

1/14/18

Timing Allocations to Potentially Enhance Returns

Markham Gross
Founder / Principal / Portfolio Manager
Anderson Creek Trading, LLC

Purpose

The purpose of this study is to discover if past returns at different intervals would have been enhanced or harmed by allocating to a trend-following CTA strategy during drawdowns or following new highs. Does it matter if we allocate during drawdowns or at new highs? Does it matter more or less for different investment time horizons? As a third question I want to know how this information compares if the same practices are applied to the popular S&P 500 (Total Return) Index.

My opinion prior to this study has been that allocating to trend-following CTA drawdowns has the potential to enhance returns. I think it is a topic worth digging a little deeper into, and I am definitely willing to be proven wrong at the beginning of this study.

As with any study we do or with past performance in general it is important to remember that **PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS**. And **THERE IS RISK OF LOSS** in the type of trading we do and we are studying here. Drawdowns are part of any investing strategy. ACT is in a deep drawdown at the time of this study. Although our goal is to compound capital, we expect to endure multiple drawdowns throughout what we plan to be a long history.

While the S&P 500 index and trend following CTAs are two different types of non-correlated strategies, I think the comparison might be useful because the S&P 500 Index is widely followed by the general investing public. The S&P 500 can be easily related to. Trend-following CTA programs use time series momentum (trend) in a wide variety of macro markets. The S&P 500 index is a cross-sectional momentum index or strategy using capitalization weighting across only one macro sector –large cap stocks traded on the NYSE and NASDAQ.

Notes on Data Used

Because Anderson Creek Trading is an emerging CTA, we do not have a long enough track record to use our own return data for this type of study. Track records of several individual trend-following CTAs are used.

Anderson Creek Trading, LLC

930 Tahoe Blvd #802-316
Incline Village, NV 89451
775.298.5083
markham@andersoncreekcta.com
www.andersoncreekcta.com

The CTAs chosen were essentially cherry picked. Other track records are out there, but data was limited to a more manageable and readable level. I attempt to be quite fair in the cherry picking. One is in a significantly larger drawdown than the others as of the end of the data set even though it had exceptional long-term absolute performance. This CTA was picked partially because of the large drawdown it is in during the time of this study. Another CTA has more muted long-term performance and less volatility. Lower volatility not only reduces drawdown, but also returns. Two have long-term performance in the middle of the group. All four are experiencing drawdown as are many trend-following CTAs as of the end of this data set. There was a stronger performing CTA in my original calculations, but I have excluded it because some of its returns are potentially positive outliers at least relative to the other CTAs in this group..

CTAs used are: Hawksbill (Global Diversified Program), Mark J. Walsh (Standard Program), Abraham Trading Company (Diversified Program), EMC (Classic Program). Data for each of these begins in January 1990. Part of the selection process was finding CTAs with long multi-decade track records such as this. Monthly returns are used in this study.

This is the same data set I used in "Performance History and Characteristics of Five CTAs Studied When Developing Anderson Creek Trading's Strategies". Clearly my title writing skills have room for improvement.

Simple data visualizations are often useful when looking for patterns and characteristics in datasets. To this end there are charts to summarize the data. Tables summarizing the data are included as well. My hope is that everything is fairly easy to read and grasp without a whole lot of effort. I removed a lot of extra visuals and tables from the overall study in an attempt to achieve readability.

You will notice lower measurement occurrences for the S&P in some of the tables. This is because the S&P is one index whereas four CTAs were used in the CTA group. Each individual CTA is measured separately. Return measurements are then combined in a group to get our average, minimum, and maximum returns at the specified intervals.

Anderson Creek Trading, LLC

930 Tahoe Blvd #802-316
 Incline Village, NV 89451
 775.298.5083
 markham@andersoncreekcta.com
 www.andersoncreekcta.com

Returns Following Average Drawdowns						
CTA Group, Excluding Top Performing CTA:	3 Mth Return	6 Mth Return	12 Mth Return	24 Mth Return	36 Mth Return	84 Mth (7Year) Return
Average for all:	3.33%	8.12%	14.27%	34.47%	53.08%	144.92%
S&P 500 Total Return Index:	3 Mth Return	6 Mth Return	12 Mth Return	24 Mth Return	36 Mth Return	84 Mth (7Year) Return
Average:	1.27%	1.58%	-0.20%	12.57%	22.47%	97.56%

Returns Following New Equity Curve Highs						
CTA Group, Excluding Top Performing CTA:	3 Mth Return	6 Mth Return	12 Mth Return	24 Mth Return	36 Mth Return	84 Mth (7Year) Return
Average for all:	2.89%	6.87%	6.97%	14.81%	31.74%	108.23%
S&P 500 Total Return Index:	3 Mth Return	6 Mth Return	12 Mth Return	24 Mth Return	36 Mth Return	84 Mth (7Year) Return
Average:	3.12%	6.96%	15.42%	29.60%	47.47%	112.42%

Difference in Returns Following Average Drawdowns vs Returns Following New Highs						
CTA Group, Excluding Top Performing CTA:	3 Mth Diff	6 Mth Diff	12 Mth Diff	24 Mth Diff	36 Mth Diff	84 Mth (7Year) Diff
Diff in Average for ALL	0.45%	1.25%	7.30%	19.65%	21.33%	36.68%
S&P 500 Total Return Index :	3 Mth Diff	6 Mth Diff	12 Mth Diff	24 Mth Diff	36 Mth Diff	84 Mth (7Year) Diff
Diff in Average:	-1.85%	-5.39%	-15.62%	-17.02%	-25.00%	-14.86%

CTA Group Occurences Following Average Drawdown						
Total Occurences:	103	103	99	97	94	80
Positive Returns	54	60	62	80	88	80
% Positive Returns:	52%	58%	63%	82%	94%	100%
Negative Returns:	49	43	37	17	6	0
% Negative Returns:	48%	42%	37%	18%	6%	0%

S&P 500 Total Return Index Occurences Following Average Drawdown						
Total Occurences:	6	6	6	6	6	6
Positive Returns	3	3	3	3	4	6
% Positive Returns:	50%	50%	50%	50%	67%	100%
Negative Returns:	3	3	3	3	2	0
% Negative Returns:	50%	50%	50%	50%	33%	0%

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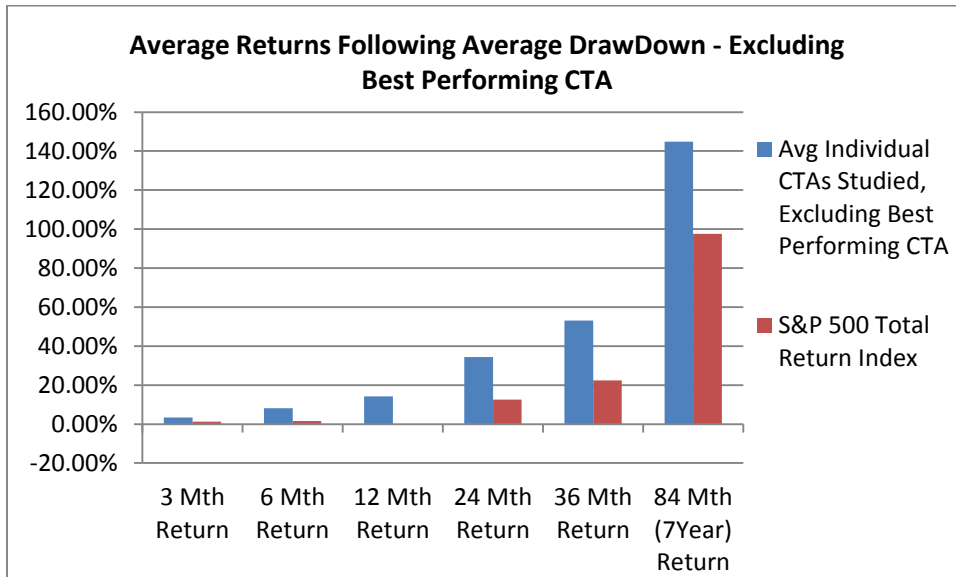
Returns Following Mean of Average and Max Drawdowns						
CTA Group Excluding Top Performing CTA	3 Mth Return	6 Mth Return	12 Mth Return	24 Mth Return	36 Mth Return	84 Mth (7Year) Return
Average for all:	13.15%	21.37%	33.93%	65.04%	89.34%	209.96%
Returns Following New Equity Curve Highs						
CTA Group Excluding Top Performing CTA	3 Mth Return	6 Mth Return	12 Mth Return	24 Mth Return	36 Mth Return	84 Mth (7Year) Return
Average for all:	2.89%	6.87%	6.97%	14.81%	31.74%	108.23%
Difference in Returns Following Mean of Avg and Max Drawdowns vs Returns Following New Highs						
CTA Group Excluding Top Performing CTA	3 Mth Diff	6 Mth Diff	12 Mth Diff	24 Mth Diff	36 Mth Diff	84 Mth (7Year) Diff
Diff in Average	10.26%	14.49%	26.96%	50.23%	57.60%	101.72%
CTA Group Excluding Top Performing CTA Occurrences Following Mean of Avg and Max Drawdown						
Total Occurrences:	36	36	36	34	34	30
Positive Returns	29	29	33	34	34	30
% Positive Returns:	81%	81%	92%	100%	100%	100%
Negative Returns:	7	7	3	0	0	0
% Negative Returns:	19%	19%	8%	0%	0%	0%
S&P 500 Total Return Index Occurrences Following Mean of Avg and Max Drawdown						
Total Occurrences:	2	2	2	2	2	2
Positive Returns	0	0	2	2	2	2
% Positive Returns:	0%	0%	100%	100%	100%	100%
Negative Returns:	2	2	0	0	0	0
% Negative Returns:	100%	100%	0%	0%	0%	0%

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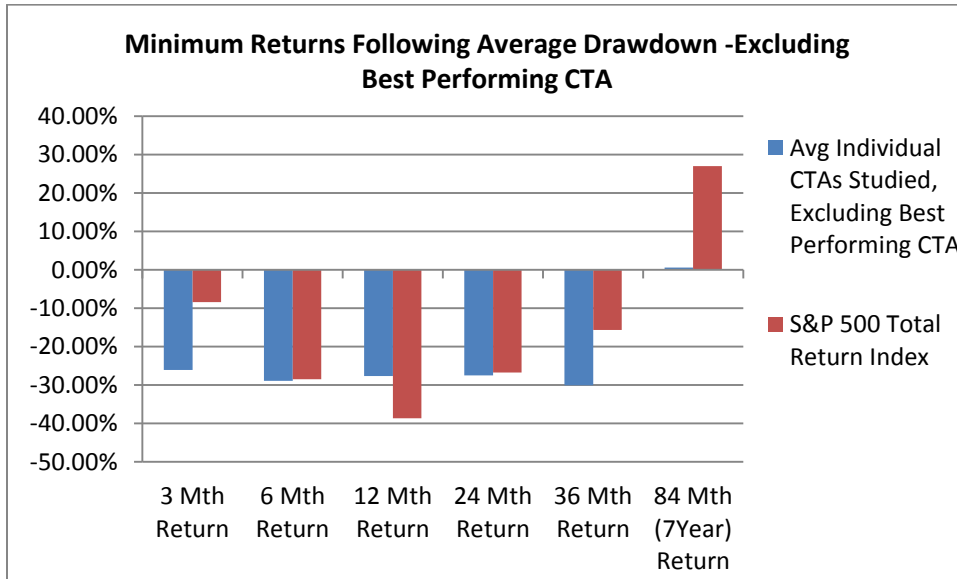
	3 Mth Return	6 Mth Return	12 Mth Return	24 Mth Return	36 Mth Return	84 Mth (7Year) Return
CTA Group Excluding Top Performing CTA Occurrences Following New High						
Total Occurrences:	210	210	210	208	200	188
Positive Returns	101	107	113	126	156	183
% Positive Returns:	48%	51%	54%	61%	78%	97%
Negative Returns:	109	103	97	82	44	5
% Negative Returns:	52%	49%	46%	39%	22%	3%
S&P 500 Total Return Index Occurrences Following New High						
Total Occurrences:	107	104	99	94	89	70
Positive Returns	84	88	91	81	74	70
% Positive Returns:	79%	85%	92%	86%	83%	100%
Negative Returns:	23	16	8	13	15	0
% Negative Returns:	21%	15%	8%	14%	17%	0%

Returns Following Average Historical Drawdowns

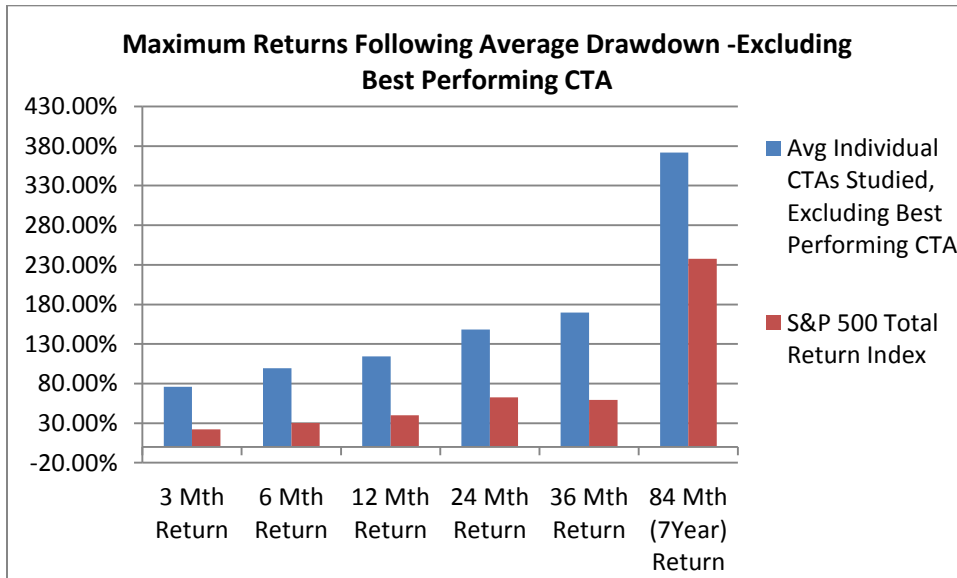


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Note: the min return for 84 months CTAs is there, just hard to see at 0.62%.

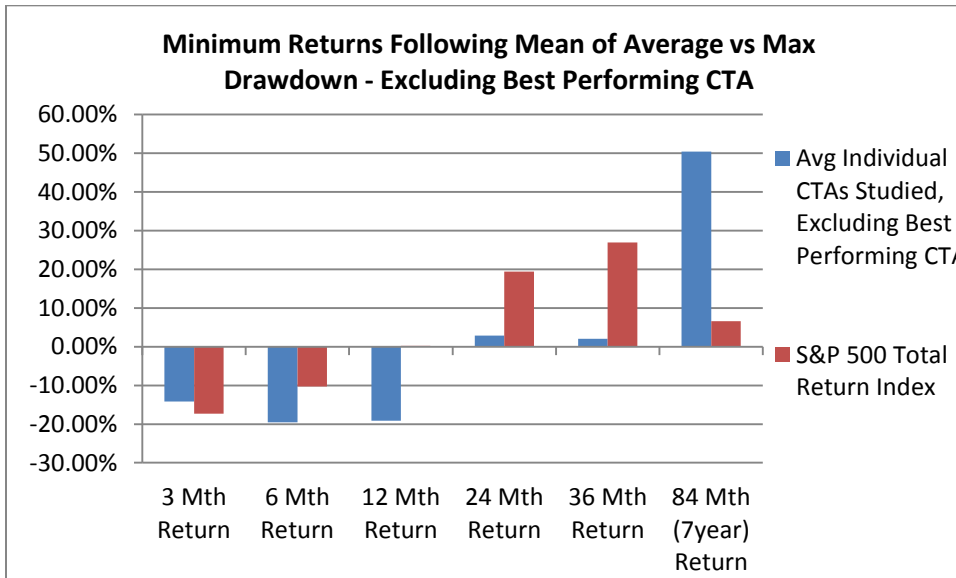
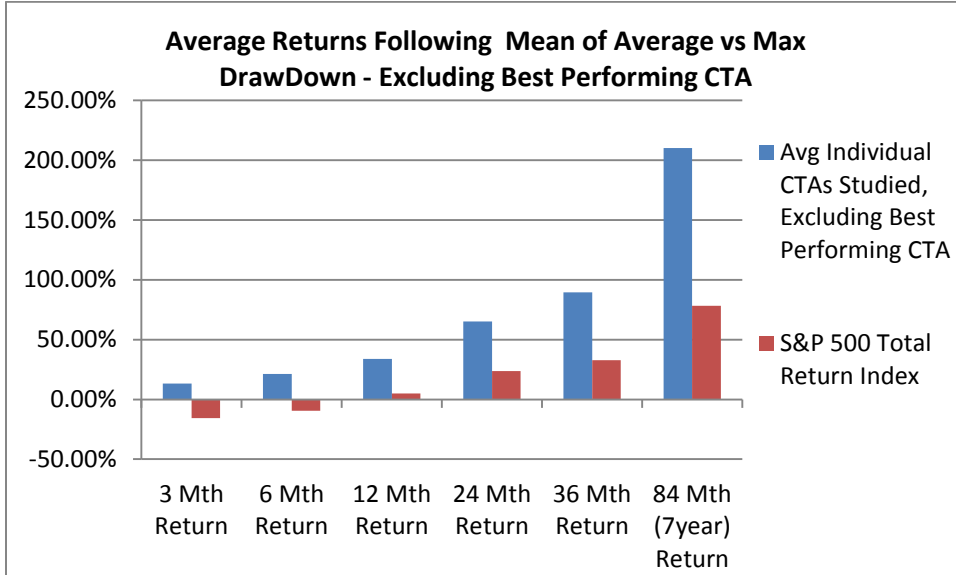


Calculations of a historical average drawdown are not rolling. They are total after the fact, and therefore have hindsight bias. Every time the historical average drawdown for each individual CTA is hit in the historical data set, return measures forward are taken. Each CTA's results are then combined into a group to create average, minimum, and maximum results for the group.

Returns Following Mean of Average Drawdown vs Max Drawdown

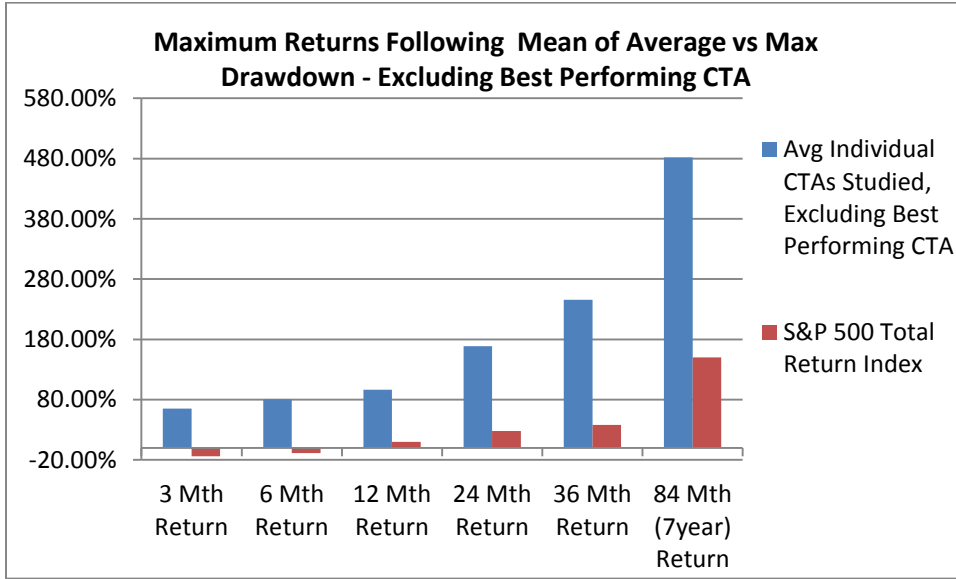
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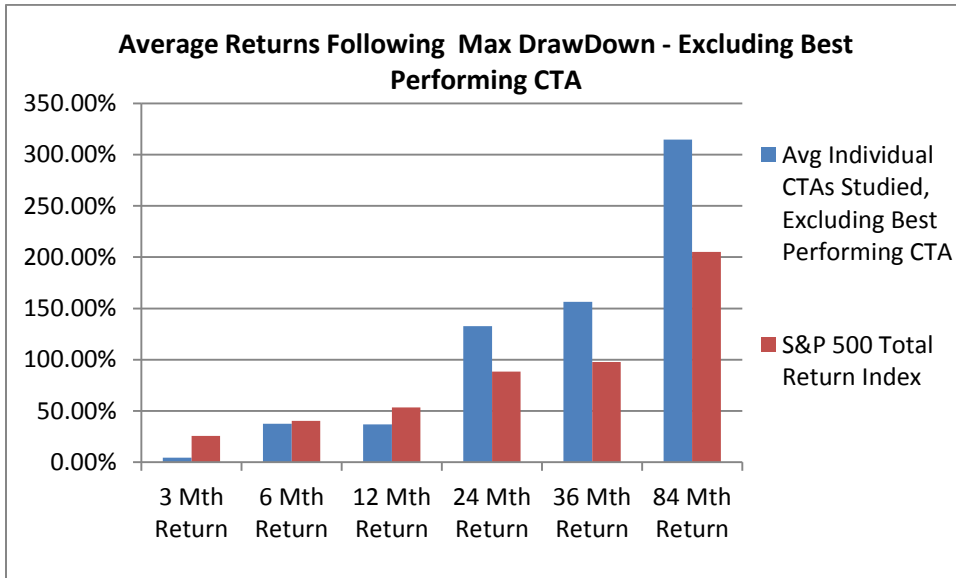


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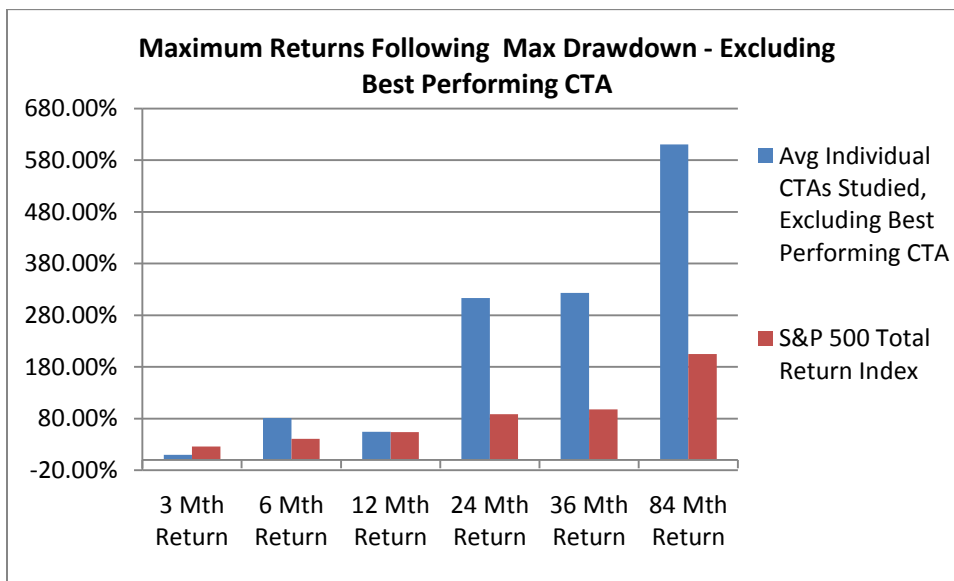
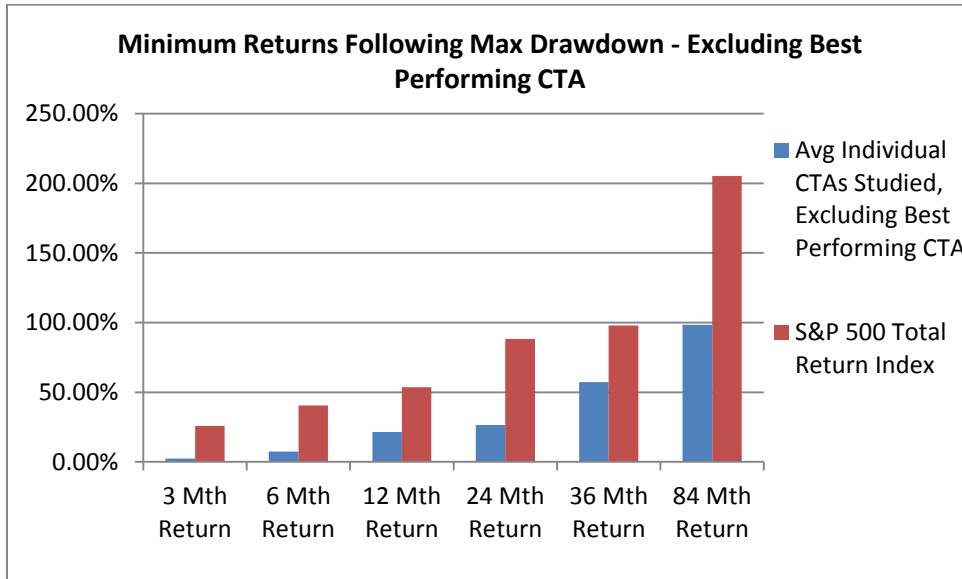


Returns Following Max Drawdown



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 775.298.5083
 markham@andersoncreekcta.com
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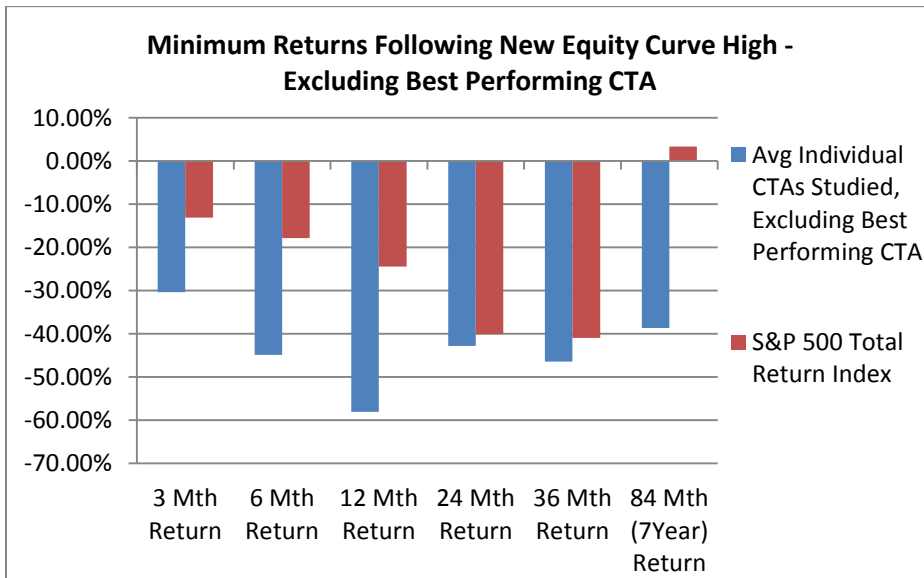
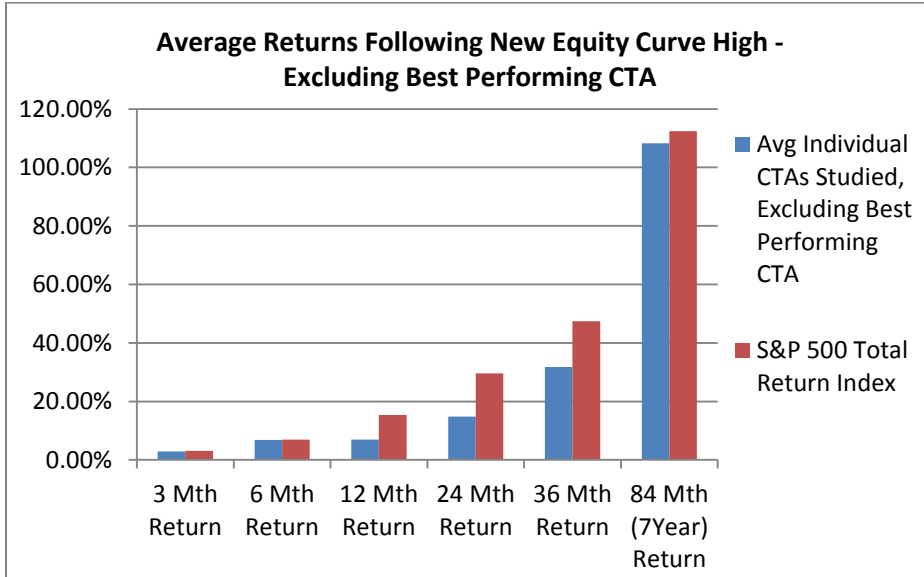


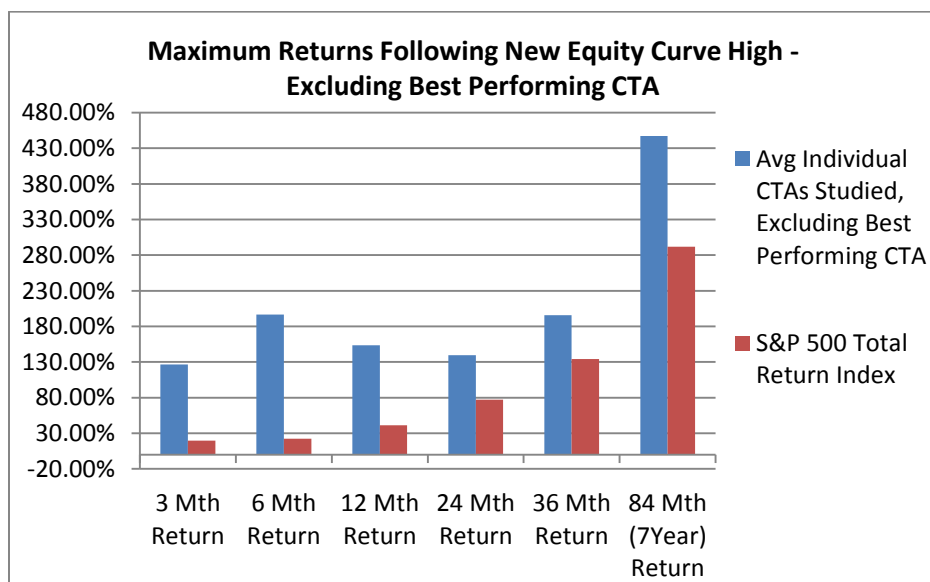
Returns following new equity curve highs

Now we look at returns following new equity curve highs. For each CTA forward returns are calculated every time a new monthly historical equity curve high is reached. Sometimes new highs are reached repeatedly in clumps of one month after the other. Calculations are made each of these months regardless of any clumping or grouping. Resulting data is then combined to create average, minimum and maximum returns for the group. The same process is followed for the S&P 500 Index.

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930 Tahoe Blvd #802-316
 Incline Village, NV 89451
 775.298.5083
 markham@andersoncreekcta.com
 www.andersoncreekcta.com





Conclusions

On average it would have been better to buy trend-following CTA drawdowns rather than new highs between January 1990 and September 2017. Alternatively, it would have been better to buy S&P500 new highs rather than drawdowns between January 1990 and September 2017. I was not at all surprised with the outcome for CTAs, but I was slightly surprised with the S&P 500 results. Results make sense with a little more thought though.

Trending or divergent phases in broad markets seem to ebb and flow historically. Allocating into trend-following CTAs after periods of drawdown prepares investors to potentially participate in the next trending or divergent phase in broad macro markets. Conversely, buying into trend-following CTAs after new equity curve highs possibly reduces potential for participating in continued trending phases. Perhaps because of possibly repeating cycles of trending phases followed by non-trending phases in broad markets, trend-following CTAs seem to display some mean reverting characteristics in their returns.

Buying drawdowns in the trend-following CTA index would be an effort to participate in what appears to be mean-reverting return characteristics of diversified trend-following futures strategies. Assuming a trend-following CTA has been chosen, the data here supports allocating during deep drawdown as a practice.

Buying new highs in the S&P 500 Index would align investors with the trend and the S&P's trending characteristics. The S&P 500 represents one market sector—large cap equities listed on the NYSE or

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NASDAQ. Where this is one market or sector, trend-following CTAs typically trade many diverse markets and sectors. Any one sector or market will display trending characteristics at various periods during which time new highs lead to even higher highs (or new lows to lower lows) for that particular market or sector.

From an allocation standpoint, it continues to be my opinion that trend-following CTA drawdowns should be used as allocation opportunities. Using deeper than average drawdowns for allocation timing might be worthwhile choice based on results in this study. Although average positive longer term results are seen in the trend-following CTAs following new equity curve highs, the returns were not as strong as those following deep drawdowns.

If initial trend-following CTA allocations during drawdown are possible, I believe this to be a good idea. I also believe it to be a good idea to use future deep drawdowns as opportunities to allocate additional investable capital up to the point that is fitting for the investor's overall portfolio.

In my opinion, a minimum three year time horizon is needed for investors to properly consider a trend-following CTA investment. Seven years or longer is probably best. This time horizon is most likely a good rule of thumb for many other investments, including the S&P 500.

The CTA group studied here showed increased likelihood for negative return at shorter time intervals than at longer horizons following allocation. Likelihood for positive returns from the trend-following CTA group increased as investment horizon intervals lengthened.

The lowest seven year return we saw in this admittedly limited group of trend-following CTAs was close to breakeven after measuring from the average drawdown level. Average returns at seven years were much higher. Minimum returns after measuring from the deeper drawdown level were positive at 24 months, again with average returns at that same mark being much higher and positive sooner than the minimum.

Returns for the group of trend-following CTAs in this study after average drawdown levels were positive 52% of the time at the three month mark, 58% of the time at the six month mark, 63% of the time at the twelve month mark, 82% of the time at the twenty four month mark, 94% of the time at the thirty six month mark, and 100% of the time at the seven year mark. I take this as further evidence in favor of a three to seven year or longer time horizon.

Positive return frequencies after our deep drawdown level (mean of average and max drawdown) improve considerably with three and six month returns being positive 81% of the time, twelve month

Anderson Creek Trading, LLC

930 Tahoe Blvd #802-316
Incline Village, NV 89451
775.298.5083
markham@andersoncreekcta.com
www.andersoncreekcta.com

returns being positive 92% of the time, and returns twenty four, thirty six, and eighty four months out being positive for this group 100% of the time.

Positive return frequencies after new highs for this CTA group illustrate that positive returns following new equity curve highs occur less often. While psychological comfort of buying a current winner might be higher, positive returns would be harder to come by after new equity curve highs for the CTAs.

After new highs for the group returns were positive 48% of the time three months out, 51% of the time six months out, 54% of the time 12 months out, 61% of the time twenty four months out, 78% of the time 36 months out, and 97% of the time seven years out. Although frequencies are close to the frequencies following average drawdowns at the beginning and end of the time horizons, there is significant lowering of the positive frequencies in the twenty four and thirty six month marks. Likewise, positive return frequencies after new highs for the CTA group are significantly lower across the board when compared to positive return frequencies following deeper drawdown levels.

The clear takeaway for me is to allocate to trend-following CTA programs during deep drawdown and have a three year or longer investment time horizon when doing so. This might be psychologically challenging for some unpracticed in this area because humans like attaching themselves to the horse that is winning right now. Pain avoidance unfortunately has the potential to decrease investment returns.

Ironically, it appears to be a bad idea to trend follow a trend-following CTA. On the other hand, trend following the S&P 500 Index appears to work fine in this data set.

Risk Disclosure

THE RISK OF LOSS IN TRADING COMMODITIES CAN BE SUBSTANTIAL. YOU SHOULD THEREFORE CAREFULLY CONSIDER WHETHER SUCH TRADING IS SUITABLE FOR YOU IN LIGHT OF YOUR FINANCIAL CONDITION. IN CONSIDERING WHETHER TO TRADE OR TO AUTHORIZE SOMEONE ELSE TO TRADE FOR YOU, YOU SHOULD BE AWARE OF THE FOLLOWING: IF YOU PURCHASE A COMMODITY OPTION YOU MAY SUSTAIN A TOTAL LOSS OF THE PREMIUM AND OF ALL TRANSACTION COSTS. IF YOU PURCHASE OR SELL A COMMODITY FUTURE OR SELL A COMMODITY OPTION YOU MAY SUSTAIN A TOTAL LOSS OF THE INITIAL MARGIN FUNDS AND ANY ADDITIONAL FUNDS THAT YOU DEPOSIT WITH YOUR BROKER TO ESTABLISH OR MAINTAIN YOUR POSITION. IF THE MARKET MOVES AGAINST YOUR POSITION, YOU MAY BE CALLED UPON BY YOUR BROKER TO DEPOSIT A SUBSTANTIAL AMOUNT OF ADDITIONAL MARGIN FUNDS, ON SHORT NOTICE, IN ORDER TO MAINTAIN YOUR POSITION. IF YOU DO NOT PROVIDE THE REQUIRED FUNDS WITHIN THE PRESCRIBED TIME, YOUR POSITION MAY BE LIQUIDATED AT A LOSS, AND YOU WILL BE LIABLE FOR ANY RESULTING DEFICIT IN YOUR ACCOUNT. UNDER CERTAIN MARKET CONDITIONS, YOU MAY FIND IT DIFFICULT OR IMPOSSIBLE TO LIQUIDATE A POSITION. THIS CAN OCCUR, FOR

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Anderson Creek Trading, LLC

930 Tahoe Blvd #802-316
Incline Village, NV 89451
775.298.5083
markham@andersoncreekcta.com
www.andersoncreekcta.com

EXAMPLE, WHEN THE MARKET MAKES A "LIMIT MOVE". THE PLACEMENT OF CONTINGENT ORDERS BY YOU OR YOUR TRADING ADVISOR, SUCH AS A "STOP LOSS" OR "STOP LIMIT" ORDER, WILL NOT NECESSARILY LIMIT YOUR LOSSES TO THE INTENDED AMOUNTS, SINCE MARKET CONDITIONS MAY MAKE IT IMPOSSIBLE TO EXECUTE SUCH ORDERS. A "SPREAD" POSITION MAY NOT BE LESS RISKY THAN A SIMPLE "LONG" OR "SHORT" POSITION. THE HIGH DEGREE OF LEVERAGE THAT IS OFTEN OBTAINABLE IN COMMODITY TRADING CAN WORK AGAINST YOU AS WELL AS FOR YOU. THE USE OF LEVERAGE CAN LEAD TO LARGE LOSSES AS WELL AS GAINS. IN SOME CASES, MANAGED COMMODITY ACCOUNTS ARE SUBJECT TO SUBSTANTIAL CHARGES FOR MANAGEMENT AND ADVISORY FEES. IT MAY BE NECESSARY FOR THOSE ACCOUNTS THAT ARE SUBJECT TO THESE CHARGES TO MAKE SUBSTANTIAL TRADING PROFITS TO AVOID DEPLETION OR EXHAUSTION OF THEIR ASSETS. THIS BRIEF STATEMENT CANNOT DISCLOSE ALL THE RISKS AND OTHER SIGNIFICANT ASPECTS OF THE COMMODITY MARKETS.

YOU SHOULD ALSO BE AWARE THAT THIS COMMODITY TRADING ADVISOR MAY ENGAGE IN TRADING FOREIGN FUTURES OR OPTIONS CONTRACTS. TRANSACTIONS ON MARKETS LOCATED OUTSIDE THE UNITED STATES, INCLUDING MARKETS FORMALLY LINKED TO A UNITED STATES MARKET MAY BE SUBJECT TO REGULATIONS WHICH OFFER DIFFERENT OR DIMINISHED PROTECTION. FURTHER, UNITED STATES REGULATORY AUTHORITIES MAY BE UNABLE TO COMPEL THE ENFORCEMENT OF THE RULES OF REGULATORY AUTHORITIES OR MARKETS IN NON-UNITED STATES JURISDICTIONS WHERE YOUR TRANSACTIONS MAY BE EFFECTED. BEFORE YOU TRADE YOU SHOULD INQUIRE ABOUT ANY RULES RELEVANT TO YOUR PARTICULAR CONTEMPLATED TRANSACTIONS AND ASK THE FIRM WITH WHICH YOU INTEND TO TRADE FOR DETAILS ABOUT THE TYPES OF REDRESS AVAILABLE IN BOTH YOUR LOCAL AND OTHER RELEVANT JURISDICTIONS. THIS COMMODITY TRADING ADVISOR IS PROHIBITED BY LAW FROM ACCEPTING FUNDS IN THE TRADING ADVISOR'S NAME FROM A CLIENT FOR TRADING COMMODITY INTERESTS. **YOU MUST PLACE ALL FUNDS FOR TRADING IN THESE TRADING PROGRAMS DIRECTLY WITH A FUTURES COMMISSION MERCHANT.**

Past results are not necessarily indicative of future results.

Hypothetical Performance Disclosure

The study above includes a combination of multiple CTAs or managers. Also included are hypothetical portfolio combinations created by combining individual CTAs. These combinations and / or indexes while not exactly simulated trading, are hypothetical or simulated portfolio combinations or composites. It would be very unlikely that anyone would have chosen these exact CTA at exactly the time this data set starts. The following disclosure therefore applies where CTAs, CTA indexes or hypothetical portfolio combinations or composites are utilized:

THIS COMPOSITE PERFORMANCE RECORD IS HYPOTHETICAL AND THESE TRADING ADVISORS HAVE NOT TRADED TOGETHER IN THE MANNER SHOWN IN THE COMPOSITE. HYPOTHETICAL PERFORMANCE RESULTS HAVE MANY INHERENT LIMITATIONS, SOME OF WHICH ARE DESCRIBED BELOW. NO REPRESENTATION IS BEING MADE THAT ANY MULTI-ADVISOR MANAGED ACCOUNT OR POOL WILL OR IS LIKELY TO ACHIEVE A COMPOSITE PERFORMANCE RECORD SIMILAR TO THAT SHOWN. IN FACT, THERE ARE FREQUENTLY SHARP DIFFERENCES BETWEEN A HYPOTHETICAL COMPOSITE RECORD AND THE ACTUAL RECORD SUBSEQUENTLY ACHIEVED.

ONE OF THE LIMITATIONS OF A HYPOTHETICAL COMPOSITE PERFORMANCE RECORD IS THAT DECISIONS RELATING TO THE SELECTION OF TRADING ADVISORS AND THE ALLOCATION OF ASSETS AMONG THOSE TRADING ADVISORS WERE MADE WITH THE BENEFIT OF HINDSIGHT BASED UPON THE HISTORICAL RATES OF RETURN OF THE SELECTED TRADING ADVISORS.

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930 Tahoe Blvd #802-316
Incline Village, NV 89451
775.298.5083
markham@andersoncreekcta.com
www.andersoncreekcta.com

THEREFORE COMPOSITE PERFORMANCE RECORDS INVARIABLY SHOW POSITIVE RATES OF RETURN. ANOTHER INHERENT LIMITATION ON THESE RESULTS IS THAT THE ALLOCATIONS DECISIONS REFLECTED IN THE PERFORMANCE RECORD WERE NOT MADE UNDER ACTUAL MARKET CONDITIONS AND THEREFORE CANNOT COMPLETELY ACCOUNT FOR THE IMPACT OF FINANCIAL RISK IN ACTUAL TRADING. FURTHERMORE, THE COMPOSITE PERFORMANCE RECORD MAY BE DISTORTED BECAUSE THE ALLOCATION OF ASSETS CHANGES FROM TIME TO TIME AND THESE ADJUSTMENTS ARE NOT REFLECTED IN THE COMPOSITE.