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A GOOD TIME FOR TREND FOLLOWING ... BUT, THEN AGAIN, IT'S ALWAYS BEEN!

Executive Summary

Trend Following is one of the oldest strategies in the Hedge Fund industry and CTA returns are predominantly captured by a diversified Trend Following (TF) approach applied to four liquid asset classes – equity indices, interest rates, FX and commodities. We have written extensively on the subject of TF over the past 20 years and made the point on many occasions that the strategy has robustly demonstrated itself to be statistically significant; that following trends is a behavioral trait and that as such trends in financial instruments become self-generating and self-fulfilling; and finally that the strategy is not easily “arbitraged away” by a crowded mass of investors.

The empirical strength of the effect generates a level of risk-adjusted returns that is similar to traditional benchmarks albeit with frequent underperformance and infrequent overperformance (a fat right tail) that makes it hard to “buy and hold” for institutional investors (perhaps with the exception of those occasions where performance accelerations occur in sync with market selloffs).

The past few years make us (continue to) believe that it should be held as a mainstay position in institutional portfolios as a diversifier (and hedge) to traditional benchmarks and we remain firmly entrenched in the camp of TF supporters.

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Introduction

One of the archetypal Hedge Fund (HF) strategies is TF, or simply put, buying the winners and selling the losers in a portfolio. The strategy applied to futures on a number of asset classes, typically equity indices, bonds, FX and commodities, can be made to correlate with CTA indices to levels of >85%¹. Our own experience of TF has been built up over the past 30+ years. As much as our alpha products no longer explicitly employ trend following strategies, we are nonetheless proponents of the strategy to be a mainstay of institutional investor portfolios. The level of risk-adjusted returns expected are very much in line with those of traditional investments such as equities and fixed income, with uncorrelated and even hedging returns.

And, yet, the idea of a core TF portion of an institutional portfolio has not managed to gain significant traction.

This observation is probably a result of longstanding behavioral biases that exist in strategy selection. The timescales over which asset allocators judge a style are not long enough to accept the likely flat periods that arise from modest Sharpe ratios². To be in a strategy with higher fees; that is invested in abstract derivatives rather than concrete real assets; that many believe to be underperforming along with the HF industry as a whole, and relative to traditional assets; all represents a significant career risk to allocators³. On top of this, one should note that an equally important behavioral bias exists in favor of strategies that have extended periods of modest positive gains and short bursts of negative returns (fat left tails) that less modest allocators may like to believe they can time. We show that TF has a return profile which is contrarily infrequently accelerating and spending extended periods with not much happening (fat right tails) – contributing to a lack of traction in institutional portfolios.

Our firm began as a CTA/Trend Follower in 1991 and at the start of the 2000s evolved towards a diversified multi-asset shop. This move away from the approach was a statement of a need to diversify rather than of a lack of belief in the performance generated by TF. This view was reinforced in 2013 when we launched a standalone pure TF program that reflected the market move towards a commoditization of the strategy and naturally led to a repricing and a concentration in AUMs towards the biggest names.

2019 saw a number of notable names throwing in the towel⁴ and scaling back on their allocation to TF. As a firm we continued to be staunchly in the camp of believers, and TF, subsequently to the 2019 bifurcation, delivered significant levels of returns⁵. We also witnessed such behavior as the stellar performance of TF through the Global Financial Crisis (GFC) became a distant memory with a barren period of TF underperformance from 2009-13 which prompted analysts and commentators to call for a pull back from CTAs, citing the ‘death’ of the trend. This of course preceded the tremendous performance of 2014 when just about every asset class trended⁶. These occasional accelerations in performance are a feature of the strategy and related to its convex payoff. We argue here that this feature hampers its chances of being chosen in a portfolio when a short-term vision dominates the portfolio allocation process. This behavior also illustrates why trends in markets exist in the first place as investors cannot help themselves but to trend even on the performance of trend followers!⁷

But why should price returns trend anyway? The fact that people are programmed to follow trends seems reasonable. It is the case even that experimental evidence suggests removing the ability to follow trends from individuals creates feelings that can be equated to pain such is the strength of the sentiment⁸. It is our belief that the most likely path to generating trends in markets comes from extrapolative expectations where investors employ a behavioral heuristic that short term

¹ As shown in [‘Explaining hedge fund index returns’](#) where a regression captures a high correlation but also outperforms the SG CTA index by ~4% per year for the same level of volatility. No transaction costs or manager fees are accounted for in the regression. The results of this regression show that the returns of CTAs on aggregate are close to fully captured by TF. For these reasons we tend to use the term Trend Follower and CTA interchangeably

² Interested readers can refer to our paper [‘You are in a drawdown. When should you start worrying?’](#) in which we argue that investors typically underestimate the length and depth of drawdowns of a strategy despite expectations consistent with the Sharpe ratio of the strategy

³ While understandable behaviorally, career risk for allocators unfortunately likely equates to return risk for pension fund retirees!

⁴ See [‘The hedge funds split over following market trends | Financial Times \(ft.com\)’](#) and [‘Hedge fund Renaissance pulls back on hunt for market trends | Financial Times \(ft.com\)’](#)

⁵ The SG CTA index has delivered a return of 33% since mid-2019

⁶ In 2014, the SG CTA index delivered nearly 16%

⁷ Client interest in CTAs is also slowly returning on the back of the good performance in 2022. As a firm we have data that supports the hypothesis that allocators’ interest in our programs usually follows a period of good performance

⁸ See our paper [‘Two centuries of trend following’](#) and all references therein

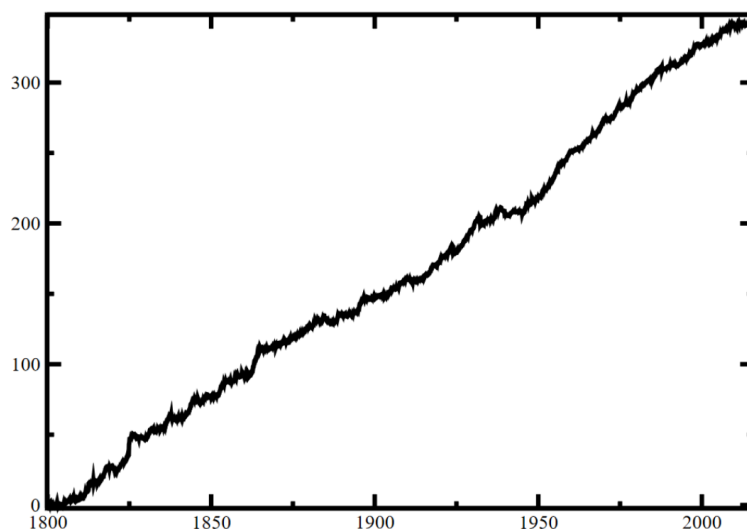
moves up/down in price make people believe the price will continue up/down, which then pushes prices such that this belief becomes self-fulfilling.

The structure of the paper is as follows: we begin with justification of our stance that TF delivers modest positive returns through the evidence of long term backtests, the SG CTA index performance and the use of a HF database to look at individual CTAs. We then illustrate the positive skew of the strategy that we believe holds it back somewhat from being allocated to in size by institutional investors. This skewness is a by-product of the mechanical convexity features of the strategy. We then briefly discuss why we believe TF should continue to perform before concluding by reiterating our belief that TF should form a core “buy and hold” position in all institutional portfolios.

A modest generator of risk-adjusted returns (albeit comparable to traditional benchmarks) ...

In order to justify our claim that TF should be expected to deliver modest risk adjusted returns we describe three pieces of evidence, namely: a backtest over 200 years delivers a robustly positive P&L; the SG CTA index is also robustly positive albeit with a modest Sharpe ratio; and finally, that HF databases point to a long-term Sharpe ratio of ~0.5 when selecting CTAs.

In 2013 we wrote a paper that used 200 years of data to build up a TF P&L⁹ that contributed to our decision to build a standalone TF program. The key result of that paper was that a TF strategy applied to a diversified pool of instruments delivered a modest Sharpe ratio (a measure of risk-adjusted returns) strategy that was nonetheless very statistically significant, see figure 1. What does this mean in layman’s terms? Quite simply that the resulting P&L was highly unlikely to have come from just being lucky in choosing that strategy. The Sharpe ratio in the paper was a long-term measure of ~0.7, which is purely indicative for a number of reasons, namely: no transaction costs were accounted for; no manager fees were included; the instruments traded in the past were not tradeable as they are today; and our portfolio today is much more diversified than that of the backtest in the paper. We argue that this evidence is nonetheless meaningful and not easily dismissed.

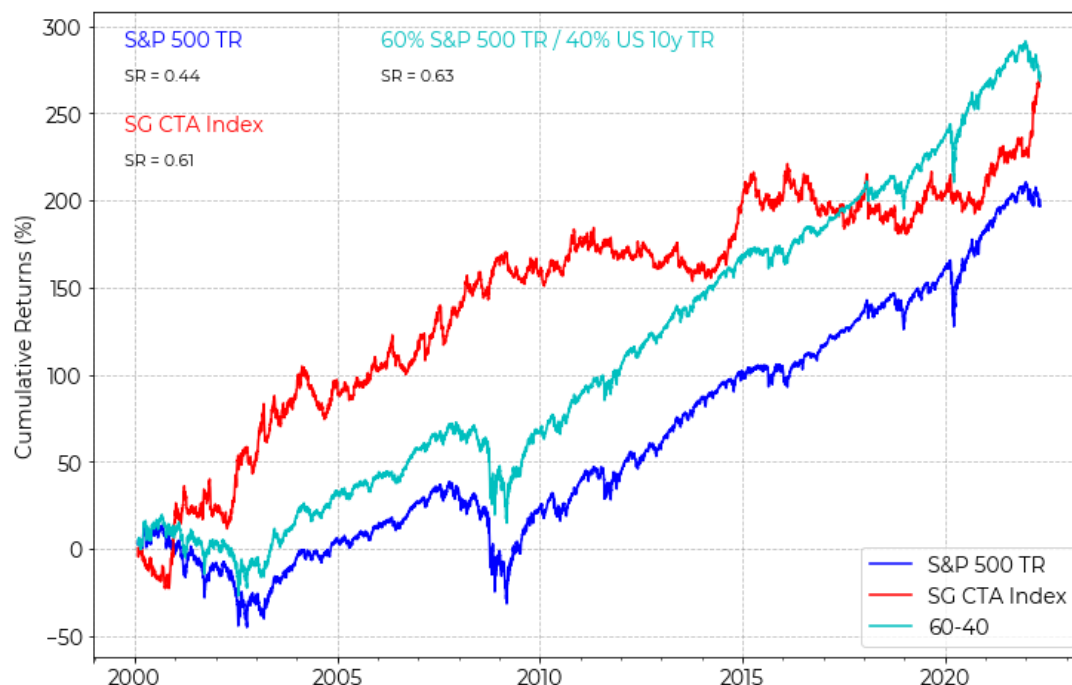


Source: GFD, CFM

Fig.1. The key result from our ‘Two centuries of trend following’ paper is shown in this plot extracted from the paper. The backtest of a TF strategy on all sectors delivered a Sharpe ratio of ~0.7 over 200 years which is highly statistically significant.

⁹ See our paper ‘[Two centuries of trend following](#)’ in which we show, using a multi-asset class generic TF strategy stretching over more than 200 years, the existence of anomalous excess returns generated by TF which is stable across time and asset classes

We have been using the Société Générale CTA index as a benchmark to performance for some time at CFM, and due to the stability of its construction and its performance always considered it the reference to be beaten. This benchmark is made up of twenty of the largest managers (as measured by the AUM) that are broadly diversified and trade primarily futures. It is, as such, a good measure of the returns of the biggest and best CTAs of the moment. This index has realized a Sharpe ratio of 0.61 since its inception in January 2000 – see figure 2.



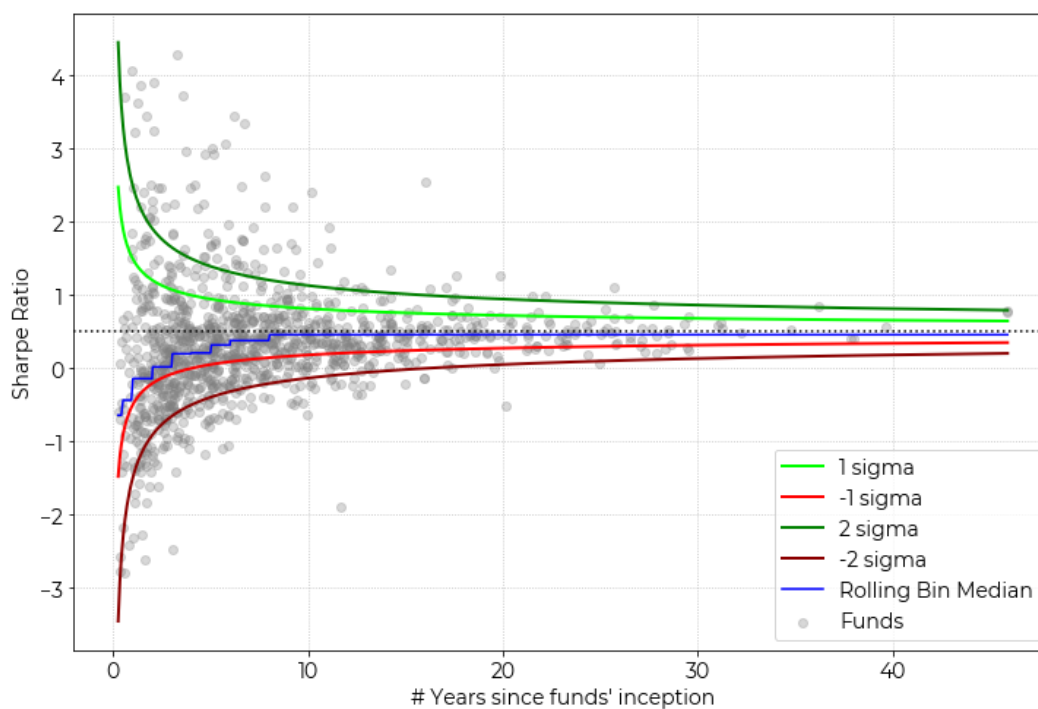
Source: Bloomberg, CFM

Fig.2. The cumulative returns of the SG CTA index, S&P 500 Total Return Index, and a proxy for a 60 Equity – 40 Bonds portfolio¹⁰ since 2000 (the inception date of the SG CTA Index). All indices are set at the same volatility, that of the S&P 500 Total Return (TR) Index. The SG CTA has outperformed the S&P 500 TR on a risk-adjusted basis since 2000, having delivered a Sharpe ratio of 0.61, compared to the 0.44 of the S&P 500 over this time period. The 60/40 index has done particularly well in this period with bonds having benefited from a drift up as rates have drifted down while also providing a hedge for equity downside. As central banks look to rein in inflation by raising rates and the correlation between bonds and equity drifting to positive territory¹¹, the 60/40 portfolio may not provide the same level of performance looking forward!

We also looked at the performance of individual managers in a prominent HF database. We took all funds that are or were self-identified as CTA/managed futures and plotted the realized Sharpe ratio on the y-axis and the length of the track on the x-axis – see figure 3. The mass of points on the left side is only of interest to show that the Sharpe ratios fall approximately within an envelope bounded by the error on the Sharpe ratio. As we go further over and focus only on those CTAs that have been in business for a long period of time, we see a convergence towards a Sharpe ratio of ~0.5.

¹⁰ The proxy is a combination of 60% S&P TR and 40% 10-year TR

¹¹ See our white paper '[Bond-Equity Correlations: Are the time a-changin?](#)' for a discussion of this topic



Source: EurekaHedge, CFM

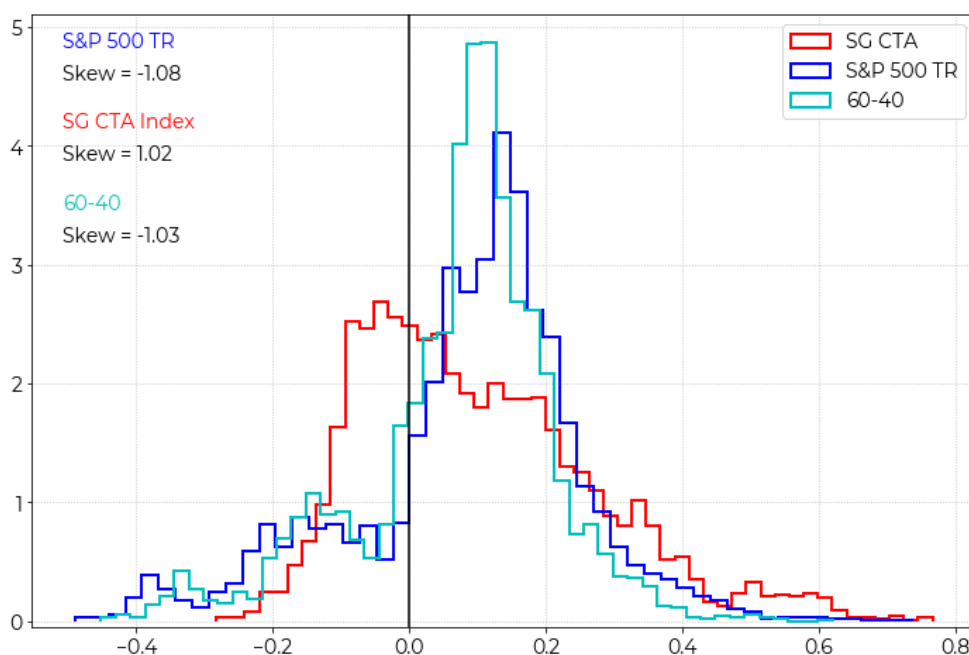
Fig.3. The Sharpe ratios of ~1,200 active as well as defunct Managed Future/CTA funds plotted against the length of track of each of these funds. We also show the rolling median Sharpe ratio of all funds through time in bins of one-year intervals. The median Sharpe ratio across all funds in the earliest stages after launch is negative, but gradually increases with the longevity of funds and converges to a Sharpe ratio of ~0.5.

All this leads us to conclude that expectations of CTAs should be managed and that the level of risk-adjusted returns of TF are positive, but modest, and in line with the level of return one should expect from equity indices and bonds.¹²

¹² Our expectation for equity risk premia is a Sharpe ratio of ~0.3. See our paper ['Risk Premia: Asymmetric Tail Risk and Excess Returns'](#) for further details

... while being positively skewed ...

We have written extensively on the subject of TF convexity and the skewness of returns is a consequence of this¹³. Analogously with options, a convex payoff will always lead to skewness, as the realization of the rare event one is insuring against leads to a large payout, to be contrasted with frequent and small (even negative in the case of paying the premium in an insurance contract and also in paying the premium in buying options) returns. The difference between option and TF convexity is the statistical nature of the TF payout – the move in the underlying has to be as protracted as (or, even better, longer than) the timescale of the TF timescale in order to be in position when the crash worsens, thus generating positive P&L for the strategy. The fat right tails of TF therefore reveal themselves on longer timescales. In order to visualize this, we plot a histogram of annual returns for the S&P, a 60/40 index, and of the SG CTA Index (see figure 4).



Source: Bloomberg, CFM

Fig.4. The skew¹⁴ profile of the SG CTA Index, S&P 500 TR Index, as well as a proxy for a 60 Equity – 40 Bonds portfolio. We compute the skewness of the rolling one-year annualized returns since 2000 (the inception date of the SG CTA index) for each of the three indices. Both the S&P 500 TR and 60-40 proxy exhibit a fat left tailed profile, i.e., a negative skewness, while the SG CTA Index – a widely followed proxy for trend following within the industry – features a positive skew, or a fat right tail. It is interesting to note that despite the visual difference in the distribution of returns the Sharpe ratios of the three strategies are very similar!

¹³ Please refer to our whitepaper ["The Convexity of Trend Following. Protecting your assets but perhaps not as much as you would like"](#) in which we demonstrated the mechanically convex property of TF

¹⁴ Various methods for estimating the distribution profile exist, and we opt here for calculating the skewness as follows:

$$Skew = 6 * \frac{\bar{X} - \tilde{X}}{\sigma}$$

where:

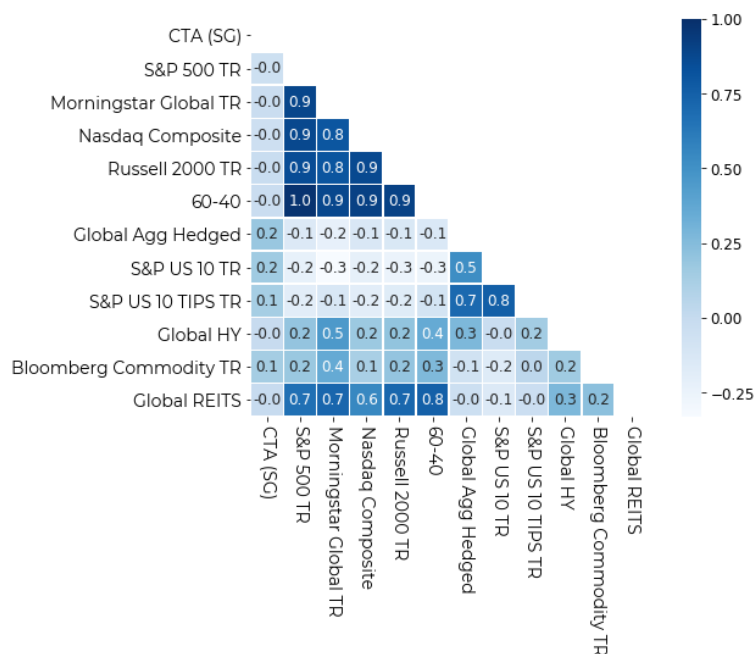
\bar{X} = Mean

\tilde{X} = Median

σ = Standard deviation

... and diversifying and hedging

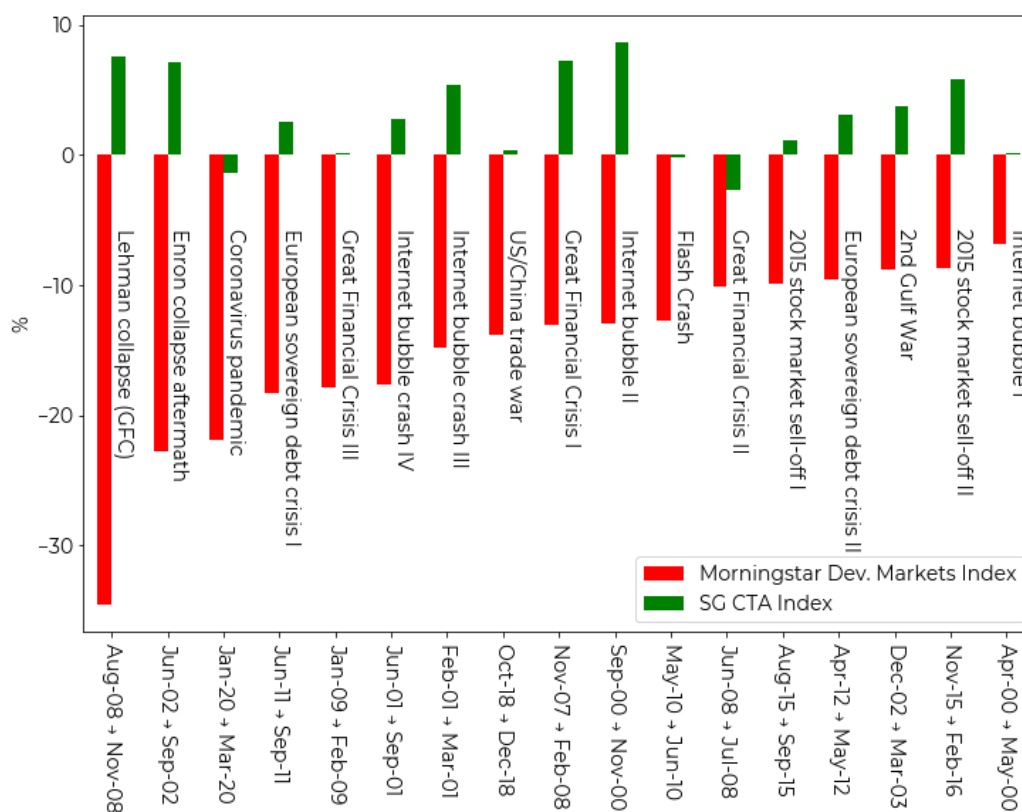
We have established that the P&L of TF provides risk-adjusted returns that are a similar order of magnitude to traditional benchmarks. The correlations with said benchmarks are shown to be weak in figure 5 which means TF is diversifying, mechanically delivering better risk-adjusted returns when TF is combined with traditional portfolios.



Source: Bloomberg, CFM

Fig.5. The correlation of the SG CTA Index and a selection of key asset class benchmarks calculated using daily returns. The SG CTA index is uncorrelated, or a very low correlation with near-all asset classes, including major equity indices.

Not only does one get uncorrelated returns but also, due to the convexity features of TF, the return stream in the biggest negative moves in traditional benchmarks is on average positive. We illustrate this in figure 6.



Source: Bloomberg, CFM

Fig.6. Major equity drawdowns in percent, here proxied by the Morningstar Developed Market Index, with the corresponding returns of the SG CTA Index during the same period. Without exception, the SG CTA Index performed better (acted as a hedge) during periods of the most negative equity returns. In most cases, the SG CTA Index not only acted as a diversifier, but delivered positive returns when equity markets sold-off

As such, the returns of TF are diversifying and hedging, providing a mechanical pick-up in risk-adjusted return and a reduction of drawdowns when running alongside traditional assets in a portfolio.

Conclusion

We have demonstrated that expectations of TF performance should be managed to something in line with holding traditional assets such as equities and bonds. This potential extra return stream, though, is diversifying and even hedging on the biggest events which increases the attractiveness of TF. The positively skewed return stream comes as a consequence of the convex properties of the TF payoff and as such should be seen as a point in its favor rather than counting against it as undisciplined investors await the next acceleration. We have been in the camp of TF believers for many years, and we propose that the strategy should be a permanent fixture in institutional portfolios.

TF was a victim of its own success through the GFC! This period was the wake-up call for investors that realized the convexity of the strategy could help hedge traditional portfolio exposure. Unfortunately, the years that followed 2008 were not kind against a backdrop of unconventional monetary policies employed by central banks that supported traditional asset prices, thus providing a very unflattering benchmark for TF¹⁵. The next acceleration, however, was around the corner for those patient enough to benefit from a surge in TF performance through 2014. Performance following the 2014 acceleration was again underwhelming but in line with expectations given a modest level of risk-adjusted returns and a positively skewed distribution. Only post-Covid was TF once more vindicated as a genuine diversifier with the reflation

¹⁵ Please refer to our paper '[Lucking up. Until beta fails](#)', in which we highlight the unusually strong rally of equities – given the long-term expectations of equity returns having a Sharpe ratio of -0.3 – during the 2010s

trade of 2021/22 pushing commodities and interest rates higher. Impatience in allocating to a fat right tailed P&L leaves a bitter taste - a positively skewed return stream inevitably creates an unflattering P&L for those allocators, buying high and selling low, that only see the barren periods of performance without the accelerations!

The quiet periods of TF underperformance inevitably raise questions as to whether there is a fundamental reason for the unflattering returns. In our experience the leading argument is most often one of overcrowding in the space. We have made the point elsewhere¹⁶ that it is not clear how TF performance is affected by an increase in the number of players exploiting the effect. Given the strategy is not a pricing arbitrage, it is unclear how the P&L is degraded – as more players try to exploit the trend, it is in the interests of investors to try to get into position ahead of those on slower timescales, creating a system of players steadily increasing their frequency of trading and faster trends becoming more and more profitable. This does not however seem to be the case in practice with faster trends actually tending to be steadily less profitable through time with the medium-to long term trend still providing positive P&L. One can maybe also argue that trends on shorter timescales are less likely to develop than previously due to the existence of HFT firms providing liquidity and buffering trade flow on either side of the order book, in some sense stopping short term trends from forming. In any case, also in our experience of TF on shorter timescales, it is safe to say the opportunities that were once fruitful are no longer quite so lowly hanging from the tree.

So, why hesitate in adding TF to your portfolio? It is a statistically significant P&L; while being scalable when applied on medium- to long term timescales and trading predominantly the most liquid futures; and plausible from a behavioral standpoint; it is diversifying even hedging with respect to big moves in equities and inflation¹⁷; and it is not clear it is going away anytime soon. Just make sure it is implemented soundly and you pay reasonable fees for what has now become a commoditized strategy.

The performance of the strategy since the manager bifurcation episode of 2019 can only serve to support the strength of our view that TF should form a core part of institutional portfolios.

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¹⁶ The reader may again refer to our paper ['Two centuries of trend following'](#), section 4.4

¹⁷ See our most recent white paper ['Inflationary regimes and asset class performance'](#), on the subject of hedging inflation with TF

CFM has pioneered and applied an academic and scientific approach to financial markets, creating award winning strategies and a market leading investment management firm.



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