the deviation. In finance, standard deviation is applied to the annual rate of return of an investment to measure the investment's volatility.

Skewness - A measure of the asymmetry of a distribution. Qualitatively, a negative skew indicates that the tail on the left side of the distribution is longer than that on the right side, indicating that deeply negative returns tend to be more frequent than deeply positive ones.

Kurtosis - A measure of fatness of the tails of a distribution. The higher the kurtosis, the fatter one or both tails are. Kurtosis is often measured relative to that of the normal distribution by subtracting 3, resulting in what is called excess kurtosis. A positive excess kurtosis then indicates that the distribution at hand has fatter tails than the normal distribution.

Sharpe - A ratio used to measure risk-adjusted performance. The Sharpe ratio is calculated by subtracting the risk-free rate from the annualized return, and dividing the result by the standard deviation of returns.

Drawdown - The peak-to-trough decline during a specific record period of an investment. A drawdown is usually quoted as the percentage between the peak and the trough.

Sterling - This other measure of risk-adjusted performance divides the annualized return by the highest historical cumulative loss.

Sortino - A ratio developed to differentiate between upside and downside volatility, i.e., to provide a risk-adjusted measure of performance without penalizing it for upward price changes. The Sortino ratio is similar to the Sharpe ratio, except it uses downside deviation for the denominator instead of standard deviation.

Correlation - A statistical measure of how one variable changes in relation to another variable. In finance, it measures how two investments move in relation to each other.

Conference Board US Leading Indicator - An index published monthly by the Conference Board used to predict the direction of the economy's movements in the months to come.

Chicago Fed. National Activity - A monthly index designed to gauge overall economic activity and related inflationary pressure.

Volatility - A statistical measure of the dispersion of returns for a given security or market index. It measures the variation of price of a financial instrument over time.

Newedge CTA Index - Newedge CTA Index calculates the daily rate of return for a pool of commodity trading advisors selected from the larger managers that are open to new investment, providing a reliable daily performance benchmark of major CTAs.

Style Drift - The divergence of a fund from its stated investment style or objective.

Alpha - A measure of fund performance that compares the performance of a fund over that of the benchmark index.

National Futures Association - The independent self-regulatory organization for the U.S. futures market. It provides assurance to the public that all firms, intermediaries and associates who conduct business on the U.S. futures exchanges must adhere to the same high standards of professional conduct.