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GAS, POWER, AND THE PAST: WHEN ALTERNATIVE MARKET TRENDS BREAK

Disentangling Sector Tailwinds and Structural Performance Drivers in Alternative vs. Traditional CTA Markets

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Executive summary

This research note provides a quantitative comparison of the performance drivers and structural characteristics of trend-following CTA strategies focused on *alternative* markets versus those focused on *traditional* markets over the period from January 2015 to June 2025.

Over this timeframe, a hypothetical, generic medium-term trend-following strategy applied to a representative universe of 120 less liquid, harder-to-access "Alternative" CTA markets delivered a hypothetical net return of 8.5% p.a. – broadly in line with the net performance of leading Alternative CTA specialists over the same period. For comparison, the annualized return achieved by the SG Trend Index, a widely recognized proxy for the performance of the largest trend-following CTA managers operating in traditional markets, was at 2.2% p.a. over the same period.

This substantial outperformance is largely attributable to the exceptional 2015 – 2022 period. During that time, our estimates indicate that over 40% of the performance differential can be attributed to one single commodity sub-sector – Gas & Power – highlighting the outsized impact that idiosyncratic tailwinds may have in driving excess returns of trend-following.

From January 2023 to June 2025, the performance of Alternative Markets CTAs reversed sharply, as reflected by the hypothetical cumulative return of -15.2% generated by our generic strategy – exceeding the -11.4% cumulative negative performance recorded by the SG Trend Index over the same period. Crucially, this underperformance was broad-based, with no single sector driving the decline. Instead, we believe it reflects a widespread deterioration in trend persistence across the alternative markets universe, a left-tail outcome that while severe, remains well within the range of statistical model expectations.

According to our generic trend-following model we find that alternative markets are unlikely to exhibit superior expected long-term *per-instrument* risk-adjusted trend-following returns once realistic transaction costs are incorporated. From 2015–2025, the median per-instrument hypothetical net Sharpe ratio was 0.11 across 120 alternative

markets, compared to 0.13 across 50 traditional markets, based on the realistic assumption of materially higher implementation costs in alternative markets. In fact, we estimate an average overall strategy implementation cost drag of around 0.20 Sharpe ratio points for alternative markets versus approximately 0.06 for traditional markets.

However, alternative markets stand apart in the significantly lower average pairwise correlations between their trend-following return streams – around 0.05 compared with 0.10 in traditional markets. Incorporating these inputs, a basic theoretical framework suggests that Alternative Markets CTAs could still, over the long term, deliver a portfolio-level Sharpe ratio approximately 0.2 points higher than Traditional Markets CTAs. These excess returns would compensate investors for the increased complexity and reduced liquidity and capacity of Alternative Markets CTAs. The overall benefits are primarily driven by greater universe breadth and stronger internal diversification, rather than superior trends in individual alternative markets. However, these results remain dependent on assumptions about implementation costs and capacity constraints which are much harder to assess for Alternative than Traditional Markets CTAs.

We therefore view the exceptional outperformance of Alternative Markets CTAs over the past decade as exceeding their sustainable long-term return expectation. Nonetheless, the findings reaffirm the strategic rationale for including alternative markets within diversified trend-following portfolios – not for stronger individual market trends, but for the persistent, structural diversification benefits they provide. Realizing these benefits requires tight management and control of implementation costs – supported by robust operational and trading infrastructure – and disciplined investment capacity management that preserves diversification rather than diluting it in pursuit of larger assets under management.

Introduction

Over the past decade, so-called Alternative Markets CTAs have meaningfully outperformed their traditional counterparts. Both Traditional and Alternative Markets CTAs seek to capture the time-series momentum risk premium that is profiting from persistent trends by going long assets exhibiting positive price trends and shorting those with negative price trends. While the underlying investment philosophy is broadly similar, the key distinction lies in the composition of their investment universes. Traditional CTAs typically trade highly liquid, exchange-listed futures, whereas Alternative Markets CTAs operate in less liquid, more fragmented, and harder-to-access markets across commodities, corporate and sovereign credit, regional rates, and emerging market assets.

Between January 2015 and June 2025, the SG Trend Index[1] – a widely recognized benchmark for traditional trend-following CTA strategies – delivered an annualized return of 2.2% p.a., with an annualized volatility of 11.5%. By contrast, our generic trend-following strategy designed to mimic the return and risk profile of the SG Trend Index but applied to a distinct investment universe of 120 alternative markets produced hypothetical *net funded* annualized returns of 8.5% p.a. with comparable volatility of 12.8%[2]. This hypothetical

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[1] The SG Trend Index is designed to track the 10 largest trend-following CTAs (by AUM) which meet a list of criteria (as defined by SG) and be representative of the trend-followers in the managed futures space. The SG Trend Index is equally weighted, and rebalanced and reconstituted annually. The Index is not investable and does not reflect the actual performance of any specific investment product or managed account. Source: Société Générale.

[2] Quantica's generic trend-following model measures trends based on an exponentially weighted moving average with a half-life of one calendar quarter and was designed to approximate the returns and positioning of a representative trend-following benchmark (such as the

result is net of estimated manager fees and trading costs assumptions, which account for the substantially higher implementation costs associated with alternative markets. It closely tracks a hypothetical benchmark constructed with publicly available net performance data of a representative set of eight leading Alternative Markets CTAs over the period 2015 – 2025[3].

This substantial performance differential did not go unnoticed, attracting significant institutional capital, and contributing to the emergence of Alternative Markets CTAs as a distinct subcategory within the broader systematic trend-following landscape. We estimate that the eight largest dedicated Alternative Markets CTA programs managed approximately $25 billion in assets at

Figure 1: Comparative performance of Alternative versus Traditional Markets CTAs

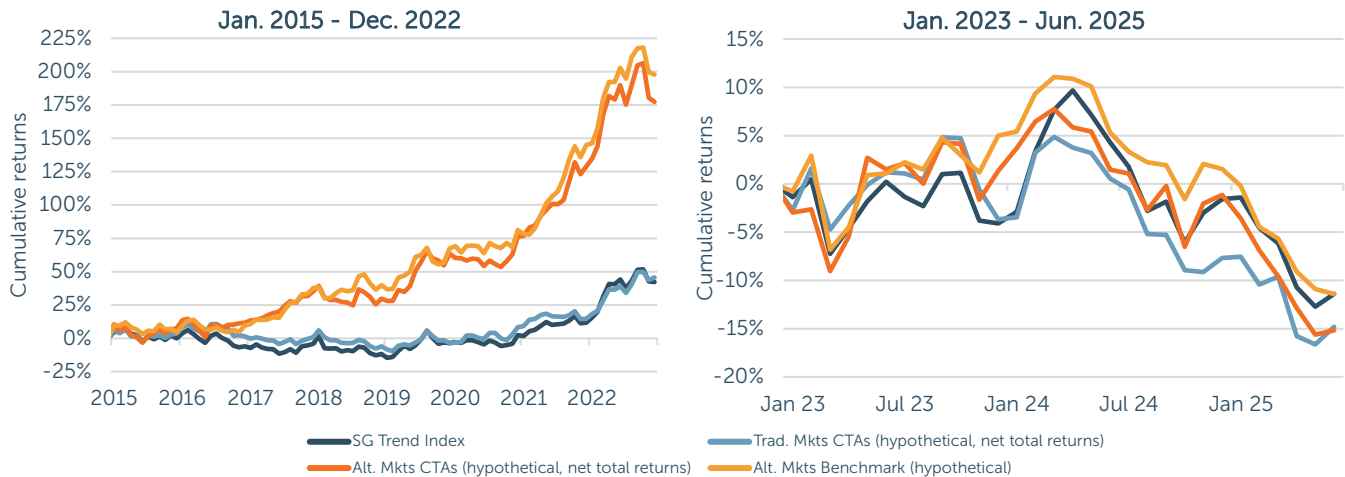| Annualized net returns | volatilities	Jan. 2015 – Dec. 2022	Jan. 2023 – Jun. 2025	Jan. 2015 – Jun. 2025
SG Trend Index	4.5% | 11.6%	-4.7% | 11.2%	2.2% | 11.5%
Trad. Mkts CTAs (net, hypothetical)	4.8% | 10.4%	-6.2% | 11.0%	2.1% | 10.6%
Alt. Mkts Benchmark (hypothetical)	14.7% | 11.5%	-4.8% | 10.9%	9.7% | 11.6%
Alt. Mkts CTAs (net, hypothetical)	13.6% | 12.7%	-6.4% | 12.3%	8.5% | 12.8%

Figure 1: Comparative cumulative returns of the SG Trend Index, Trad. Mkts CTAs (a hypothetical generic trend-following strategy designed to replicate the return and risk profile of the SG Trend Index when applied to a universe of 50 highly liquid futures markets), Alt. Mkts CTAs (the same strategy applied to a distinct investment universe of 120 less liquid and harder-to-access alternative markets), and Alt. Mkts Benchmark (a hypothetical benchmark representing the average performance of 8 of the largest Alternative Market CTA programs). Results are shown across two distinct periods: (left) Jan. 2015 – Dec. 2022 and (right) Jan. 2023 – Jun. 2025. Hypothetical returns of the generic trend-following models are reported net of trading costs derived from Quantica's proprietary market cost models, net of management and performance fees of 2% and 20%, and include a representative return on cash and collateral (70% of the 3-month USD interest rate). The SG Trend Index is unmanaged, does not incur fees, and is not directly investable. The Alt. Mkts Benchmark is a hypothetical portfolio, rebalanced monthly with profits reinvested. It is composed of a set of 8 individual investment programs deemed representative of trend-following strategies that include alternative markets. A leverage is applied afterwards so that the annual realized volatility of the benchmark is 12%. The Alternative Markets Benchmark does not incur fees, is not based on any portfolio managed by Quantica and it is not possible to invest directly into it. The two time periods presented were selected arbitrarily and may not reflect all possible market conditions. Statistics are calculated using monthly returns. For illustrative purposes only. Source: Societe Generale, Quantica Capital. HYPOTHETICAL RESULTS. PLEASE SEE IMPORTANT DISCLAIMERS ON PAGE 3.

SG Trend Index) when applied to traditional markets. For the purpose of analyzing past performance characteristics of Alternative Markets CTAs, the generic trend-following model is applied to a separate investment universe consisting of alternative markets spanning equities, credit, fixed income, currencies, and commodities (excluding China commodity futures), all of which are accessible either through centrally cleared instruments (futures or swaps) or forward markets. The strategy targets a long-term portfolio volatility of 12% p.a. Hypothetical returns are reported net of trading costs derived from Quantica's proprietary market cost models and net of management and performance fees of 2% & 20% and include a representative return on cash and collateral (proxied as 70% of the prevailing 3-month USD interest rate).

[3] To the best of our knowledge, there is currently no widely accepted benchmark index that tracks the performance of Alternative Markets CTAs. As a result, investors seeking to monitor the evolution and effectiveness of this trend-following style must rely either on aggregating performance data from individual managers or on constructing a generic, rules-based trend-following model applied to a representative universe of alternative markets. We have done both approaches in this research. Most Alternative Markets CTA programs did not exist prior to 2015. As such, we begin our simulations in 2015 to align with the emergence and growing institutional relevance of these strategies. We leave it to the reader to benchmark the performance of Quantica's generic Alternative Markets trend-following model against that of representative Alternative Markets CTA managers over the periods discussed in this note.

the end of 2024 – compared to roughly $60 billion tracked by the SG Trend Index[4].

Focusing more narrowly on the period from 2015 to 2022, Alternative Markets CTAs (as proxied by our generic trend-following model) achieved a hypothetical net funded return of 13.6%[5], triple the 4.5% return posted by their traditional counterparts (as proxied by the SG Trend Index), as shown in Figure 1. However, the picture has changed markedly in more recent years. Since early 2023, the market environment has proved challenging for trend-following strategies across both traditional and alternative universes. From January 2023 through June 2025, the SG Trend Index declined by -11.4%. Alternative Markets CTAs were not immune: our representative strategy applied to the alternative universe recorded a hypothetical net performance of -15.2% over the same period.

This recent underperformance prompts several important questions:
- If Alternative Markets CTAs once had a persistent edge, has that edge now eroded?
- Is the recent drawdown merely a cyclical setback, consistent with the inherent nature of trend-following strategies?
- Or has the rapid growth in capital allocated to the space introduced structural frictions – such as liquidity constraints, crowding effects, or elevated execution costs – that now impair the strategy's efficacy?

While the performance of trend-following CTA strategies applied to traditional markets has been extensively studied, there is a surprising lack of research exploring the performance dynamics of CTAs focused on alternative markets. In particular, the drivers behind their strong outperformance relative to traditional trend-

followers between 2015 and 2022, and the contrasting underperformance since, has been underexplored.

In this research note, we analyze the key factors that contributed to the strong relative outperformance of Alternative Markets CTAs during the 2015 – 2022 period, a time when they gained increasing traction among institutional investors. We then turn to the more recent period of underperformance since early 2023 to understand its potential causes and implications. To frame these historical performance patterns in a broader context, we apply a simple and intuitive analytical framework to assess the expected long-term Sharpe ratio characteristics of both Alternative Markets and Traditional Markets CTA strategies. This framework offers a structured lens through which to reconcile theoretical expectations with the empirical performance observed over the past decade.

A Unified Framework for Assessing Trend-Following Across Traditional And Alternative Markets Universes

To isolate the impact of the investment universe on trend-following performance, we apply the same generic trend-following model to two *mutually exclusive* universes:
- A **Traditional Markets** universe, consisting of 50 of the most liquid futures markets across equities, fixed income and rates, currencies and commodities. This includes markets such as S&P 500 futures, 10-year U.S. Treasury futures, silver and cotton futures.
- An **Alternative Markets** universe, consisting of 120 less liquid or "harder-to-access" markets across equities, credit, fixed income and rates,

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[4] Source: Societe Generale, June 2024.
[5] Net of realistic trading costs, management and performance fees of 2% and 20%, respectively.

currencies and commodities. This includes regional commodity contracts, niche financial futures, or centrally cleared swaps, which are typically characterized by higher entry barriers and larger minimum trade sizes. Example markets include North America credit index swaps, Mexican 5-year interest rates swaps, CZKUSD forwards, cocoa, oats, lumber and orange juice futures[6].

It turns out that our generic trend-following model is able to reflect both (1) the returns and risk exposures of industry benchmarks, such as the SG Trend Index – when applied to traditional markets, and (2) the average performance of Alternative Markets CTA programs – when applied to the alternative universe.

This unified bottom-up modelling approach enables a robust and consistent comparison of structural and portfolio-level characteristics of Traditional and Alternative Markets CTAs over the 2015 – 2025 period.

Comparative Risk Allocation Across Traditional and Alternative Markets CTA Universes

We begin by examining how Traditional and Alternative Markets CTA universes differ in their long-term average risk allocation across asset classes. Table 1 presents a comparative breakdown of each asset class's average contribution as a percentage of total portfolio risk for each universe[7].

Exposure attribution by asset classes & commodity sub-sectors	Average % of portfolio risk (realized)		
	Alternative Markets	Traditional Markets	Difference (Alt.-Trad. Markets)
Equities	15%	18%	-3%
Credit	10%	0%	+10%
Fixed Income & Rates	36%	34%	+2%
Currencies & Digital Assets	11%	20%	-9%
Commodities	29%	28%	+1%
Gas, Power, Carbon, Coal	10%	2%	+8%
Grains	5%	6%	-1%
Base Metas & Industrials	8%	3%	+5%
Oil	3%	9%	-6%
Precious	2%	5%	-3%
Soft, Food & Livestock	2%	4%	-2%
Total	100%	100%	0%

Table 1: Comparison of the average percentage of total portfolio risk attributed to each asset class (top), and each commodity sub-sector (bottom) over the January 2015 – June 2025 period, based on hypothetical simulations from a generic trend-following model applied to two mutually exclusive universes: traditional markets and alternative markets. For illustrative purposes only. Source: Quantica Capital.

Fixed income & rates emerge as the dominant contributor in both universes, accounting for approximately one-third of total portfolio risk in both the Alternative and Traditional Markets generic model implementations. Equities also play a stable role, contributing 15% of risk in the Alternative universe and 18% in the Traditional universe[8].

The most pronounced divergences in risk allocation are observed in currencies and oil, which are significantly underrepresented in Alternative Market CTAs (accounting for 11%

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[6] China's onshore commodity futures are often classified as alternative markets. However, we have intentionally excluded them from this analysis due to the evolving nature of market access over the past decade, which makes simulation results difficult to interpret consistently. In addition, implementation costs and operational complexity can vary widely depending on the access route, further limiting their suitability for inclusion in an illustrative research framework.

[7] It should be emphasized that the two investment universes used in this research note – Traditional and Alternative Markets – are intended solely for illustrative and analytical purposes. They are not intended to precisely replicate or to be representative of the actual investment universes used by CTA managers in practice. Rather, they serve as stylized frameworks to highlight structural differences and portfolio dynamics across broad categories of market exposure.

[8] However, the underlying composition differs significantly across both equities and fixed income. In equities, exposure within the alternative markets universe is primarily driven by emerging markets and sector-specific instruments, while traditional CTAs tend to allocate to broad country and regional equity indices. Similarly, in fixed income, the Alternative Markets model encompasses a broader and more granular set of instruments, with notably the inclusion of emerging markets interest rates, which are largely absent from traditional CTA universes. Traditional fixed income exposure is typically concentrated in major developed market (G7) government bond futures, resulting in a narrower representation of global rates risk.

versus 20%, and 3% versus 9% of portfolio risk, respectively). In contrast, sectors such as credit and gas & power feature more prominently in the Alternative universe, both contributing 10% of total risk. These sectors are largely absent from Traditional CTAs, with the partial exception of U.S. natural gas.

Traditional CTAs, by comparison, remain more concentrated in a narrower set of highly liquid macro asset classes[9]. These instruments are widely accessible, and benefit from deep liquidity, making them well-suited for institutional-scale trading with daily liquidity.

Key drivers of Alternative Markets CTA Performance (January 2015 – December 2022)

We now turn to the asset-class and sector-level attribution of relative performance between Alternative and Traditional Markets CTAs over the 2015 – 2022 period, during which Alternative Markets CTAs delivered significantly stronger returns, as shown in Figure 2. It should be noted that all return attributions presented in the following sections are net of realistic[10] trading costs. All results are hypothetical and for illustrative purposes only, as implementation costs – particularly in the case of alternative markets – may vary significantly due to the complexity of trade execution and their higher sensitivity to capacity constraints.
According to our generic trend-following model, the gas, power & carbon sector was the primary contributor to outperformance, explaining more than 4% per annum of the relative return differential over the period.

Base metals & industrials, along with fixed income & rates, also made meaningful contributions, adding 1.5% and 1.8% to the annualized outperformance, respectively. Collectively, these three sectors explain more than 75% of the total performance difference. Additional positive contributions come from grains, credit, and precious metals. In contrast, oil stands out as a material detractor, contributing roughly -0.4% per annum to the relative performance – primarily due to the structurally larger risk allocation to the sector in traditional CTA portfolios. Overall, commodities have been the dominant driver of returns during this period, contributing 50% of total returns in the Alternative Markets model, compared to just 20% in the Traditional Markets model.
In summary, the findings underscore that the historical advantage of Alternative Markets CTAs came from targeted exposures to niche, structurally differentiated markets that are largely absent from traditional CTA portfolios.

Key drivers of Alternative Markets CTA Performance (January 2023 – June 2025)

Next, we compare the asset-class and sector-level performance attribution over the period from January 2023 to June 2025, as shown in Figure 3. This timeframe corresponds to a broad cyclical headwind for trend-following strategies, with an even more acute impact on alternative markets. This marks a sharp contrast to the sustained outperformance in prior years.

The most significant losses for our generic trend-following model since 2023 were concentrated in fixed income & rates, with losses of -6.6% p.a. for

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[9] While some Traditional Markets CTA programs may include limited exposure to less traditional or niche markets, we believe that the vast majority of their returns can be attributed to positions in widely recognized, highly liquid futures markets – those commonly accepted as "traditional" within the industry.

[10] Using our transaction cost assumptions, the net funded total return of our generic trend-following strategy applied to our universe of 120 alternative markets tracks closely a hypothetical average of the returns of a representative set of eight leading Alternative Markets CTAs over the period 2015 – 2025.

Figure 2: Comparative asset class performance attribution for Alternative and Traditional Markets (Jan. 2015 – Dec. 2022)
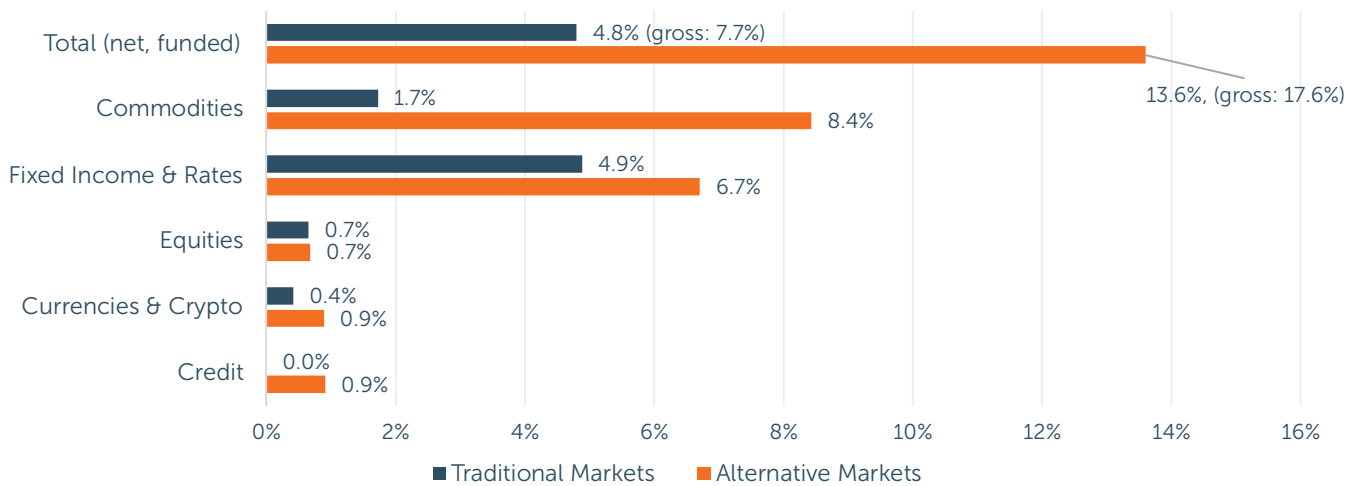
Difference in p.a. performance between Alternative Markets and Traditional Markets (Jan. 2015 – Dec. 2022)
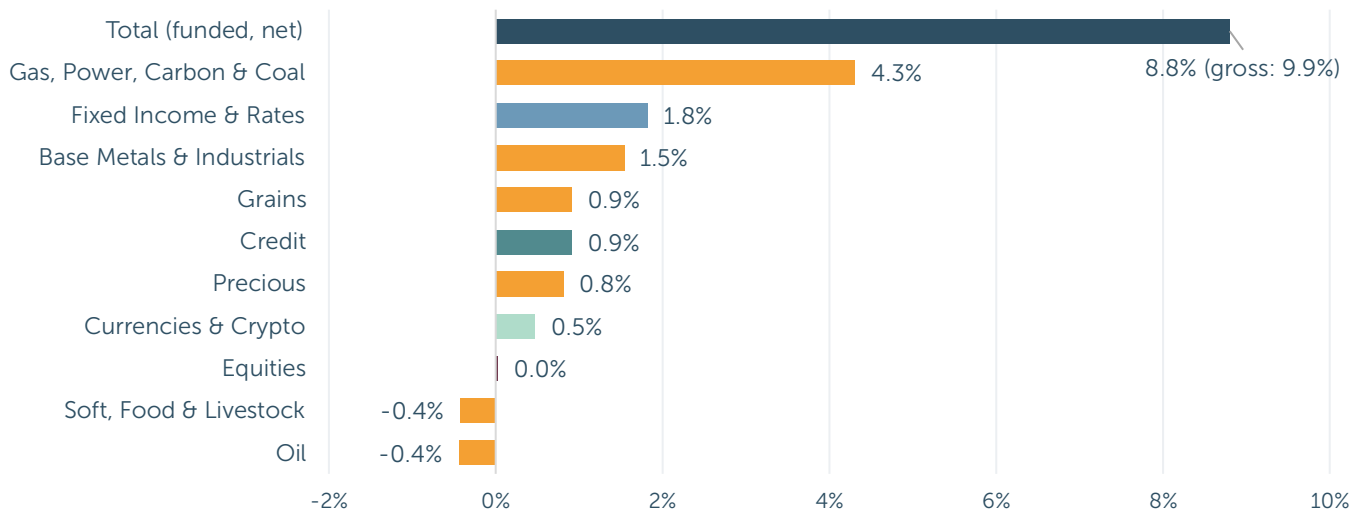

Figure 2: Comparison of absolute (top) and relative (bottom) annualized gross return attribution by asset class and selected commodity sub-sectors for the period **Jan. 2015 – Dec. 2022**. Results are based on a hypothetical generic trend-following strategy designed to mimic the return and risk profile of a typical medium-term trend-following CTA strategy and applied to two mutually exclusive investment universes: traditional markets and alternative markets. Hypothetical attribution returns are reported net of trading costs, as estimated by Quantica's proprietary market cost models, but gross of management and performance fees. Total returns are shown net of management and performance fees of 2% and 20%, respectively, and include a representative return on cash and collateral (proxied as 70% of the 3-month USD interest rate). Gross performance by asset class and sub-sector reflects the cumulative arithmetic returns of their respective instruments, expressed on an annualized basis over the period, meaning they represent the simple sum of period returns annualized over the sample. For illustrative purposes only. Source: Quantica Capital. HYPOTHETICAL RESULTS. PLEASE SEE IMPORTANT DISCLAIMERS ON PAGE 3.

alternative markets and -5.9% for traditional markets. Outside of credit, there were no materially profitable trends across asset classes that Alternative Markets CTAs were able to exploit. Indeed, nearly all asset classes contributed negatively to performance in both universes over the past 2.5 years.

A particularly notable divergence is observed within the commodities complex. Over the recent period, Alternative Markets CTAs experienced a hypothetical -0.2% per annum contribution from commodities, making a sharp reversal from the strong performance between 2015 and 2022, when commodity markets contributed an annualized return of 8.4%.

This shift highlights a marked deterioration in the ability of trend-following to capture profitable opportunities within alternative commodity
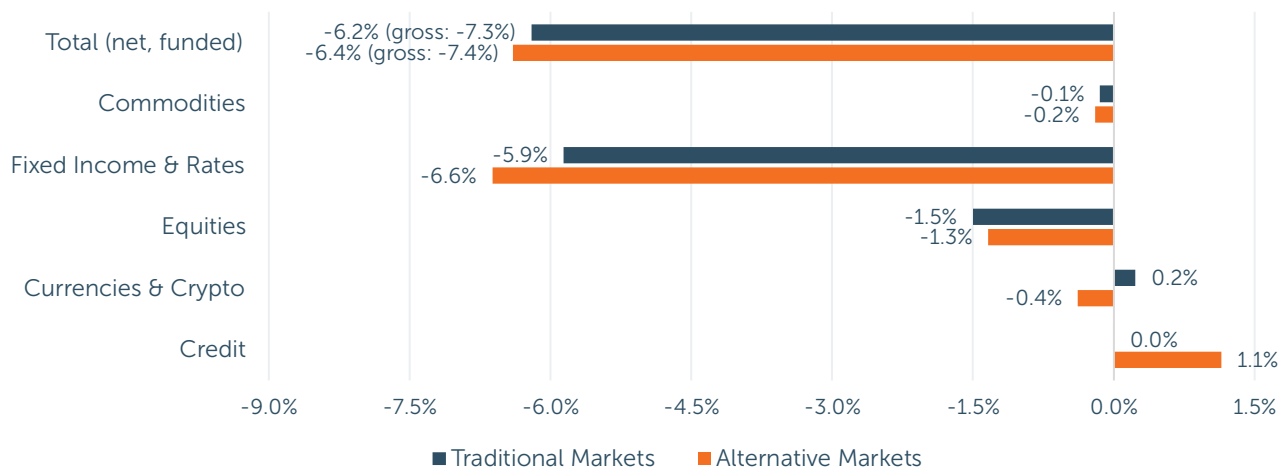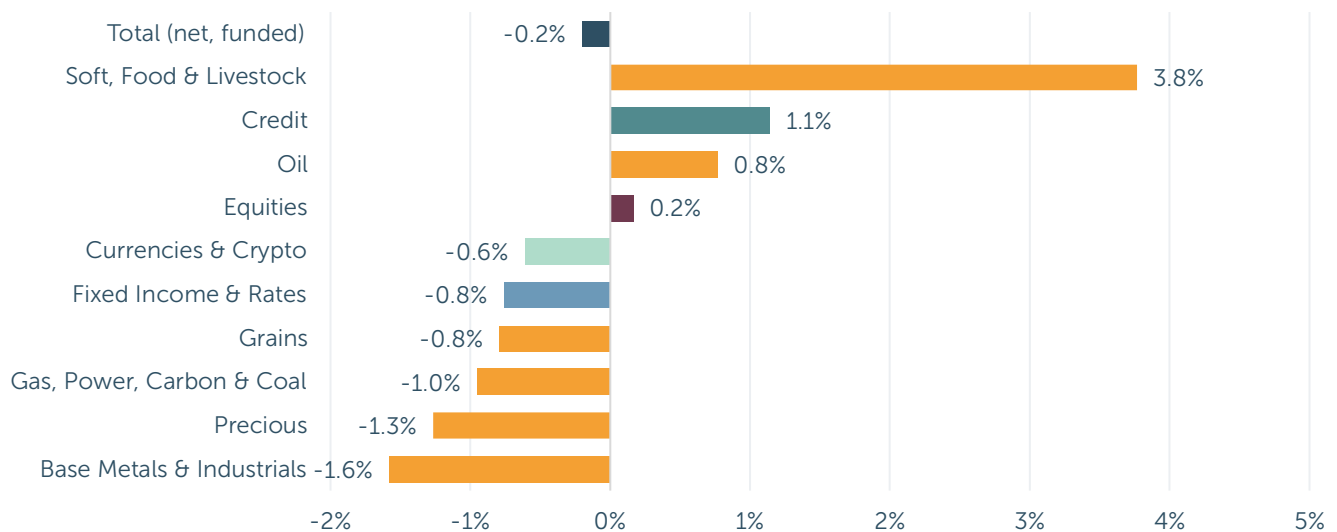
Figure 3: Comparative asset class performance attribution for Alternative vs Traditional Markets (Jan. 2023 – Jun. 2025)

Difference in p.a. performance between Alternative Markets and Traditional Markets (Jan. 2023 - Jun. 2025)

Figure 3: Comparison of absolute (top) and relative (bottom) annualized gross return attribution by asset class and selected commodity sub-sectors for the period Jan. 2023 – June. 2025. Results are based on a hypothetical generic trend-following strategy designed to mimic the return and risk profile of a typical medium-term trend-following CTA strategy, applied to two mutually exclusive investment universes: traditional markets and alternative markets. Hypothetical attribution returns are presented net of trading costs, as estimated by Quantica's proprietary market cost models, but gross of management and performance fees. Total returns are shown net of management and performance fees of 2% and 20%, respectively, and include a representative return on cash and collateral (proxied as 70% of the 3-month USD interest rate). Gross performance by asset class and sub-sector reflects the cumulative arithmetic returns of their respective instruments, expressed on an annualized basis over the period, meaning they represent the simple sum of period returns annualized over the sample. For illustrative purposes only. Source: Quantica Capital. HYPOTHETICAL RESULTS. PLEASE SEE IMPORTANT DISCLAIMERS ON PAGE 3.

markets. Whereas a single commodity sub-sector accounted for nearly half of the relative outperformance of Alternative versus Traditional Markets CTAs during the 2015 – 2022 period, the subsequent underperformance since 2023 has not been driven by a single dominant theme.

Rather, it has been broad-based, with losses extending across most asset classes and sectors, reflecting a widespread decline in trend persistence and opportunity throughout the alternative markets universe.

A Simple Analytical Framework to Quantify Long-Term Sharpe Ratio Expectations for Trend-Following Strategies

To estimate the expected long-term Sharpe ratio for a trend-following strategy applied to a given investment universe (e.g. Traditional or Alternative), we draw upon an analytical framework first introduced in our December 2021 Quarterly Insights note[11].

In fact, the excess risk-adjusted return (or Sharpe ratio), before manager fees, of an equal-weighted portfolio of n correlated (trend-following) return streams can be expressed as a function of only three variables:

- the number n of portfolio constituents,
- the average cross-correlation $\bar{\rho}$ of the constituents' (trend-following) return streams, and
- the average Sharpe ratio $\bar{s}$ of the n trend-following return streams:

    $\bar{s} = \frac{1}{n}\sum_{i=1}^{n} \text{Sharpe}(R_i)$, where R_i denotes the (trend-following) return stream of instrument i

$$\text{Sharpe}\left(\frac{1}{n}\sum_{i=1}^{n} R_i\right) = \bar{s} \cdot \frac{1}{\sqrt{\bar{\rho} + \dfrac{1-\bar{\rho}}{n}}} = \bar{s} \cdot m(\bar{\rho}, n).$$

The Diversification Multiplier $m(\bar{\rho}, n)$ only depends on the number of universe constituents and the average cross-correlation of their *trend-following return* streams and measures the pure diversification benefit obtained from adding instruments to the universe[12].

Using this simple formula, the expected net excess returns before manager fees that a trend-following strategy may achieve when applied to a given investment universe can be computed by empirically estimating only two key variables:

1. the average per-instrument Sharpe ratio, and
2. the average pairwise correlation $\bar{\rho}$ of the trend-following returns across the universe, which allows to compute the multiplier $m(\bar{\rho}, n)$.

To estimate these two variables for the Traditional and the Alternative CTA investment universe, we again apply our proprietary, generic medium-term trend-following model.

Alternative Markets Do Not Show Higher Individual Trend Profitability Compared to Traditional Markets

We begin by examining the distribution of *per-instrument trend-following Sharpe ratios* within each investment universe. Figure 4 shows the empirical distributions for individual instruments across the Alternative and Traditional Markets universes, estimated over the full 2015–2025 period, both gross and net of the assumed implementation costs.
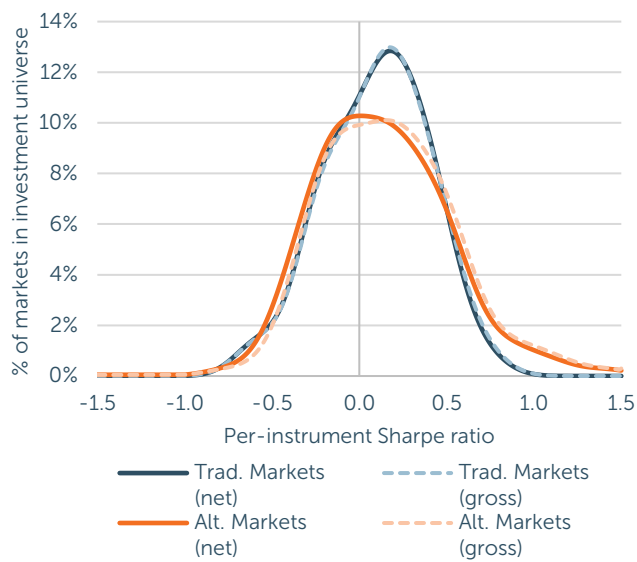
Looking first at the gross results, alternative markets have historically exhibited markedly stronger profitable trends, with an average per-instrument Sharpe ratio of 0.18 compared to 0.12 for traditional markets. When realistic implementation costs are incorporated, however, this advantage narrows substantially. Based on investment capacities that are far more restrictive for alternative markets, our internal cost model assumptions reduce the per-instrument Sharpe ratio by roughly 0.05 for alternative markets (from 0.18 to 0.13), versus only 0.02 for traditional markets (from 0.12 to 0.10).

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[11] *The value of diversification in trend-following*, Quantica Quarterly Insights, December 2021.
[12] The following two extreme scenarios may be highlighted:
- If $\bar{\rho} = 0$, then the formula reduces to $\bar{s} \cdot \sqrt{n}$ and we see that the Sharpe ratio can grow without bounds, proportionally to the square root of the number of instruments.
- If instead all the constituents are perfectly correlated, i.e. $\bar{\rho} = 1$, (or if $n = 1$), the multiplier $m(\bar{\rho}, n) = 1$, and the portfolio Sharpe ratio is equal to $\bar{s}$, and there is no diversification benefit at all.

Figure 4: Distribution of per-instrument Sharpe ratios

Figure 4: Comparative empirical distribution of per-instrument Sharpe ratios of a generic trend-following strategy across Alternative and Traditional market universes over the January 2015 – June 2025 period. Sharpe ratios are shown both gross and net of implementation costs, but gross of any management and performance fees. The generic trend-following strategy is designed to mimic the net return and risk profile of a typical CTA, applied to traditional and alternative markets, respectively. For illustrative purposes only. Source: Quantica Capital. HYPOTHETICAL RESULTS. PLEASE SEE IMPORTANT DISCLAIMERS ON PAGE 3.

Per-instr. net TF Sharpe ratios	Trad. Markets (net)	Trad. Markets (gross)	Alt. Markets (net)	Alt. Markets (gross)
#markets	50		120	
Avg	0.10	0.12	0.13	0.18
Std Dev	0.29	0.29	0.37	0.37
Min	-0.59	-0.58	-0.75	-0.74
25% Quartile	-0.14	-0.12	-0.14	-0.11
Median	0.13	0.15	0.11	0.17
75% Quartile	0.30	0.32	0.36	0.40
Max	0.72	0.74	1.42	1.44

Beyond the average levels, the shape of the distribution also differs meaningfully between the two universes. A closer look at the left side of the distributions shows that a larger proportion of instruments in the Alternative universe generated notably negative Sharpe ratios – 47 out of 120 markets (approximately 39%) compared with 34% in the Traditional universe.

At the same time, the distribution for alternative markets displays a fatter and longer right tail relative to traditional markets, suggesting that a

subset of alternative instruments delivered exceptionally high Sharpe ratios. This dynamic was particularly evident in sectors such as gas & power, which contributed disproportionately to the outperformance of Alternative Markets CTAs during the favorable cycle 2015 – 2022.

Taken together, these findings do not imply that more esoteric and less liquid markets do consistently offer better trend characteristics net of implementation costs on an individual basis. Hence, the risk-adjusted outperformance from Alternative Markets CTAs must instead come from the other independent key factor in the framework: a lower average cross-correlation among the trend-following return streams of the underlying instruments.

Structurally Lower Pairwise Correlations in Trend-Following Returns Across Alternative Markets

Figure 5 reveals several important insights into the empirical correlation structure of both raw market returns and hypothetical trend-following returns. The results shown are based on average risk-weighted pairwise correlations, calculated across instruments in the Traditional and Alternative Markets universes, respectively, and applied separately to *price returns* and to *trend-following returns*.

First, the absolute correlations of raw market price returns are consistently higher than those of trend-following returns. This highlights a fundamental structural feature of trend-following strategies: they are able to deliver diversification even in environments where the underlying assets exhibit higher correlations.

Figure 5: Evolution of the average empirical correlations for instrument returns and simulated trend-following returns for alternative and traditional markets (Jan. 2015 – Jun. 2025)

Figure 5: Risk-allocation-weighted average pairwise correlations across instruments for both market returns and trend-following returns, across both traditional and alternative markets universes from January 2015 to June 2025. Correlations for market returns show the absolute Pearson correlation, so that a strong inverse relationship (e.g. -0.8) is treated the same as a strong positive one (+0.8), highlighting the magnitude of co-movement irrespective of direction. Correlations for trend-following returns show the signed Pearson correlation, preserving the sign to distinguish true hedges (negative values) from co-movement risk (positive values). Correlations are calculated on 3-day log-returns, using an exponential moving average with a decay factor of 0.98. For illustrative purposes only. Source: Quantica Capital. HYPOTHETICAL RESULTS. PLEASE SEE IMPORTANT DISCLAIMERS ON PAGE 3.

Avg TF return correlations	Alt. Markets	Trad. Markets	Δ Alt Mkts - Trad. Mkts
Avg	0.05	0.10	-0.05
Std Dev	0.02	0.03	
Min	0.02	0.04	-0.02
25% Quartile	0.04	0.08	-0.04
Median	0.05	0.10	-0.05
75% Quartile	0.06	0.12	-0.06
Max	0.15	0.18	-0.03

Second, *trend-following returns* within the Alternative Markets universe exhibit consistently lower pairwise correlations than those in the Traditional Markets universe.

Over the past decade, the average pairwise correlation of trend-following returns across alternative instruments has hovered around 0.05, compared with approximately 0.10 for traditional instruments, a relationship that has remained remarkably stable over time. Similarly, the average pairwise trend-following return correlation *advantage* of alternative markets has consistently fallen within a range of -0.025 to -0.075, averaging -0.05 over the period.

This finding carries important implications: less liquid or more difficult-to-access markets generate consistently less correlated trend-following return streams, while more liquid, widely followed instruments exhibit stronger co-movement. This enhanced diversification benefits, which are independent of implementation costs, are important to understand the enhanced risk-adjusted performance at the portfolio level, as we will illustrate in the last section of this note.

To verify the accuracy of our basic theoretical framework, we show the empirical results for our generic trend-following model applied to both the Traditional and Alternative Markets universe in Table 2.

Jan. 2015 – Jun. 2025	Avg per-instr. TF SR	Avg. instr. TF return correl.	Theoretical strategy SR	Simulated gross SR
Trad. Mkts	0.10	0.10	$\bar{s} \cdot m(\bar{\rho} = 10\%, n = 50) = 0.29$	0.29
Alt. Mkts	0.13	0.05	$\bar{s} \cdot m(\bar{\rho} = 5\%, n = 120) = 0.54$	0.79

Table 2: Theoretical and simulated long-term gross Sharpe ratios over the period Jan. 2015 – June 2025 for a generic trend-following strategy designed to mimic the return and risk profile of a typical CTA, applied to two mutually exclusive investment universes: traditional and alternative markets. The theoretical Sharpe ratio of an equal-weighted portfolio of n correlated return streams is expressed as a function of three variables: the average per-instrument Sharpe ratio $\bar{s}$, and the average cross-correlation $\bar{\rho}$ of the constituents' trend-following returns, and the number of instruments n. Hypothetical theoretical and simulated Sharpe ratios are reported net of trading costs, as estimated by Quantica's proprietary market cost models, but gross of any management and performance fees. Source: Quantica Capital. HYPOTHETICAL RESULTS. PLEASE SEE IMPORTANT DISCLAIMERS ON PAGE 3.

The Sensitivity of Implementation Costs and Diversification Benefits on the Relative Performance of Alternative vs. Traditional Markets CTAs

In line with the empirical results for the period January 2015 to June 2025, let's assume an average per-instrument Sharpe ratio of 0.10 (net of implementation costs) and an average pairwise correlation of trend-following returns of 0.10 across the 50 markets in our Traditional Markets universe. According to the above diversification formula, we can easily calculate an expected Sharpe ratio of 0.29 (excluding management and performance fees). This quite closely matches both the realized returns of the SG Trend Index (before manager fees), and the hypothetical returns of our generic trend-following model applied to traditional markets over the past 10 years.

To assess the sensitivity of the outperformance potential of Alternative Markets CTAs with respect to implementation costs and the correlation benefits, we apply the explicit approximation formula and vary both the average Sharpe ratio differential and the average correlation differential between alternative and traditional markets trend-following returns. It is important to note that implementation costs directly impact the average instrument trend-following Sharpe ratios, whereas the average cross-correlations are independent of implementation costs.

In order to compute a reasonably realistic long-term expectation for the future, we set the base scenario for the expected average net trend-following Sharpe ratio at 0.15 for both traditional and alternative markets. This is slightly above the empirical estimates over the past 10 years but reflects the rather below-average trend opportunities of this more recent period compared to reasonable long-term expectations. Figure 6 illustrates the expected Sharpe ratio advantage for Alternative Markets CTAs for a

Figure 6: Alt. Markets CTA Sharpe Sensitivity to Pairwise Correlations and Per-Instrument Sharpe Ratios differentials
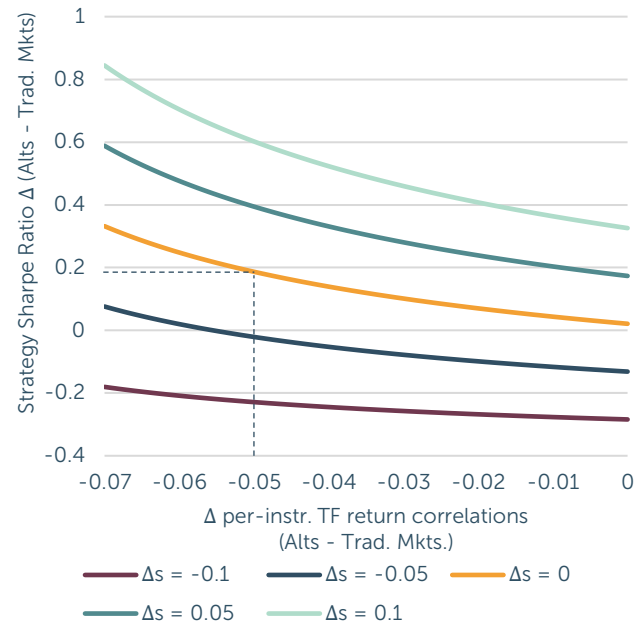
Figure 6: Modeled Sharpe ratio differential between a generic trend-following strategy applied to the **Alternative Markets universe (120 markets)** and the same strategy applied to the **Traditional Markets universe (50 markets)**. Results are shown as a function of differences in average per-instrument net Sharpe ratio (Δs) and average pairwise correlation of trend-following returns ($\Delta \rho$) between the two universes. **Baseline assumptions for the Traditional Markets universe are a per-instrument net Sharpe ratio of 0.15 and an average pairwise correlation of 0.10, implying a portfolio Sharpe ratio of 0.44 (net of trading costs, gross of manager fees).** The generic trend-following strategy is designed to mimic the net return and risk profile of a typical CTA, applied to traditional and alternative markets.

The theoretical Sharpe ratio of an equal-weighted portfolio of n correlated return streams is expressed as a function of three variables: the average per-instrument Sharpe ratio $\bar{s}$, and the average cross-correlation $\bar{\rho}$ of the constituents' trend-following returns, and the number of instruments n. Sharpe ratios are reported net of realistic trading costs, but gross of any management and performance fees. For illustrative purposes only. Source: Quantica Capital. HYPOTHETICAL RESULTS. PLEASE SEE IMPORTANT DISCLAIMERS ON PAGE 3.

decreasing average cross-correlation advantage from -0.07 to 0 under this scenario. The results are shown for five different average Sharpe ratio differentials, ranging from +0.1 to -0.1.

Assuming -0.05 average pairwise correlation advantage of trend-following returns for alternative markets ($\Delta \rho$=-0.05, as indicated by empirical evidence, see Figure 5), the results imply an expected Sharpe ratio improvement of 0.19 –

raising the portfolio Sharpe from 0.44 to 0.62. However, the sensitivity to implementation costs that directly affect the average per-instrument Sharpe ratio assumptions is material. Slightly higher costs that would reduce the average per-instrument trend-following Sharpe ratio from 0.15 to 0.10 (reflected in the Δs=-0.05 scenario) can already fully offset the diversification benefit. Conversely, more efficient trade execution (Δs = +0.05) delivers an additional strategy Sharpe ratio gain of 0.20.

From Past Empirical Evidence to Forward Expectations: The Case for Alternative Markets CTAs

These results align with historical evidence. Over 2015 – 2025, the simulated gross Sharpe ratios (after trading costs, but before manager fees) for our generic trend-following strategy were 0.29 in Traditional Markets and 0.79 in Alternative Markets – a difference of 0.50. This outperformance exceeds both our base case assumption (Δs = 0) and the empirical estimate (Δs = +0.03) for Δρ = -0.05. This suggests that the past decade was unusually favorable for trend-following in alternative markets, largely driven by rare and extraordinary sector-specific trends that likely elevated returns above both their long-term average and long-term expectations.

Conversely, the past 2.5 years have been unusually challenging for alternative and traditional markets trend-following strategies, due to the absence of sustained trends and constrained upside, and this period remains within the left tail of statistically expected outcomes.

In summary, while the profitability of trend-following strategies, both at the individual market level and across portfolios, can fluctuate significantly over shorter time horizons, the analysis confirms that the recent "winter" period for trend-following in alternative markets does not diminish the strategic rationale for their inclusion in a diversified CTA allocation.

Crucially, the more stable structural features of alternative markets have remained intact. Pairwise correlations between trend-following returns across instruments have remained low, and in some instances, even below their long-term averages. These correlations have also remained consistently lower than those observed in traditional markets. This persistence reinforces the view that the long-term opportunity set in alternative markets remains robust. The reward for trading harder-to-access and less liquid markets lies in their ability to enhance portfolio diversification, rather than in consistently delivering higher Sharpe ratios at the single-instrument level. We believe that, for institutional allocators seeking to maximize diversification and enhance portfolio-level risk-adjusted returns, Alternative Markets CTAs remain a valuable and complementary source of differentiated trend exposure – even during periods of cyclical underperformance. Realizing this potential, however, requires an efficient operational and trading infrastructure to enable cost-effective execution and disciplined investment capacity management that preserves a liquidity-unbiased deployment across the full market universe – i.e., avoiding the reallocation of capital toward more liquid markets at the expense of capacity-constrained markets merely to accommodate larger AUM – so as to fully capture the diversification benefits of alternative markets[13].

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[13] A more detailed examination of the theoretical link between trend-following diversification benefits, investment capacity, and individual market liquidity constraints, based on a commodity-focused universe, can be found in a previous publication, *When Trend-Following Hits Capacity*, Quantica Quarterly Insights, March 2025.

Conclusion

Over the past decade, trend-following in alternative markets has proven to be a powerful source of both performance and diversification. A generic medium-term trend-following strategy applied to a broad universe of alternative markets delivered a hypothetical Sharpe ratio significantly higher than comparable strategies focused on traditional markets. These hypothetical results closely match the realized out-performance of specialist Alternative Markets CTA programs over the 2015 – 2025 period.

Our analysis indicates that this exceptional outperformance was largely driven by strong, sustained trends in very specific market segments. Most notably, we estimate the gas & power commodity sub-sector contributed nearly 40% of the outperformance relative to traditional trend-following programs during 2015 – 2022.

While our empirical results support the view that Alternative Markets CTAs should be able to outperform Traditional Markets CTAs over the long-term, the theoretical framework demonstrates that this expectation is largely grounded in the structurally lower average pairwise correlations among trend-following return streams within the alternative universe – typically around 0.05 lower than in traditional markets. For our generic medium-term trend-following strategy applied to a representative universe of 120 alternative markets, empirical evidence justifies a long-term Sharpe ratio improvement of approximately 0.20 points – a magnitude that, while more modest than the levels observed in historical outperformance, remains meaningful and can compensate investors for the increased complexity and reduced capacity of Alternative Markets CTA programs.

We believe that the strong outperformance achieved by Alternative Markets CTAs between 2015 and 2022, while impressive, should be viewed as an exception rather than a baseline expectation. Although alternative markets have historically exhibited attractive average per-instrument Sharpe ratios before implementation costs, our analysis finds no evidence that they should consistently deliver higher risk-adjusted returns than traditional markets once realistic cost assumptions are incorporated. These costs are materially higher in alternative markets, with an estimated per-instrument drag of roughly 0.05 Sharpe ratio points, compared to roughly 0.02 for traditional markets. As a result, we consider a conservative long-term baseline assumption of a 0.15 net Sharpe ratio per instrument for both traditional and alternative markets to be realistic for a generic medium-term trend-following model.

Crucially, the diversification characteristics and benefits of alternative markets are independent of implementation costs and remain consistent, with pairwise trend-following return correlations meaningfully lower than in traditional, more liquid markets. Despite weak performance in the past 2.5 years, we do not view this as indicative of a structural regime change: trend-following returns at the instrument level have historically been volatile and inherently unpredictable in the short-to-medium term. Provided implementation costs are tightly controlled – requiring robust operational and trading infrastructures – and investment capacity is managed with discipline to avoid diluting diversification benefits, we conclude Alternative Markets CTAs will continue to offer a valuable, complementary, and differentiated source of trend-following exposure within institutional portfolios.

Index Definitions

The **SG Trend Index** is designed to track the 10 largest trend following CTAs (by AUM) which meet a list of criteria (as defined by SG) and be representative of the trend-followers in the managed futures space. The SG Trend Index is equally weighted, and rebalanced and reconstituted annually. The Index is not directly investable. Source: Société Générale.

The **Alternative Markets Benchmark** (or **Alt. Mkts Benchmark**) is a hypothetical portfolio, rebalanced monthly with profits reinvested. It is composed of a set of eight individual investment programs deemed representative of trend-following strategies that include alternative markets. As the monthly returns data for each constituent is not always available from the same dates, the target weights for each constituent evolve over time, so that the Alternative Markets Benchmark is consistently equal weighted between each constituent for which the data is available. A leverage is subsequently applied such that the long-term annual realized volatility of the constructed benchmark is 12%. The Alternative Markets Benchmark does not incur fees, is not based on any portfolio managed by Quantica and it is not possible to invest directly into it. Performance data may be inaccurate and is unlikely to correspond to an investor's actual return. Source: Quantica Capital.

Since 2003, Quantica Capital's mission has been to design and implement the best possible systematic trend-following investment products in highly liquid, global markets. To the benefit of our investors and all our stakeholders.

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