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OCTOBER 2022

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SYSTEMATIC STRATEGIES

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INTRODUCTION

HedgeNordic is the leading media covering the Nordic alternative investment and hedge fund universe. The website brings daily news, research, analysis and background that is relevant to Nordic hedge fund professionals from the sell and buy side from all tiers.

HedgeNordic publishes monthly, quarterly and annual reports on recent developments in her core market as well as special, indepth reports on "hot topics".

HedgeNordic also calculates and publishes the Nordic Hedge Index (NHX) and is host to the Nordic Hedge Award and organizes round tables and seminars.

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Editor´s Note…

Winter is Coming

Winter is coming! A glimpse to the calendar will be a better indicator than the outside temperatures in this, so far, mild autumn of 2022. Chances are, it will be yet another winter with the Covid pandemic having a grip on us. For Europe, certainly, it will also be a winter overshadowed by concerns about a steady, affordable gas and electricity supply.

The list of concerns goes on: we have war in Europe, soaring inflation, supply chain disruptions, ongoing de-globalization, Brexit, record bankruptcies and the (threat of) poverty. And then there are other ones, too: climate crisis, the threat of hunger and starvation, the shift to radical political extremes. And the list goes on.

Uncertainty about the future, anxiety and fear of what is to come this winter and beyond lies in human nature. Decision making under uncertainty and fear (or greed, for that matter) is not a good advisor. The reflex for "flight or fight" may have kept us alive as individuals and as a species for hundreds of generations in the face of danger. But fear is not a good advisor when trading financial markets. We actually describe a lot of typical, behavioral errors with terms involving fear, or metaphors painting the picture (the fear of missing out, catching a falling knife…)

It may be these situations dominated by a confederacy of problems that manifest the beauty of systematic approaches to investment and trading. A sober, rules-based, orderly and calm procedure describing pre-drafted action and reaction plans that will answer most of the "what ifs?"

Trading Systems follow pre-defined rules when trading rather than giving in to educated guesses or feelings, with systematic trading helping to avoid the risks associated with human emotions.

One advantage of trading systems is that they can be tested, and backtested, much can be simulated to help optimize procedures and parameters for both a relatively normal trading environment and those where shocks or black swan events spin the wheel.

It seems timely then that in this edition of HedgeNordic's special report series we take a deep dive into systematic trading. This publication starts off with "An Update on a Contemporary Evaluation of Key Alternative Investments" by Dan Rizzuto and Linus Nilsson.

With the Lynx Program enjoying one of its best years since launching in the early 2000s, Martin Källström of Lynx Asset Management then explains how "Lynx Stays True to Main Objective" of delivering strong returns with a negative correlation to equities in risk-off environments. With trend-following "Gaining Momentum," Man AHL's Graham Robertson seeks to answer the question of "Where Next for Trend-Following?" by questioning whether recent positive performance is just predicted on continued worries around inflation and weakness in traditional assets.

Nicolas Mirjolet, the CEO of Zurich-based Quantica Capital, sees some evidence of Trend Following being "A Regime-Agnostic Strategy" where there is no long-term link between the macro climate and returns. Gernot Heitzinger and Joseph Waldstein of Austrian CTA manager SMN conclude that "If It Ain't Broke, Don't Fix It" as their SMN Diversified Futures Fund clocked in an impressive gain of 85 percent over the rolling 36 months after a tough decade for the strategy.

Harold de Boer of Transtrend discusses the discretionary and systematic elements of their trading approach by asking the question of "Does the Captain Still Fly?," while NorQuant's Thomas Nygaard lays out the advantages of "Taking Emotion out of the Equation" for their ETF-focused asset class momentum strategy. To improve the performance of trend-following strategies in environments with abrupt changes in market momentum, Lars Wind has launched "The Wavebreaker," a quantitative trend-following strategy combined with a systematic asset allocation strategy complemented by discretionary macro overlays.

In "Systematic Credit: Accessing Another Asset Class," Irena Siyi Xiong from Arabesque IA discusses the challenges of building and applying a systematic model to credit instruments. Kerim Celebi from Brummer & Partners then describes how 2022 so far has been "A Year of Crisis Alpha for Brummer Multi-Strategy" as the fund's solid performance in 2022 has been driven, to a large extent, by systematic trend-following strategies.

In "Danske's Quest for True Alternative Risk Premia," the Quant and Overlay team at Danske Bank Asset Management headed by Jasper Riis explains how a newly-launched hedge fund combines carry strategies harvesting alternative risk premia with defensive strategies that protect the portfolio against significant drawdowns. Richard Murray, the CEO of Swedish digital assets investment firm Hilbert Capital, introduces their new investment product offering lower-risk exposure to the crypto market by "Harvesting the Crypto Vol." Cliff Asness of AQR wraps up the publication with "The Raisons d'être of Managed Futures," where he presents a detailed study of how "so many managers bucked the trend that was supposed to be your friend."

Kamran Ghalitschi
PUBLISHER, HEDGENORDIC

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By Dan Rizzuto, CFA and Linus Nilsson, CFA

An Update on A Contemporary Evaluation of Key Alternative Investments

„…the average 24-month rolling correlation of CTAs to equity showed some variability but remained mostly low, consistent with long run expectations.“

OVERVIEW

In our September 2021 article (HedgeNordic Systematic Strategies, 2021) we sought to evaluate CTAs, Risk Premia, and Hedge Funds in a manner that demonstrated some potentially less understood or under-appreciated attributes for these investment sectors. We compared these alternative sectors to public and private equity, and to cryptocurrency in the context of absolute and relative performance, and correlation. We hoped to reinforce the importance and benefits of actively managed alternative investment strategies.

One year hence, markets and geopolitical circumstances have changed dramatically. And importantly, uncertainty across most markets has increased along with a seemingly universal diminution of confidence in future investment outcomes and securities valuations.

Herein we update some of our key analyses to reflect more recent circumstances and provide additional context to these alternative investment strategies.

CHANGES ABOVE… AND BENEATH THE SURFACE

This article is extracted from a larger report we've produced recently. In that larger piece, we revisit the now well-documented drawdowns across equity sectors and cryptocurrency markets and the concurrent outperformance of macro and CTA strategies in 2022. Here, we concentrate our note on certain critical observations that continue to be underemphasized in current alternative investment discussions.

In our original report we observed CTAs demonstrating important attributes (absolute return, low correlation, and positive skew) vis a vis equity-dominated portfolios. Noting that the positive return attribution from CTAs can be episodic, the first half of 2022 was one of those episodes. Risk Premia saw a smaller pick up in returns and Hedge Funds were in the red, consistent with the sector's dependency on equity market risk factors.

In Figure 1 we observe alpha (in the context of Fama French plus momentum factor framework) for CTAs, Risk Premia, and Hedge Funds. Alpha from CTAs has continued to expand from the time of our

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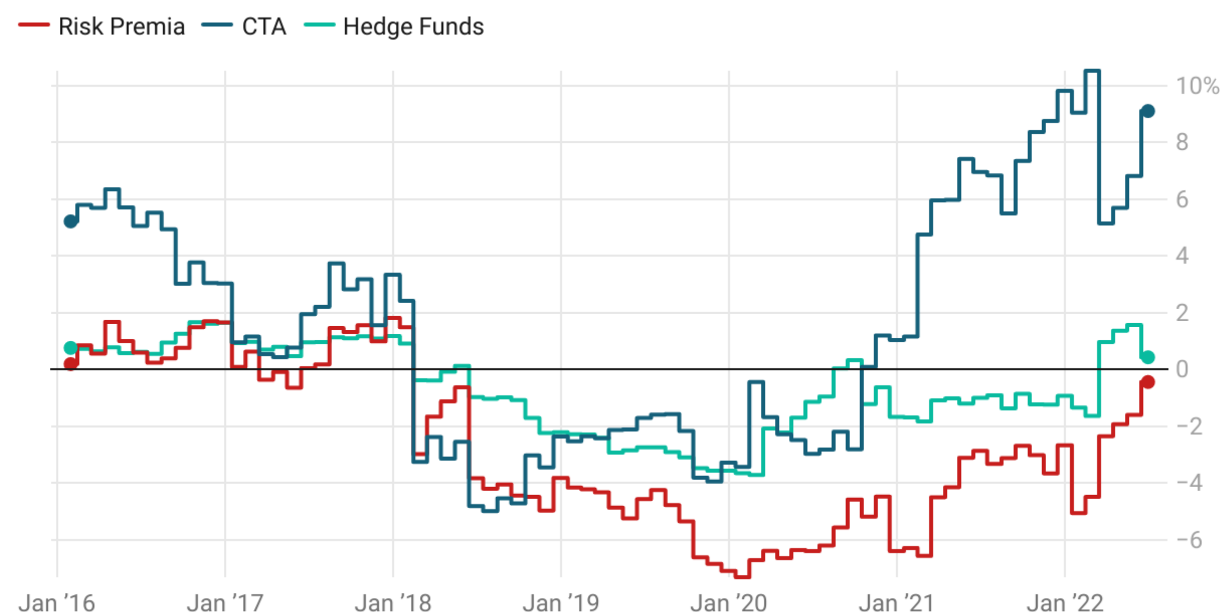
original report. Hedge Funds and Risk Premia have also improved, though their pace of expansion and absolute level are a fraction of CTAs. A significant part of the alpha for CTAs is likely due to the sector's successful navigation of the fits and starts in global risk appetite throughout this period.

In Table 1 we note that the average 24-month rolling correlation of CTAs to equity showed some variability but remained mostly low, consistent with long run expectations.

Noteworthy (Table 1) is also the change in correlation of Risk Premia to the equity market. Though a few explanations may be offered, we point to the continued variability of profile of Risk Premia, a theme we studied in the original paper.

Figure 1 – Rolling 24-Month Annualized Alpha Estimates

Estimated alpha (FF5 Momentum)



Source: NilssonHedge • Created with Datawrapper

Table 1 – Periodic Correlations

Average of 24-month rolling correlations.

	First Half (Dec-17 to Sep-19)	Second Half (Oct-19 – Jul-21)	Update (Aug-21 and Jul-22)
CTA (Barclay) vs Risk Premia (SocGen)	0.71	0.15	0.08
CTA vs Eq	0.52	0.18	0.24
CTA (Barclay) vs Hedge Funds (HFR)	0.68	0.13	0.32
Eq vs RP	0.37	0.52	0.19
Eq vs HF	0.86	0.88	0.83
Hedge Funds (HFR) vs Risk Premia (SocGen)	0.57	0.57	0.13

Source: NilssonHedge, Bloomberg, HFR, BarclayHedge, SocGen • Created with Datawrapper

> "We note the benefits from CTA exposure can result from market sectors not anticipated to drive performance when viewed at the time through a conventional lens."

AND… THE MORE THINGS CHANGE, THE MORE THEY STAY THE SAME

To demonstrate how a systematic, long volatility strategy like trend following has generated profits and losses during more recent equity downturns, we created a basic trend following proxy (please see our full report, available on request, for details on the proxy structure.)

Using this proxy, Table 2 records the Sharpe ratio for each major market sector the proxy "traded" during negative equity markets since January 2000. Most noteworthy may be the prevalence of positive performance for the proxy during the three years following the unwinding of the Dot.com bubble. All market sectors have positive Sharpe ratios. The almost two years following the Great Financial Crisis demonstrates similar strong performance and breadth of diversification.

The three-month equity drawdown at the onset of the COVID Crisis is an exception. During this "V-shaped" equity market drawdown, the trend following proxy delivered risk-adjusted returns marginally better than equity market. But, both had negative returns.

Table 2 – Sharpe Ratio per Sector During Peak Equity Drawdowns

Episode	Start	End	Bond	Agricultural	Currency	Energy	Equity Indicies	Prec Metal	Overall Proxy	Equity Sharpe
Dot.com	2000, Mar	2003, Mar	1.2	0.7	0.7	0.8	0.6	1.1	1.3	−0.7
GFC	2007, May	2009, Mar	1.0	1.1	0.8	1.4	0.6	0.8	1.2	−0.8
2015-2016 Correction	2015, Jun	2016, Feb	0.5	0.5	0.5	3.1	−1.4	0.0	0.5	−0.6
Covid	2020, Jan	2020, Mar	4.3	−1.0	−0.5	3.3	−2.4	0.8	−1.0	−1.2
Ukraine/Inflation	2021, Dec	2022, Jun	2.9	0.7	2.2	3.0	−0.4	−1.3	2.4	−1.8
Overall	2000, Jan	2022, Aug	0.4	−0.1	0.4	0.4	0.3	0.4	0.5	0.3

Source: NilssonHedge • Created with Datawrapper

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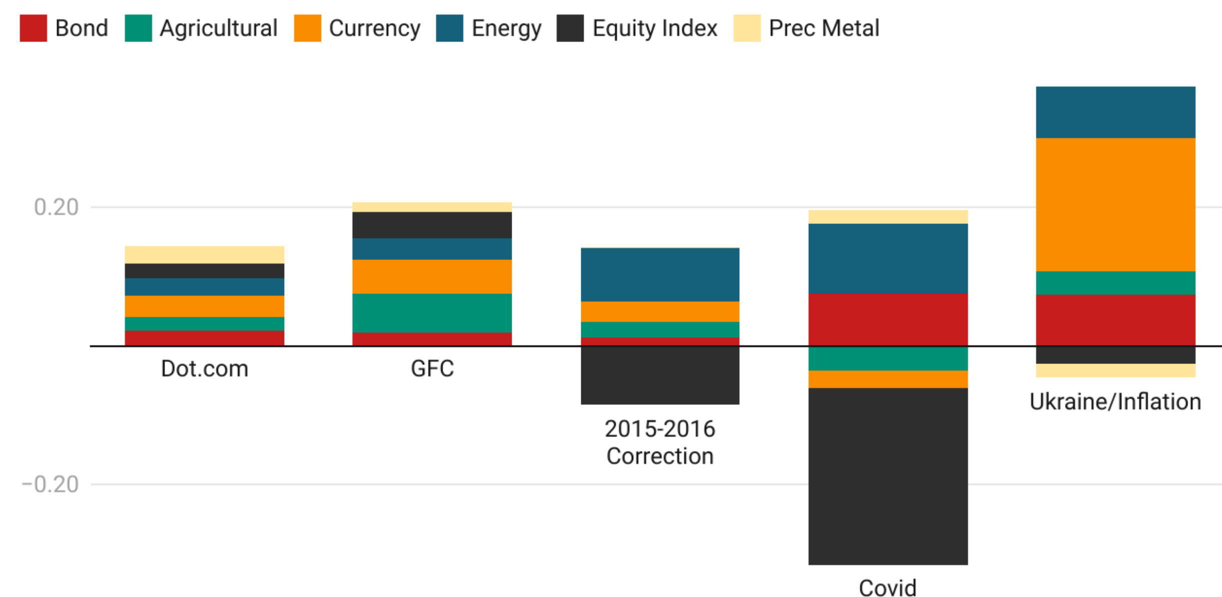
Figure 2 – Returns per Sector During Peak Equity Drawdowns



Created with Datawrapper

Linus Nilsson, Founder – NilssonHedge

Figure 2 provides the annualized daily returns for our trend proxy during the various equity drawdowns. We note the benefits from CTA exposure can result from market sectors not anticipated to drive performance when viewed at the time through a conventional lens. Foreign exchange, the Energy complex, and fixed income each have provided meaningful positive attribution during the periods we evaluated.

THINGS TO CONSIDER

- CTAs and long volatility strategies have had a moment in H1 2022. In fact, at the time of publishing, rolling effectivity of CTAs is close to or at all-time highs. Risk Premia has recovered marginally but has outperformed Hedge Funds.

- Volatility (i.e. VIX) remains at elevated levels above 20%, well above the historic lows prior to 2020.

- Central banks have gone back to first principles and have re-focused on their primary mission; to fight inflation domestically rather than to provide a backstop for risky assets globally.

- From a longer historical context, the equity markets seem reasonably expected to have a sustained period of reversion to the long-term performance averages. If so, future equity returns (absolute and risk-adjusted) may be flat or below the unprecedented positive results that followed the Great Financial Crisis and that were supported by historic quantitative easing.

- Behavioral biases keep memories too short, outlooks too rosy, and risk taking a conundrum. More recent market entrants are by definition less familiar with recently observed equity market distress and ambivalence.

Here we again advocate for globally diversified, active alternative investment management strategies, including positive skew, managed futures and CTA portfolios, as an important response to the seeming contradiction of needed investment results during an increasingly uncertain investment outlook.

BIO:

Dan Rizzuto is the Head of Capital Introductions and Advisory at Marex. Dan has been a committed advocate of the alternative asset management industry for over twenty-five years. He has held senior management, business development, analytic, and operational roles in both the asset management and banking industries throughout his career at companies including Société Générale, Graham Capital Management, DKR Capital, and Bear, Stearns. Dan is a CFA Charterholder.

Linus Nilsson founded NilssonHedge, a public hedge fund database, as an initiative to bring transparency to the hedge fund universe. The database uses an innovative way of aggregating public performance data and offers access to hedge fund returns. Linus is a CFA Charterholder. Access the database at www.nilssonhedge.com.

"This is prepared for institutional and not retail clients and recipients should make their own trading or investment decisions."

Dan Rizzuto, Head of Capital Introductions and Advisory – Marex

Martin Källström
Partner and Senior Managing Director – Lynx Asset Management

Lynx Stays True to Main Objective

By Eugeniu Guzun – HedgeNordic

> "People underestimate the impact of timeframe, asset allocation, and methodology on trend-following performance."

Many trend-following strategies have flourished in 2022 amid a persistence of larger trends across several asset classes. The most successful trend followers have made their returns by being on the right side of the market trends in bonds and energies. Lynx Asset Management's trend-following program has been on the right side of trends everywhere after amassing gains in every traded sector.

Lynx Fund enjoyed its strongest start to a calendar year since inception in May 2000 with a 35.8 percent return for the first half of 2022. The program powering the fund is so far generating gains in every asset class traded. Fixed-income-related and energy-related investments accounted for a good portion of the Lynx Program's performance in 2022. "While bonds and energies have been highly profitable this year, the program would still be performing very well without them," says Martin Källström, Partner and Senior Managing Director at Lynx. "Through the end of August, the rest of the portfolio has contributed a positive 13.6 percent gross return as gains have been generated in every sector we trade from currencies to agricultural commodities," he elaborates. "It has been nice to have made the right calls on bonds and energies, though!"

DIVERGING FORTUNES

While trend-following CTAs as a group have seen a resurgence in performance in 2022, many suffered from lackluster performance despite operating in a trendy environment. But why have trend-followers experienced diverging fortunes this year? According to Källström, "people underestimate the impact of timeframe, asset allocation, and methodology on trend-following performance." Differences in these strategy choices can result in widely divergent results. "Given some of the extraordinary moves that have occurred across asset classes this year, how and how quickly a manager enters a trend, manages the risk around that trend, and ultimately determines when that trend is no longer in place have had a tremendous impact on profitability," he emphasizes.

Differences in the traded market universe and how managers approach risk allocation and risk management can also significantly impact returns among trend-followers, according to Källström, particularly in a market environment that we have observed in 2022. "While there will always be performance dispersion based on these variables, managers may have been trying to differentiate themselves from the peer group to attract investors in recent years by doing something new," points out Källström. "This may also be contributing to some unexpected results."

STAYING TO MAIN OBJECTIVE AMID CONTINUOUS EVOLUTION

While constantly developing its trend-following Program, Lynx Asset Management stayed true to its main objective of delivering strong returns with a negative correlation to equities in risk-off environments. "Despite some significant advances in our models over the years, we have remained true to our objective: delivering attractive risk-adjusted returns with a conditional negative correlation to equities in down markets," emphasizes Källström.

"The Lynx Program is constantly developing – and hopefully improving; as the market dynamics and opportunity set change, we adapt to the new environment," elaborates Källström. "Like evolution, these changes occur slowly. Even significant developments – such as the implementation of machine learning models in 2011 – did not markedly change the strategy," he continues. The team at Lynx Asset Management monitors key performance indicators to ensure that the addition or "retirement"

of models does not alter the objectives of the strategy. On average, the Lynx team turns over about one-tenth of the models in the Lynx Program every year as they refine the approach to "the then-current regime," according to Källström. "Importantly, however, the objective of the program has never changed."

TREND-FOLLOWING AND DIVERSIFYING MODELS

The Lynx Program relies on a collection of over 45 trend-following and diversifying models. The trend-following allocation currently corresponds to just over 70 percent of invested assets. "Trend-following currently accounts for around three-quarters of the risk in the Lynx Program, not markedly different from what it has been at any other point in time over its 22-year history," says Källström. "Trend capitalizes on the behavioral biases of investors in a way that makes it a very attractive strategy in a portfolio of traditional investments…it tends to do best when markets are being driven by fear or greed," he explains.

The Lynx Program uses different methods to identify trends, which are applied across a broad universe of markets and timeframes. Short and medium-term models account for over 80 percent of the program's allocation to trend risk "as these are quickest to respond to market crises," according to Källström. "We have remained on the shorter end of the medium-term trend-following spectrum even though extending our timeframe would have allowed us to increase the capacity of the strategy," he adds. "While we may not always be correctly positioned to profit from an idiosyncratic market shock, we want to be quick to react once one occurs."

The program, which currently oversees SEK 90.8 billion in assets under management, also employs a number of diversifying models to complement the performance of the trend-following book. "While it can be tempting to include convergent strategies and risk premia (such as outright carry) due to their negative correlation with trend, we avoided these as they tend to perform poorly during market crises, particularly when volatility is expanding," explains Källström. On this diversifying side of the portfolio, models are developed and selected based on their ability to deliver differentiated positive performance without a short volatility profile. "Each model has

> "The Lynx Program is constantly developing – and hopefully improving; as the market dynamics and opportunity set change, we adapt to the new environment. Like evolution, these changes occur slowly."

unique characteristics and we apply a sophisticated approach to analyze key indicators which influence how risk is ultimately budgeted," elaborates Källström.

"On a high level, the allocation of risk to our different models is a result of an optimization exercise where we seek to maximize our objective function for the program," says Källström about the strategy allocation process. While diversifying models are mostly designed to reduce drawdowns in non-trending environments, both trend-following and diversifying models generated positive returns across all timeframes this year.

ARE MARKETS TRENDY ENOUGH?

The environment so far in 2022 has been exceptionally attractive for the Lynx Program, but a continuation of the current regime is not imperative for positive performance to persist going forward. "The highest developed market inflation readings in a generation, normalizing monetary policy, increasing fiscal imbalances and geopolitical conflict have all contributed to some exceptionally profitable trends in financial and commodity markets this year," explains Källström. These issues, however, did not emerge overnight. "Inflationary pressures have been building for years, with many imbalances left over from the global financial crisis over a decade ago. Trend-followers welcome this environment as markets have moved and will likely continue to move as the year progresses."

The environment for trend-following has improved markedly, specifically for a strategy like the Lynx Program, points out Källström. "Importantly, whether the same pressures that have driven markets so far this year continue will not necessarily determine the fate of our strategy going forward," he continues. Short bond and long energy positions have been the program's best performing sectors in 2022. For a brief period in August, the Lynx Program also went long bonds and shorted the crude oil complex. "The Lynx Program is designed to adapt to the market environment and only needs markets to move from one level of equilibrium to the next to prosper," emphasizes Källström. "While I can't tell you what will happen from a macroeconomic or geopolitical perspective as the year progresses, I'm confident that markets are going to move. We plan on capitalizing on those moves as they occur."

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Gaining Momentum: Where Next for Trend-Following?

By Graham Robertson, DPhil - Man AHL

Graham Robertson, DPhil - Head of Client Portfolio Management - Man AHL

INTRODUCTION

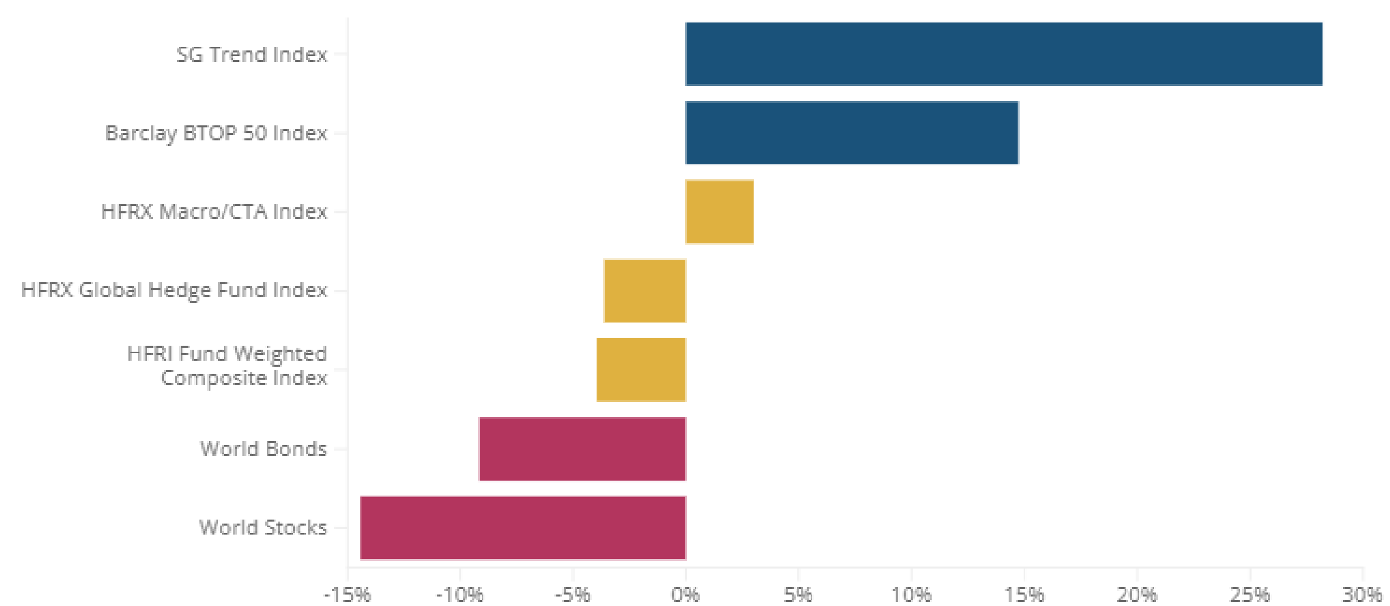
Trend-following indices, such as the SG Trend and BTOP50, have posted their best year-to-end-August returns since 2000, against a backdrop of poor performance from traditional asset classes such as equities and bonds. This should not come as a surprise, in our view. First, we are seeing the presence of strong trends in futures markets which are sensitive to macro-economic themes such as inflation. Second, trend-following has historically been observed to perform well during equity crises, and academic studies have also indicated an ability to perform well during fixed income crises too (see Bibliography for more details).

In this short article, we delve into some aspects of trend-following's returns this year, specifically conventional futures and FX trend versus alternative markets trend, and question whether recent positive performance is just predicated on continued worries around inflation and weakness in traditional assets.

TREND-FOLLOWING: THE ALTERNATIVES STRATEGY DU JOUR

Trend-following strategies have had an outstanding 2022 so far, outperforming not only traditional asset classes like stocks and bonds, but also hedge funds in general (Figure 1).

Figure 1: 2022 Returns of Various Traditional and Alternative Investments



Source: Man Group, Bloomberg, MSCI, BarclayHedge, HFRI and HFRX. Date range, year-to 31 August 2022.
World Bonds represented by Barclays Capital Global Aggregate Bond Index Hedged USD. World Stocks represented by MSCI World Net Total Return Index Hedged USD.

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We have written extensively about trend-following's persuasive credentials during inflationary periods (Neville et al, 2021) and equity crises (Harvey et al, 2019, Hamill et al, 2016). The difference in performance between the BTOP50 and SG Trend indices, consisting of 20 and 10 constituents respectively, suggests there is considerable dispersion between trend-following managers in 2022. This could be down to various factors – risk targets, market allocations, models and trading speed, etc – which are hard to quantify without detailed knowledge of how managers trade. At Man AHL, however, we are fortunate to be running multiple trend-following programmes, spanning the full spectrum of markets, models and risk budgets, so we are potentially in a good position to isolate the real drivers of performance.

TRADITIONAL TRUMPS NON-TRADITIONAL IN 2022

What we have found in 2022 is that simple is best: pure trend strategies trading the largest futures markets have been the star performers. Macro-economic themes are driving markets in our view; inflation, central bank activity, war, supply chain disruption, de-globalisation and post-pandemic recovery, to name but a few. They are all interlinked, of course, but these are macro trends which are best observed in macro-sensitive instruments such as futures on global markets, be they country-level equity indices, government bonds or the largest of the world's commodities. What are now called 'non-traditional' or 'alternative market' trend-followers generally boast a wider range of price drivers and better diversification through trading a broad range of typically over-the-counter ('OTC') markets such as emerging market interest-rate swaps or European hydro-electric power markets.

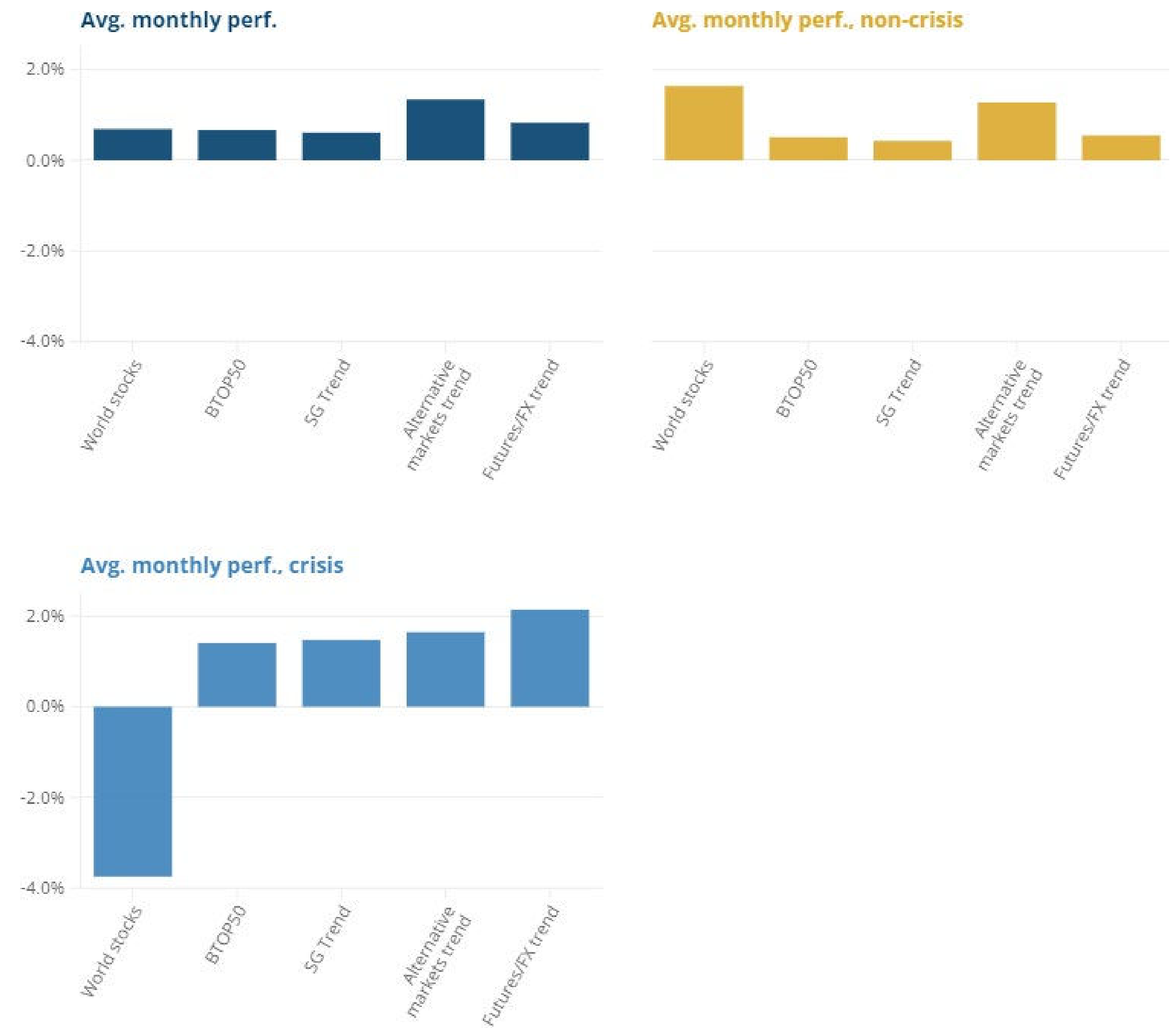
When trends are concentrated in certain markets at a given point in time, it stands to reason that the more concentrated the trend-follower is in these markets, the better performance is likely to be at that time. And this is the case at the moment; traditional trend-following (futures markets) has broadly outperformed non-traditional trend-following (mostly OTC markets).

In the long term, we believe diversification is the key feature in designing robust trend-following strategies.

> „What we have found in 2022 is that simple is best: pure trend strategies trading the largest futures markets have been the star performers."

Figure 2 shows how an alternative markets trend-following strategy – with its greater diversification – outperforms a simulated futures/FX trend one. This is particularly true in the non-crisis periods. However, it is not the case for crisis periods such as the Global Financial Crisis of 2008 and the coronacrisis of 2020.

Figure 2. Alternative Market Versus Traditional Trend-Following: Performance in Crisis and Non-Crisis Periods



Simulated past performance is not indicative of future results. Returns may increase or decrease as a result of currency fluctuations.

Source: Man Group, Bloomberg; between 1 September 2005 and 31 August 2022.

Crisis period defined as Aug 98 to Sep 98, Sep 00 to Sep 02, Oct 07 to Feb 09, May 10 to Jun 10, May 11 to Sep 11, Oct 18 to Dec 18, Feb 20 to Mar 20, Jan 22 to Aug 22.

Note: Data normalised to same volatility as world stocks (14%). World Stocks represented by MSCI World Net Total Return Index Hedged USD. Alternative trend results are from a hypothetical strategy whch trades predominantly OTC markets. Futures/FX trend results are based on hypotheical strategies trading predominantly futures/FX markets. The strategy performance data is simulated and is shown for information purposes only. The simulated data does not represent actual performance of the strategy or of a fund and it should not be used as a guide to the future. This approach has inherent limitations, including that results may not reflect the impact material economic and market factors might have had on the investment manager's decision-making and/or the application of any trading models had the strategy been managed throughout the period over which the simulated performance is illustrated.

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Can it be true that diversification is less effective in a crisis? 'Crisis' typically relates to developed markets, most often equities. News of a crisis in European hydro-electricity rarely makes the headlines or ripples through financial markets. In this case, we believe it stands to reason that global futures markets should be the instruments of choice for a trend-follower if an investor wishes a crisis hedge.

> "...by using a trend-following strategy, we do not need to be able to predict when an inflationary period may peak or end."

THE OUTLOOK FOR TREND

History is one thing, but to quote the first rule of Italian driving: "What's-a behind me is not important."[1] What is ahead is what matters. Figure 3 reproduces a chart from Draaisma & Neville, 2022, showing that trend-following is not only a robust performer in inflationary periods in general, but also in the last six months of the episode, as well as in the 6- and 12-month timeframes following inflation's peak.

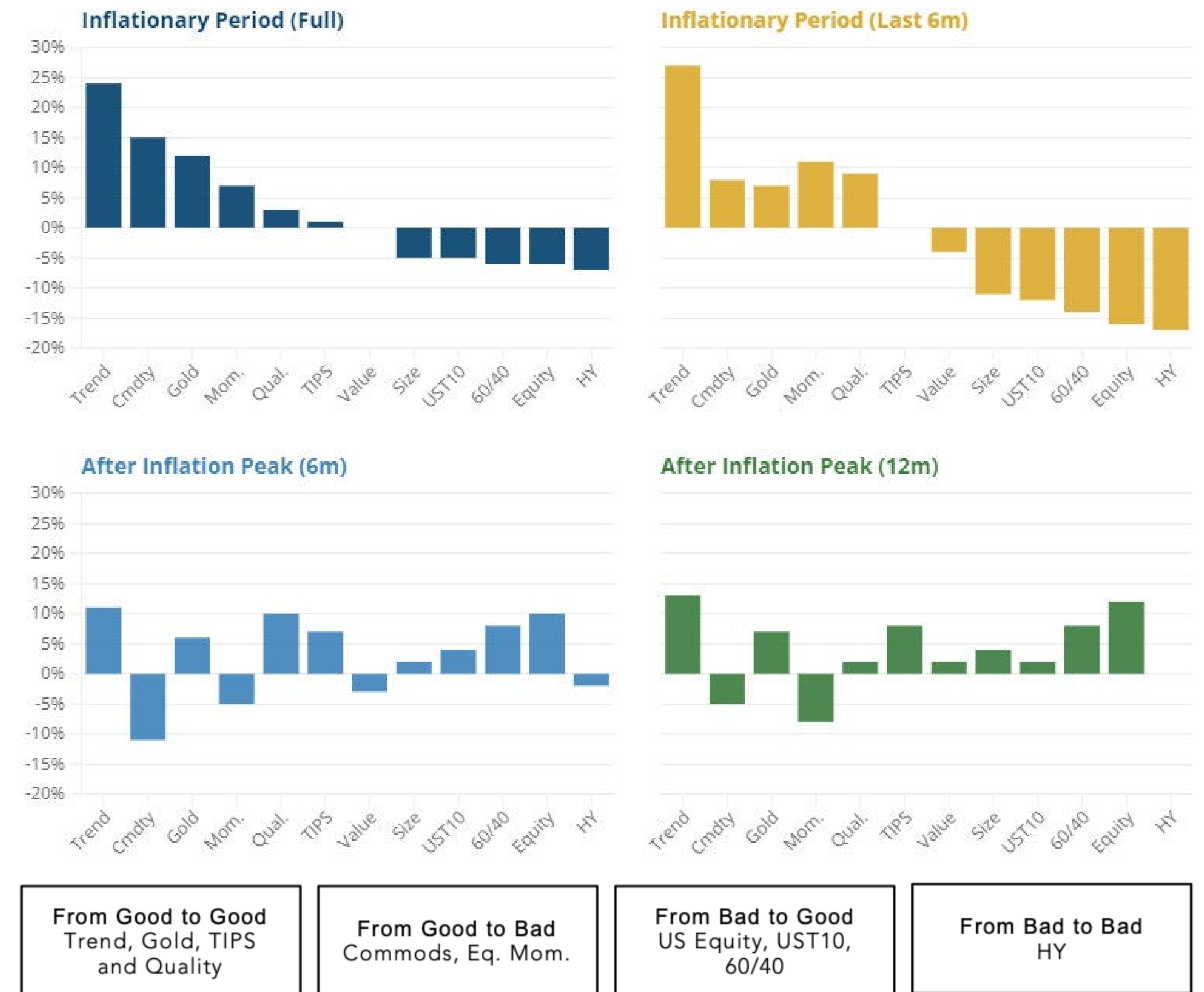
This is important: it tells us that by using a trend-following strategy, we do not need to be able to predict when an inflationary period may peak or end. Intuitively, this is because given sufficient time, trend-following strategies are likely to adopt the market direction, whether it be long commodities, short bonds and equities in inflationary periods or the other way around after inflationary peaks.

This is important: it tells us that by using a trend-following strategy, we do not need to be able to predict when an inflationary period may peak or end. Intuitively, this is because given sufficient time, trend-following strategies are likely to adopt the market direction, whether it be long commodities, short bonds and equities in inflationary periods or the other way around after inflationary peaks.

CONCLUDING COMMENTS

At its heart, trend-following is an intuitive strategy; it should do well when markets move a lot, as they so often do in inflationary environments. Further, if an investor wants to tune a trend-following strategy to a crisis, and that crisis is in macro-economies, we believe instruments that are sensitive to the macro-economy should be used.

Figure 3. Annualised Real Returns for Inflation Regimes (1926 to Present)



Simulated past performance is not indicative of future results. Returns may increase or decrease as a result of currency fluctuations

Source: Equities are the S&P 500 using Professor Shiller's data. UST10 is from GFD. 60/40 is the monthly rebalanced 60% equity, 40% bonds portfolio. Commodities are proxied by an equal weight portfolio of all futures contracts as they appear through history. From 1926 to 1946 this is based off work done by AQR. From 1946 we use returns from the Man AHL database. Styles are the Fama-French portfolios (Mom., Value (HML) and Size (SMB)), and AQR (QMJ) for Quality. TIPS prior to 1997 based off a backcast by William Marshall at Goldman Sachs, otherwise Bloomberg. HY portfolio constructed by the Man DNA team, using data provided by Morgan Stanley; as of 28 April 2022.

1) Raul Julia as 'Franco' in The Gumball Rally (1976): https://www.youtube.com/watch?v=hVp7FbLpVSU

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Trend Following: A Regime-Agnostic Strategy

By Hamlin Lovell - HedgeNordic

> "If inflation comes down, that in itself will generate a new suite of trends to follow."

The first half of 2022 will be remembered as an exceptional environment for systematic managers who specialize in trend-following, commonly known as CTAs. During that time, many CTAs captured the bull market in commodities and the bear market in government bonds, both of which are related to inflation at 40-year highs. Commodities have been boosted by supply chain issues that were somewhat predictable after Covid, and geopolitics that has come as a shock.

Most CTA managers have had no recent experience of trading this sort of environment, but their open-minded models have adapted to the new paradigm much more nimbly and adroitly than most discretionary investors. "We had no real inflation or interest rate shocks in the prior 20 years, but the models have performed well" says Nicolas Mirjolet, CEO of Quantica Capital AG, based in Zurich, Switzerland.

This year has been a cocktail of extreme left tail events for bonds with extreme right tail events for commodities and inflation, but a thorough analysis of CTA performance shows return generation across asset classes - and through bullish, bearish and neutral regimes. Quantica's analysis of trend following regime resilience breaks down asset class performance into bullish and bearish markets each 16% of the time, with the other 68% being defined as neutral. Using Quantica's trend models shows that CTAs have, on average, profited under all of these regimes for equities, commodities and bonds – and the distribution of CTA returns per asset class is clustered in a more stable and tighter range than a long only investor would obtain.

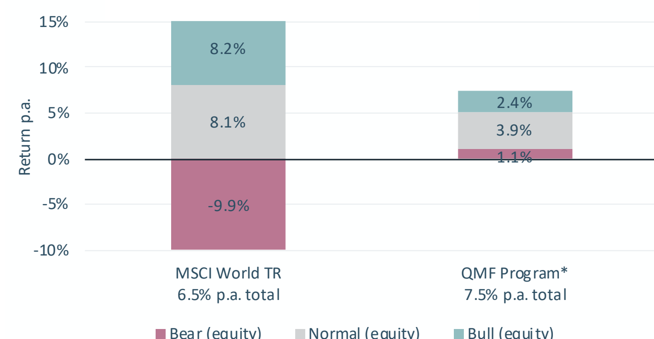
"This shows there is no long-term link between the macro climate and returns. CTAs offer macro-agnostic returns," asserts Mirjolet.

Why have trend models stood the test of time so robustly? One market inefficiency being exploited is that financial markets can take time to recognize regime changes. "Markets are slow to react to news and inefficient at incorporating it," observes Mirjolet. The explanations for this include behavioural finance biases: investors are anchored to the past, and extrapolate from what they feel comfortable with. When a market regime first starts to change, many investors, politicians and policymakers are "in denial", a psychological state of mind first identified by the Austrian father of psychoanalysis, Sigmund Freud. For example, over many months in 2021 and early 2022, many politicians, central bankers, economists and investors insisted that inflation was only "transitory", even though each monthly data point kept coming in ahead of estimates. Rather like a naughty child who has to be scolded many times, they needed to repeat the behavioural pattern of being wrong repeatedly before admitting their mistake – and acknowledging that inflation was high, accelerating and potentially persistent.

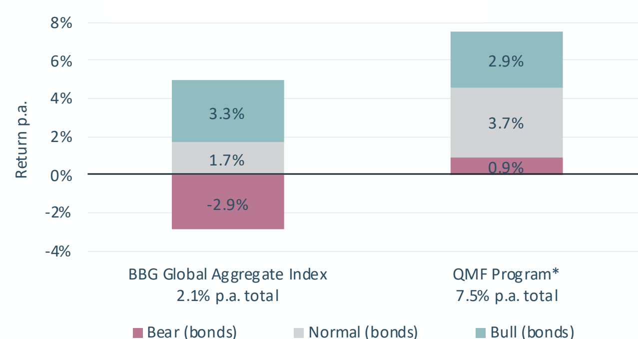
Now in August 2022, the behavioural biases might work in the opposite direction – the US CPI number for July was just shy of consensus estimates. Recency bias might now lead investors to have blind faith in the "commodity super cycle" narrative - even though many commodities in August 2022 are now below their levels prior to Russia's invasion of Ukraine.

Nicolas Mirjolet, CEO, Quantica Capital AG

Equities regime conditional returns



Interest rates regime conditional returns



Regime-conditional log-returns quantify the behavior of a given strategy in different regimes of a chosen market risk-factor (e.g., falling equities, rising rates, etc.). 3 regimes are defined as follows:
>> "Bear market regime": when quarterly returns of the market risk-factor are below their 16% percentile
>> "Bull market regime": when quarterly returns of the market risk-factor are above their 84% percentile
>> "Normal market regime": when quarterly returns are in-between the 16% and the 84% percentile

“Our only hypothesis is that trends exist and can appear in any market at any time. We do not know when or where.”

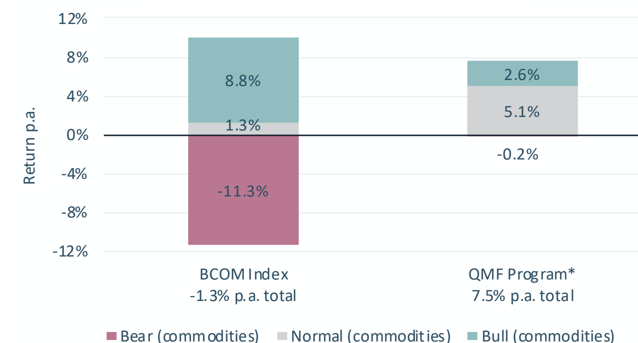
In contrast, CTA managers have no a priori view on whether inflation has peaked or will continue to rise, but are agnostic about all regimes including the inflation climate. “If inflation comes down, that in itself will generate a new suite of trends to follow. Some trend following CTAs could already be short of wheat, which was a big winner on the long side earlier this year. We do not need faith in the inflation story,” says Mirjolet.

Thus “smart diversification” can profit from positive inflation beta in an inflationary climate, and negative inflation beta in a deflationary climate – and the same logic applies to other risk factors and asset classes.

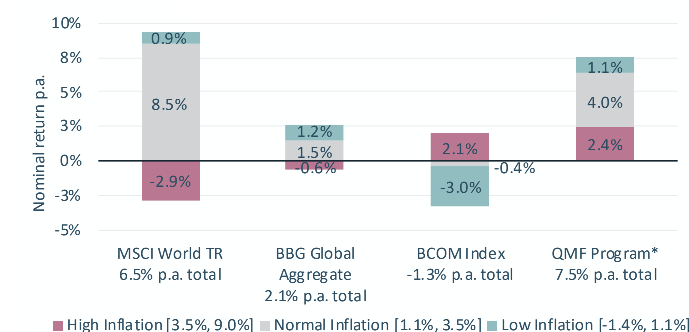
It is however true that bear phases for some asset classes can, on average, be less profitable than bull phases. Shorting equities is a tough game that needs to navigate violent bear market rallies, but short equity positioning in CTAs does make a positive contribution to their overall risk adjusted returns. Shorting bonds entails negative carry whereas owning bonds in a bull market can capture three sources of return: coupon income, yield curve roll down and capital appreciation. All of these variables can be factored into models, and the shifting dynamics of positive or negative carry feed into CTA positioning.

For many traditional long only investors in 2022, a long allocation to commodities has been the only place to hide with bonds and equities both down. However, a static buy and hold approach to commodities is not necessarily a profitable longer-term strategy.

Commodities regime conditional returns



Inflation** regime conditional returns



*QMF: Net realized returns of the Quantica Managed Futures Program, ** Inflation: Year-on-year change in the headline US Consumer Price Index (CPI) - Source: US Bureau of Statistics
Source: Quantica Capital, Bloomberg. Analysis period: Jan. 2005 – June 2022
Past performance is not necessarily an indication for future results.

Investible long only commodity returns have averaged near zero over the past 30 years. The reason for this lies partly in the dynamics of the commodity term structure and negative costs of carry: investible commodity indices have underperformed spot commodity prices by an average of 6% per year, due to negative roll yields, mainly in energy and agriculture. A more flexible approach that sometimes has short exposure, and might blend a mix of longs and shorts, can opportunistically profit from the roll yield.

There is a certain degree of humility in the trend following mindset: “our only hypothesis is that trends exist and can appear in any market at any time. We do not know when or where. We may start trading new markets that would not have been profitable for the past 10 or 15 years, because we cannot predict when trend following will start working for an individual market,” points out Mirjolet.

CTAs can provide particularly powerful diversification benefits for some large institutional investors who are subject to artificial constraints on their investment freedom. “For instance, many pension funds do not have the flexibility to go short and cannot invest directly into commodities,” says Lukasz Wojtowicz, Director of Business Development.

Quantica has been applying its distinctive style of trend following for over 20 years and has delivered returns independent of risk factors.

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If It Ain't Broke, Don't Fix It

Joseph Waldstein and Gernot Heitzinger – smn Investment Services GmbH

By Kamran Ghalitschi – HedgeNordic

Austrian CTA manager SMN is clocking in at an impressive gain of 85 percent with their SMN Diversified Futures Fund over the rolling 36-month period. This comes after a tough decade for the strategy with a new maximum drawdown of 39 percent since the fund´s inception in 1996. Persistence and the ability to sit out such periods seem to be key to the long-term success of a systematic manager. But surely, the heat is on and the pressure goes up in such periods.

"Investor pressure was definitely high. Actually, going back to maybe 2018/2019, our investors were telling us we may be the last ones believing in the good, old trend following story and frequently suggested to make fundamental changes to the investment strategy, adapting it to the so called new normal," SMN's managing director Gernot Heitzinger recalls.

Assets under management decreased for the Austrian manager during this period and two of the largest investors redeemed their allocations in early 2021, just when performance started to gain momentum again. Christian Mayer and Michael Neubauer, two of SMN´s founding partners, who are still active in daily business, have experienced this kind of investor behaviour before. "In our 26 years running the strategy, we have seen this before. It was similar in 2007 and 2013 until performance kicked in. Investors throw in the towel at the most unfortunate time. These experiences taught us not to overreact and panic, not to change the basics of our trading philosophy, strategies and fundamental beliefs."

In the tough times of a long negative performance cycle, there may be a fine line between being heroically persistent, stubborn, inflexible or simply wrong. Being systematic and rules-based can help evaluating decisions in the rear-view mirror.

"Changing too much in periods of stress is probably not the best timing, as you adapt to isolated

„Investors throw in the towel at the most unfortunate time. These experiences taught us not to overreact and panic, not to change the basics of our trading philosophy, strategies and fundamental beliefs."

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situations, causing more harm than good in the long run," Joseph Waldstein, who is leading SMN´s quant research team, emphasizes the importance of having a solid foundation in ones' beliefs and understanding of markets and being persistent rather than short-term opportunistic.

SAME MODEL SINCE 1996

"We have models unchanged since 1996, others have been slightly adapted while the fundamental logic is still the same. We did a lot of research and implementations in areas like portfolio diversification and risk management. Overlays for improving management of changing market risk regimes and cluster risks limitation techniques are two examples. These innovations had a larger effect than changing components such as time frames of trading, or trend detecting methodologies," says Heitzinger.

"For us, diversification and identifying diversifiers always have been key elements," Neubauer is convinced. "We started trading a portfolio of 50 markets in 1996 and ended up with around 80 a decade later." A significant increase in the number of markets traded came with the introduction of synthetic markets in 2008. These are combinations of different contracts, such as spreads between markets, calendar spreads and baskets of different instruments.

During the financial crisis, investors were cashing in on managed futures funds who had performed exceptionally well, remained liquid and offered protection from tumbling markets. "Later Investors returned to the asset class but funds were allocated to a small number of very large advisors, rather than smaller ones such as a boutique based in Vienna," Heitzinger recalls.

SMALL AND NIMBLE, YET TRUE TO TREND

"The advantage for us being small and nimble was the ability of doing something different," says Waldstein. SMN started diving into a concept Waldstein refers to as "Structural Alpha Trend", meaning trading niche markets being off the radar for large traders. "The portfolio effects as a result from trading smaller commodity markets such as South African grains, milk, cheese and many others are impressive due to the low correlation to traditional portfolios" Waldstein explains. Trading returns in these markets show a relatively low correlation of 0.2 or 0.25 to a traditional trend following portfolio, compared to more traditional markets averaging correlations between 0.7 to 0.8. Adding such niche markets allows SMN to identify exploitable trading opportunities in more than 300 instruments. This naturally comes at the expense of limited capacity which SMN commits in order to offer unique diversification for its investors.

Waldstein describes how SMN is constantly challenging existing models or developing new ideas. "A high percentage of our research efforts is not implemented into our trading systems. While this seems to be disappointing, understanding what works and what does not is key for us, assuring the validity of our approach and our level of confidence."

Performance and marketing pressure tends to influence the CTA industry heavily, provoking possible style shifts. One notable example may be the move from trend following to multi-strategy, multi-style approaches. While that seems to work for a handful of CTA companies we have seen many more failing with such style shifts. SMN has resisted such temptations, remaining dedicated to a pure trend following strategy.

More recent evolutions such as machine learning and artificial intelligence are features SMN may use in their research and development activities, but do not see them being implemented in active trading models. "We are very cautious gearing towards a trading methodology which is self-learning. We are concerned that such tools may take too much emphasis on the most recent past. At least there is a big style-drift risk, without even noticing it. Furthermore adapting for shorter time intervals has not really proven to be helpful in our history," Waldstein is sceptical.

"…understanding what works and what does not is key for us, assuring the validity of our approach and our level of confidence."

Other new attributes such as alternative data is also something SMN researched but rejected so far. Neubauer explains: "Alternative data may add to your systems if you really believe in market inefficiency and fundamental advantage through additional information. We always believed in the behavioral nature of price driven trend following, so we doubt that such fundamental inputs will consistently add value to our approach."

Optimizing models by results of back testing is very dangerous. "During the period from 2009 to 2021 we would have better stopped trading any markets on the short side as a result of the asset bubbles caused by central banks. But so far in 2022 much of our return comes from short positions in fixed income." Waldstein highlights.

A long-term view and a strong conviction to the strengths of the strategy is crucial. Panicking and changing key features because of disappointing results is emotional. One of the biggest advantages of technical trading is to overcome emotions.

While some of the largest CTAs employ large numbers of researchers, such resources are typically not available to boutiques the size of SMN, currently managing around $200 million with the help of eight staff involved in research and portfolio management. Neubauer doubts the benefits of engaging an army of researchers. "Sure, it may be helpful to have individual projects done quicker, but on the other hand a large team of researchers will likely produce too many conflicting ideas in day-to-day operations. There could be a lot of noise while being at risk of becoming overcomplex. Getting the big picture right is likely the most important part in your modelling. Employing an army of PhDs is not in the cards for a boutique like ours, but we used to work with a much larger research department years ago. For us it does not provide the big advantage the numbers would suggest."

It seems, the temptation to overengineer and overoptimize at times may lure you to fix something that was in fact never really broken.

Harold de Boer
Managing Director, Head of R&D – Transtrend

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Does the Captain Still fly?

By Harold de Boer – Transtrend

"How would the investment manager characterize the basic trading approach for this strategy? What percentage is 'Discretionary' and what percentage is 'Systematic'?" This is one of the questions in AIMA's Illustrative Questionnaire for the Due Diligence of Investment Managers. For our Diversified Trend Program, we've always answered "100 percent systematic", which we still do. But does this imply no discretion? Couldn't our basic approach be 100 percent discretionary as well? In practice, it is.

The reasons why we and many others in our industry take pride in trading systematically are known. The systematic nature of the strategy grants it a certain reliability. The historical performance is not the outcome of a series of arbitrary trades that happened to be successful, but the outcome of a well-defined, verifiable and repeatable process based on the disciplined application of thoroughly tested rules. And indeed, if we narrowly focus on the decisions of what to buy or sell, how much to buy or sell, and when to buy or sell, all of these decisions are fully rules-based.

But what if we dig a little deeper? These rules are only applied to the markets traded by the program. How do these markets end up in the program? We manually add or remove them, in a clearly discretionary way,

"If you compare apes with people, then about 98% of their DNA is similar. If you compare a good discretionary trader with a good systematic trader, then about 98% of their DNA should be similar too. And if it's not, it's the systematic trader that is off the track."

Harold de Boer, HedgeNordic Round Table, November '21

HedgeNordic Virtual Round Table: Managed Futures (2021)

based on our view on these markets. We've never used a system that tells us which markets to trade. And what about the applied rules themselves, where do they come from? They obviously did not fall from the sky. We defined them ourselves, again with full discretion, based on our ideas and our understanding of the market. And the past 30 years we've adapted these rules whenever we felt it necessary.

When I was a kid I tried whether I could fly. I spread my arms, flapping them like wings while running across the meadow. On tired legs I had to admit that I wasn't a bird, nor a bat. However, because some far more inventive kids made it possible, people can fly after all: in a plane.

Essentially, our basic approach rests on formulating a view on the functioning of markets and the current market environment, and continuously challenging and readjusting those views. We do so in a fully discretionary way, with the aim to trade the markets in accordance with our views in a systematic way. We are able to trade in such an adaptive way because of the nature of the relationship with our clients: we have trading discretion over their accounts.

When we offer our trading program to investors, we essentially invite them to fly in our plane. A plane that we've been operating for many years. Our investors can rest assured they will really fly in this plane. They don't have to fear seeing me or one of my colleagues spreading our arms, desperately trying to lift the plane in the air. Our program is a fine piece of technique.

This trading discretion of course doesn't imply that we can do whatever we want. Our clients authorize us to invest for them pursuant to our Diversified Trend Program or a customized version thereof. And although we use trading rules when we implement the program, we don't sell these specific rules. We offer the whole program, which includes the services of our entire team, who implement the program. In this respect, our service is somewhat comparable with that of an airline. It uses planes, but it doesn't sell planes. It offers flights. And it's the responsibility of the people working for the airline to ensure that its planes reach their destination.

And yet, it is us — human beings — who are flying that plane. It always has been. With respect to basic questions like: "Why are we long lean hogs?", or "Why is the long position in EU CO2 emission allowances that sizable?", or "Why was the 2-yr T-note contract sold at this particular price?", we realize that the answer "Because it is in accordance with our program." may offer comfort. These investment decisions are the result of following rules that have been thoroughly tested, in historic simulations and — more importantly — in real life trading.

"Most of the time a human error is not about intervening, but about not intervening."

However, if I ask these exact same questions to our staff and their response would be: "because the system says so", we would have a serious issue. We ourselves are responsible for the strategy including the rules that are part of it. It's essential to be the masters instead of the slaves of our machines. This again can be compared with an airline. To questions like: "Why are we flying over Iceland?", or "Why are we flying at this altitude?", we wouldn't want the pilot to answer: "because the autopilot did so." If the pilot didn't agree with the course or altitude, we would expect the pilot to have intervened. Making such decisions is their job, their responsibility.

Fact is, every now and then a plane crashes. And indeed, investigations of such crashes often uncover a human error. Does this imply that the human element can better be eliminated? Absolutely not, because most of the time the human error is not about intervening, but about not intervening. For instance, a pilot who should have taken over the misled autopilot but didn't (or wasn't able to, as was the case with the dramatic crashes of the Boeing 737 MAX in 2018/19). But the pilots aren't the only persons responsible for a safe flight. Whenever a plane has landed, technicians thoroughly check the plane and, if necessary, repair it before it is allowed to take off again. If these people do not intervene correctly the plane could crash as well.

The introduction of the autopilot has been an important technological advancement in the airline industry. And it came with a fundamental discussion about the role and above all the responsibility of the human pilot. (A similar discussion is now going on with respect to self-driving cars.) I know people who prefer pilots not to be able to overrule the autopilot; an important argument is the Germanwings tragedy in 2015. I respect this view, but I don't share it. I trust people more than machines, if only because people can be held responsible for what they do. And equally important: for what they should have done. The same holds for investing. I believe it is vital that our people can take, and do take responsibility for their part in the investment process. For the things they do, as well as for the things they could have done but didn't.

Eliminating discretion allows us to not intervene in situations where an intervention would actually be the most prudent course of action. It essentially relieves our staff from their responsibility. (Which puts the slogan "eliminating the human emotion from the investment process" in a somewhat different light.)

In our industry, technological advancements have also blurred the view on human responsibility. The move from floor to screen trading has been an important catalyst, enabling execution algorithms to replace human traders. This seems to have removed an important part of the human element from the execution process. But does this also eliminate the human responsibility from this process? And if not, should human intervention in this process then be regarded as a discretionary input? And would such discretionary input make the strategy less systematic? And therefore less reliable? In the age of floor trading, all execution was done manually, but no one questioned whether that undermined the systematic character of the strategy. So the contours have been shifting.

If we listen to the various voices in our industry, we now seem to be at a crossroads. Some systematic managers vocally distance themselves from anything that sounds like discretion, while others are open about their use of discretion when the circumstances ask for it. Having said that, I believe that the fierce resistance against discretion to some extent is just a matter of positioning. (Which, you could argue, is not that different from the "100 percent systematic" answer in our AIMA questionnaire.)

But it isn't just marketing. It represents a fundamental choice every systematic manager has to make. I believe that responsible investing and the use of discretion are actually two sides of the same coin. You cannot accept one side without accepting the other. Our position is clear: systematic trading is not flying on autopilot. "The system says so" can never serve as an excuse for irresponsible behavior. We have learned to listen to the system in exactly the same way as that millions of people listen to music every day: we only listen when it sounds good. If it doesn't sound good, it is our responsibility to adapt it. And to clarify this position in the next update of the questionnaire, we will change our answer into "100 percent systematic as well as 100 percent discretionary".

"Our position is clear: systematic trading is not flying on autopilot."

Take Emotion out of the Equation

By Eugeniu Guzun – HedgeNordic

Thomas Nygaard, Founder – NorQuant

Money managers frequently operate in the context of risk and uncertainty, even more so in a market environment coloured by out-of-control inflation, impending recession, an ongoing war, a looming energy crisis, among others. Taking risks and making decisions in the face of uncertainty is certainly a complex and error-prone process. Luckily, systematic and rules-based investment approaches can help take human emotions out of the equation when trying to stick to a long-term strategy.

Thomas Nygaard, the founder of Oslo-based quantitative asset manager NorQuant, has observed the trend of larger, longer-term-oriented investors such as family offices and institutional investors starting to use a quantitative approach to investing

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in order to reduce risk, save costs, and increase returns. "The asset management industry used to be based on a lot of qualitative analysis, where analysts had to travel around to visit companies and talk to management teams," says Nygaard. While this qualitative research is still essential for price discovery, "more and more research shows that a quantitative approach provides superior results at lower costs."

Having launched rules-based multi-asset fund NorQuant Multi-Asset in January 2021, Nygaard acknowledges the benefit of taking human emotions out of the investment process. "We have experienced uncertain times since we started the fund in January 2021, and it can be very tempting for a manager to adjust a little bit, or wait a little bit or do something else when the really unusual is happening," says Nygaard. "We haven't seen any evidence suggesting that employing a more active discretionary approach would have improved our returns."

"Our rules-based model is not dependent on me, on my market views or any of my colleagues," elaborates Nygaard. NorQuant consider the market has fully priced in all available information, investor views or fears, with their quantitative strategy designed to create a stable, well-diversified portfolio able to access differentiated sources of return across different asset classes. "We believe everything is priced in the markets, so we put together a strategy that is not dependent on us predicting any market developments."

MULTI-ASSET MOMENTUM MODEL

NorQuant Multi-Asset employs an asset class momentum strategy implemented using exclusively exchange-traded funds (ETFs) across four liquid asset classes – equity, bond, real estate and commodity. The main cornerstone of its rules-based strategy is getting exposure to momentum in asset classes. "The momentum factor, of course, is mostly known for individual stocks, but there is a lot of research discussing the momentum effect at the asset class level," explain Nygaard.

> "The momentum factor, of course, is mostly known for individual stocks, but there is a lot of research discussing the momentum effect at the asset class level."

The momentum effect is most frequently measured based on a trailing 12-month period, but many studies also report momentum-investing success over shorter time windows of six and nine months, according to Nygaard. "Therefore, we use different ways and windows to capture momentum." NorQuant Multi-Asset relies on the ensemble averaging process of creating multiple models – based on how momentum is measured and the horizon over which it is measured – and combining them into a strategy-of-momentum strategies as opposed to using just one model. "We are using the ensemble approach that is also used in machine learning to limit the risk of overspecifying the model," says Nygaard. "We are trying to avoid the biggest mistake one can do when designing a rules-based strategy, which is overfitting on past data."

Subject to a number of asset class-level limits, NorQuant Multi-Asset seeks to capture momentum across equity, bond, real estate and commodity markets using ETFs. The rules-based fund can allocate up to 100 percent in equity ETFs, a maximum of 70 percent in bond ETFs, and a maximum of about 40 percent in commodity and currency ETFs, respectively.

"Equities has been the best performing asset classes over many decades, so our model can allocate 100 percent to this asset class," explains Nygaard. The strategy can reduce the allocation to equities to zero in an extreme and prolonged crisis, but will likely always maintain some equity exposure. Having started with a 75 percent allocation to equities in January 2021, NorQuant Multi-Asset reduced its equity exposure to below 25 percent earlier this summer.

Currently exposed to four asset classes only, the NorQuant team continues to evaluate the possibility of adding new asset classes to its investable universe. "If new types of asset classes emerge, or if existing asset classes become available for investing in a cheap and efficient way, we will definitely consider expanding our universe," says Nygaard. "We are looking for liquid asset classes that are uncorrelated or little correlated with the asset classes we are currently investing in," he continues. "For our portfolio optimization, we want to add asset classes that make our multi-asset portfolio more robust and diversified, not less."

DIVERSIFICATION – THE ONLY FREE LUNCH

By employing a multi-asset approach to investing, NorQuant Multi-Asset seeks to capitalize on the only free lunch in investing: diversification. "Diversification is perhaps the best word that describes our strategy," says Nygaard. Warren Buffett has long been a proponent of owning a well-diversified portfolio of stocks via ETFs as a means of building wealth over time. "What we have done with multi-asset investing is taking one step further," emphasizes Nygaard. "Instead of only investing in stock indices, we also saw the opportunity to get exposure to other asset classes through cheap, and efficient ETFs."

"Over long periods when stocks don't generate much return, our strategy has the opportunity to get returns from other asset classes," says Nygaard. NorQuant Multi-Asset can invest in a wide range of ETFs, starting from equity ETFs offering exposure to U.S. or European equities to broad-based commodity ETFs offering exposure to different commodities.

"The fund has returned over 20 percent in Norwegian kroner since we launched in early 2021, and quite a bit of that return comes from commodities, of course," reveals Nygaard. "We have had a real bull market in commodities and the fund capitalized on that, but we also made money in the bond markets, via our investments in U.S. government bonds," he elaborates. "This shows that our model is quite dynamic and that we managed to capture asset class momentum across different asset classes and regions, even bond markets."

"After spending many years developing a rules-based strategy and computing hundreds and thousands of simulations with different parameters, our main conclusion is to keep it simple," concludes Nygaard. NorQuant Multi-Asset, therefore, seeks to represent a simple solution for multi-asset diversification.

The Wavebreaker

By Eugeniu Guzun – HedgeNordic

Trend-following CTAs have become commonplace in many institutional-grade portfolios as an insurance policy against extended downturns, with their popularity – and the likelihood of success – often increasing in times of turmoil. To improve the performance of trend-following strategies in environments with abrupt changes in market momentum, some managers have begun to incorporate a dose of "macro" investing.

An all-Nordic team of four led by Lars Wind has launched Wavebreaker, a quantitative trend-following strategy combined with a systematic asset allocation strategy and complemented by discretionary macro overlays. "We always take a more fundamental approach than most other CTAs," explains Lars Wind, who launched the first iteration of this strategy at one of the world's largest sovereign wealth funds, Abu Dhabi Investment Authority (ADIA), back in 2006. Wind and the strategy's co-manager Betina Wolf-Andersen later took an internal ticket of $200 million from Danish pension fund ATP, which had grown to about $500 million before the platform was closed in 2012.

The duo was later joined by Jan Bak and Thomas Gunnarsson, and in January 2019, the Wavebreaker strategy set sail as a managed account and then launched in an Irish fund structure at the beginning of 2022. "Wavebreaker is a trend-following quant system designed to be integrated with macro trading…and this is Wavebreaker in a nutshell," says Wind, the main architect behind the strategy. Wavebreaker relies on two separate quant-focused strategy blocks; one of systematic trend-following strategies seeking to capture longer-term trends across asset classes, another of systematic asset allocation strategies seeking to capture yield income and equity market risk premiums.

"Typically, we have 70 percent of our risk allocation to core trend-following and the remaining 30 percent to our asset allocation side," explains Wind. "These two components complement each other very nicely and they create a very stable return profile that still retains the crisis alpha ability of a traditional CTA strategy," he emphasizes. "Then, when two discretionary elements – one for each of the core allocations – are included, it creates a more adaptive strategy that can add value and reduce drawdowns." Up more than six percent net of fees since launching in early January through the end of September with no significant drawdowns, the Wavebreaker fund has shown the resilience of its adaptive strategy in the volatile market conditions of 2022.

THE CTA AND AAA PILLARS

The Wavebreaker strategy's source of "crisis alpha" stems from a set of medium- and long-term trend-following strategies across several asset classes. "We have a trend-following system where we run eight different models across four main asset classes, with a medium-term and long-term model in each asset class," explains Lars Wind. With about 60 "trend-following" trades on average per year, Wavebreaker employs a long-term trend-following strategy. "We follow trends correlated to the business cycle or economic cycle," says Wind.

The question of "does this current position make sense in the context of fundamentals?" may trigger the use of the discretionary overlay. "We try to enhance the timing of entry and exit of the CTA models by applying fundamental research," explains Wind. "In this strategy, we always have the ability to neutralize some of the trend-following positions if it makes sense in the context of fundamentals," he continues. With this discretionary overlay, Wind and the team seek to solve the "basic issue that every CTA faces," namely the wait for a trend to reverse higher before entering or the wait for a trend to reverse lower before exiting. "There is always scope for improvement."

By their nature, trend-following strategies do not examine fundamentals and simply invest in the price direction that is prevalent in a given security. The discretionary overlay enables the strategy to respond more dynamically during trend changes, periods that usually create a difficult environment for traditional CTAs.

"At the beginning of the Covid pandemic towards the end of 2019, most CTAs on the systematic side, including us, were long equities because the trend had been up," recalls Wind. After studying previous pandemics and their potential impact on economies and financial markets, the Wavebreaker team brought down the equity exposure across its trend-following models as Covid cases in Italy started climbing before the big market sell-off in February and March. "We were out of our equity exposure substantially and up eight percent in Q1 of 2020 versus negative 20 percent for most stock indices. This is a good example of how we work on the discretionary side."

Wavebreaker also employs systematic asset allocation strategies to capture risk premia from traditional asset classes. "We run a traditional long-only systematic allocation model to invest in equities,

Lars Wind
Founding Partner and CIO – QLO Advisors

"We always take a more fundamental approach than most other CTAs. Wavebreaker is a trend-following quant system designed to be integrated with macro trading."

Lars Wind

Betina Wolf-Andersen
Founding Partner and Portfolio Manager – QLO Advisors

> "We try to enhance the timing of entry and exit of the CTA models by applying fundamental research."
>
> Lars Wind

bonds and gold as an inflation hedge," says Wind. "We try to capture some risk premiums throughout the business cycle," he elaborates. The Wavebreaker strategy can benefit from a discretionary overlay on the macro side as well. "We can eliminate our exposures entirely if we believe fundamentals warrant that decision," emphasizes Wind.

CTAs represent a great diversifier to these long-only strategies in traditional asset classes, according to Wind. "Systematic CTA strategies and asset allocation strategies work in great conjunction. This combination is designed to work throughout all market cycles," he continues. "We want to offer a product that can offer both stable return and crisis alpha. By design, Wavebreaker is supposed to be an absolute return product for long-term investing that works in all market conditions."

THE FUTURE OF CTAS

After frequently proving their characteristic as effective insurance against downturns such as the one in 2008, trend-following CTAs have experienced a prolonged period of underperformance post-financial crisis. "We can explain that long period of low performance in the context of fundamentals," argues Wind. "The performance of CTAs is highly correlated to the business cycle and that is not very well understood," he explains. "We have a very long period post the financial crisis with no or very little central bank moves, which perhaps explains why CTAs hadn't done very well. Central banks create trends across markets by design when moving interest rates, as changing rates affect equities, currencies and bonds."

"We have had a very long and quite stable expansion phase, which is not great for CTAs," acknowledges Wind. That environment has changed with the coronavirus pandemic. "We had a very violent businesses cycle in 2020-2021 and now we have another one due to sudden and very high inflation," continues Wind. "We are moving into a completely different regime more like the 1960s and 70s with rapidly shifting business cycles, which is probably going to be very good for Wavebreaker."

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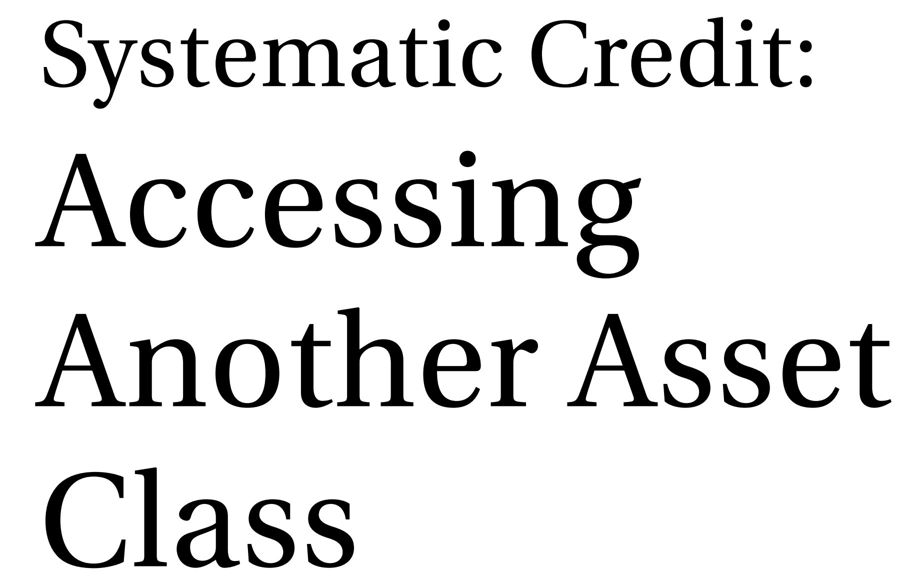

Systematic Credit: Accessing Another Asset Class

By: Irena Siyi Xiong, Quantitative Researcher – Arabesque IA

Systematic credit has drawn more limelight over the years as electronic trading of various credit instruments gained in volume and share of the market. The increased availability of high-quality data and growth of liquidity has made it possible for us at Arabesque AI to consider an expansion into credit instruments.

Both the valuations of corporate credit and equity are dependent on the overall health of a company. Therefore, they share many performance drivers, which we have already implemented into our equity analytical models. This makes it an interesting use-case for us to investigate our models' transfer-learning capabilities. Through various proofs-of-concept over the past year, we have demonstrated the ability to build analytical models for corporate credit bonds.

NAIVETY AND CHALLENGES

From a theoretical, machine-learning perspective, where we have built a strong pipeline of models for our equity predictions, the application to the credit universe is a simple problem. It can be solved by creating a new dataset and a new label which we then use to train and evaluate a baseline model from our existing pipeline. However, the reality is a lot more challenging, due to 1) heterogeneity of data in clustering and across time, 2) high dataset imbalances, 3) trustworthiness of data and last, but not least, 4) entity and exchange mapping challenges. Let's briefly look at each of these challenges.

Heterogeneity of data: When we consider equities, we can naively group them by the geographies they trade in, the sectors they conduct business in, etc. Ultimately, most of these instruments are non-preferential shares, otherwise known as common shares. Hence, they are comparable in a way. Corporate credit is awash with little details that makes it hard to compare.

Some bonds are callable or puttable, which gives either the issuer the right to redeem the bond before the maturity date, or it gives the holder the right to demand the paying back of the principal amount before the maturity date. In stocks, options are separate financial products and therefore don't need to be considered in pure stock-price forecasting. Further, the maturity dates of bonds are not aligned, one company can issue various types of bonds, such as secured bonds or convertibles and, to make it even more complicated, some European bonds are eligible for the ECB's asset purchase programme.

Hence, the grouping of „similar assets" for training is a harder task in bonds if one wishes to adjust for all these granularities.

To make matters worse, equities can almost always be assumed to be perpetually existing unless in the case of corporate events. On the other hand, bonds can almost always be assumed to expire at some point in time, except in the occasional case of perpetual bonds. This means that the universe refresh rate is exceedingly high. This presents many challenges for machine learning algorithms, not least limited to inconsistent dataset sizes or the unknown extent of survivorship bias vs. maturity effect. Datasets, therefore, need to be asset-agnostic to a certain degree and carefully constructed to maintain comparability.

High dataset imbalance: In equities we can either frame the problem as a price prediction or a returns prediction, either of which can be calculated by the prices of the equities (split/dividend-adjusted, which are still just intrinsic datapoints of the equities). In bonds, we can either frame the problem as a price prediction or a credit spread prediction. The former is a bond datapoint and the latter a combination of the bond yield versus the risk-free rate, typically a US Treasury bond. Here, we are implicitly predicting for „interactions" between two different assets— the bond and the risk-free rate. Moreover, when we train for a target label of a minimum spread widening/ narrowing, we find stark class imbalances. These are more pronounced than the same setting in equities of minimum return requirements. The imbalance often calls for the need of readjusting the loss function where for trading cost reasons we would value one class over the other. For example, it is easier going long on a bond than to short a bond compared to the equities world.

Trustworthiness of data: The challenges above are compounded by the deteriorating quality of data in bonds of lesser-known issuing entities or lower credit ratings. In a trading landscape where OTC trading still contributes a significant share of the liquidity, bid/ask data and volume recorded from electronic markets are sometimes misleading, and worse, untradeable. This not only influences the training of the models but also the executability of credit trading signals. Often, this means sanity checking the data manually. The trustworthiness of data also feeds back to design on the type of trading decision horizons and therefore the target labels for the credit model.

Mapping of entities: Many commercial data providers carry their own asset mapping IDs. As bonds are issued by firms that, most of the time, also have issued their own shares means that we have an incentive to link equity IDs to the bond IDs. The mapping is important for understanding where the bonds lie on the capital structure and what credit risks they bear. This is less of a problem when one sources data from the same data provider but quickly becomes a tedious task when mapping across databases.

MEASURING THE QUALITY OF A SYSTEMATIC CREDIT MODEL

For any system, there must be a way to conduct quality checks. For machine learning systems, we can rely on metrics such as accuracy, error sizes, f1-scores etc. However, these might not be sufficient for models that produce forecasts for more illiquid holdings. On longer holding periods, it is important to understand the models from a fundamental analyst's perspective. This means 1) understanding the behaviour of different machine learning systems and algorithms, 2) understanding the contribution and importance of different input features, and 3) understanding the variability of model outputs.

Model response to datasets: We know that different algorithms respond differently to the same dataset. Training an ARMA model will yield different outcomes as a Gaussian process model. Therefore, we need to monitor the performance of each model for the same dataset on their out-of-sample prediction power. Given known issues with input data and potential clustering of erroneous data, it is also important to understand how the algorithms respond to corrupted data at various segments of the datasets, i.e., response to adversarial attacks. As different models have different data requirements, i.e., i.i.d. variables for some statistical models, and large enough datasets for neural nets, we also investigate the models' performance when varying sizes of datasets.

However, this sometimes results in overgeneralizing and glossing over key differentiating features of bonds. Understanding these aspects is key to choosing models given our aforementioned challenges of persistently wide datasets in credit space.

Feature importance: As we vary the models, the large number of data points we feed into the models makes it hard to differentiate which really contain information, and which are simply noise. We can select features by comprehensively searching through the perturbation of features to identify gains in e.g., accuracy. But this is extremely computationally expensive and only works for one instance of the {model, dataset} set when we could possibly have multiple datasets over the years and different clusters. We can map the feature importance easily when using an XGBoost model through LIME/SHAP algorithms, but these are not necessarily applicable to the other models; the same goes for statistical tests on model coefficients. A hack is to combine a leave-one-out algorithm with a blanket blackbox model representing the entire system of models to map from a subset of features to our produced signals.

Variability of model outputs: Models produce signals that can change as fickle as I change my mind when choosing flavours in an ice cream parlour. A common way to deal with this is to smooth signals over time through moving averages. For systematic credit strategies, however, we need to intuitively understand the fickle signals – if we smoothen the signals, surely that means we cannot be that confident about the models' decisions? To deal with the volatile signals, we can look at measuring the uncertainty of predictions via inductive conformal prediction which also nicely avoids the need to consistently retrain models.

ABOUT ARABESQUE AI

Arabesque AI was founded in 2019 as part of the Arabesque Group. We developed our proprietary Artificial Intelligence Engine to forecast stock prices globally on a daily basis. On top of our AI, we built and launched AutoCIO, a platform that creates bespoke investment strategies. Using AI and Big Data, AutoCIO offers hyper-customization, enabling investors to align their investment and sustainability criteria. At Arabesque, AI is not only a buzzword. We advise over $450mn on our platform, proving that AI is ready to be used in practice.

Kerim Celebi, Portfolio Manager – Brummer Multi-Strategy

A Year of Crisis Alpha for Brummer Multi-Strategy

By Eugeniu Guzun – HedgeNordic

Multi-strategy managers acknowledge that different investment strategies have different return characteristics and that performance can vary across strategies and time. Therefore, they can build well-diversified portfolios with a more predictable and less volatile return stream than an individual strategy may have under different macroeconomic conditions. This is also the goal of Brummer & Partners and its active, multi-strategy vehicle Brummer Multi-Strategy.

Brummer Multi-Strategy (BMS) is a multi-strategy hedge fund investing in strategies managed within the Brummer & Partners group. Market-neutral long/short equity sector specialists helped BMS achieve its second-best annual performance in 2020. The two new market-neutral sector specialists in financials and industrials launched last year have also started out well, contributing positively in a challenging market environment for stock

> "A genuine multi-strategy approach combines both discretionary and systematic strategies to create a more robust and diversified portfolio, generate crisis alpha and more consistent returns across a wide range of market environments."

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pickers. But in this year's volatile, uncertain and inflationary environment, performance has so far been driven, to a large extent, by systematic trend-following strategies. Brummer Multi-Strategy gained 7.7 percent and BMS 2xL advanced 14.5 percent over the first three quarters of the year.

THE BRUMMER ALLOCATION TO TREND-FOLLOWING

"Brummer Multi-Strategy's return this year has to a large extent been driven by the trend-following strategies, generating crisis alpha and being profitable across nearly all asset classes," says Kerim Celebi, Portfolio Manager of Brummer Multi-Strategy. The systematic trend-following strategy trading developed markets advanced 47 percent in the first nine months of the year, while the systematic trend strategy trading alternative markets gained 24 percent. "Our portfolio has profited from strong trends in both developed and alternative markets (more emerging markets focused) with e.g. strong upward trends in rates, the U.S. dollar, power markets and various commodities, and the strong downward trend in equities."

Brummer Multi-Strategy had an allocation to trend-following below 20 percent at the beginning of 2021 and 32 percent at the end of last year. At the end of August this year, BMS had a 39 percent allocation to systematic trend at the end of August. "We significantly increased our allocation to the systematic trend followers in both developed and alternative markets already last year mainly from a risk management standpoint," says Celebi. "We wanted to increase the crisis alpha component in the portfolio given the many warning signs we saw, in particular with inflation spiralling upwards and central banks being deep behind the curve, and a larger degree of uncertainty in the macro environment."

"A systematic strategy has the advantage of not being governed by emotions, relying on a rigorous research process and strong risk management while being able to express far more trading ideas than a discretionary manager, hopefully benefitting from superior diversification both in terms of ideas and markets traded."

A new systematic macro strategy launched in June this year that utilizes a cross-sectional relative value approach using both technical and fundamental/macroeconomic input data to trade alternative markets has also started out well in 2022. "We also added a systematic macro strategy trading developed markets, predominantly relative value focused as of 1st of October," confirms Celebi.

SYSTEMATIC VERSUS DISCRETIONARY

One key benefit of a multi-strategy vehicle such as Brummer Multi-Strategy is the ability to get exposure to both discretionary and systematic strategies, which offers a significant potential diversification benefit due to their lack of correlation – particularly during tail events. Systematic and discretionary strategies have their virtues and pitfalls and may differ in many ways. A genuine multi-strategy approach that combines both discretionary and systematic strategies can offer diversification, crisis alpha and a more consistent return stream across a wide range of market environments.

The advantage of systematic strategies lies in the lack of emotions in the decision-making process. "A systematic strategy has the advantage of not being governed by emotions, relying on a rigorous research process and strong risk management while being able to express far more trading ideas than a discretionary manager, hopefully benefitting from superior diversification both in terms of ideas and markets traded," emphasizes Celebi.

QUANT STRATEGIES GOING FORWARD

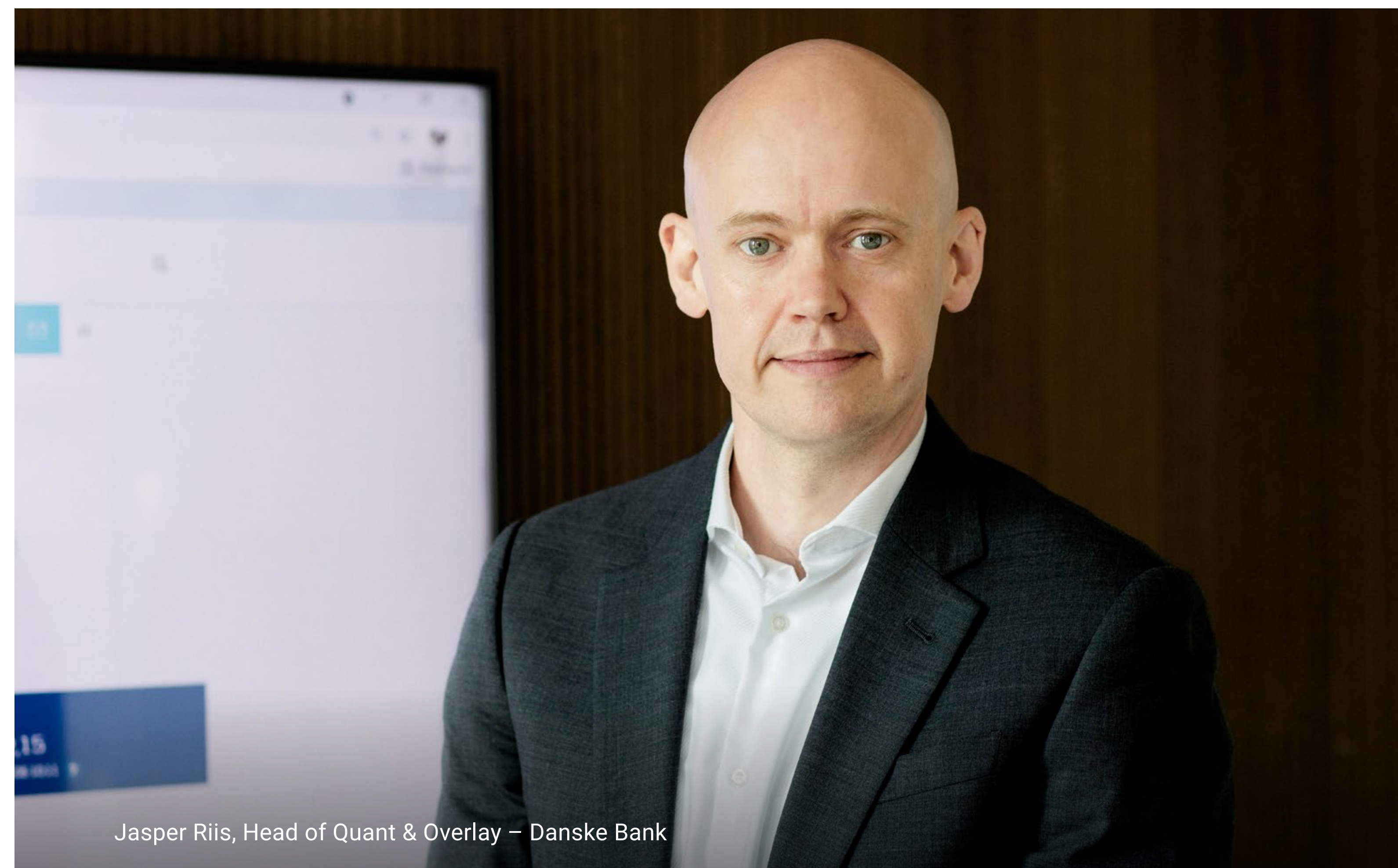
Systematic trend following strategies may have proved their worth once again in the difficult market conditions of 2022. Celebi believes the return prospects of quantitative strategies and which strategies may be the most promising will, to some extent, depend on the type of market environment that materializes. "Our systematic trend following strategies are agnostic and can be profitable in many different scenarios, especially during crises. They are designed to profit from trends (up or down). They are typically long volatility and generally thrive during periods of great change," considers Celebi.

"Our other systematic strategies, macro relative value in particular, are designed to benefit from dispersion as they rely on relative value," Celebi comments. An environment where countries and instruments within different asset classes are moving in different directions due to differences in economic activity, inflation, and different monetary and fiscal policies, "should, in theory, be conducive for these strategies," according to Celebi.

"Many factors continue to point to higher volatility and increased dispersion both within but also between asset classes and countries, which should in general be conducive for the systematic strategies in our portfolio," Celebi says and concludes by emphasizing that "being liquid and well diversified will continue to be key."

Danske's Quest for True Alternative Risk Premia

By Eugeniu Guzun – HedgeNordic



Jasper Riis, Head of Quant & Overlay – Danske Bank

"You can find risk premia in the market all over the place, but we are mostly looking for risk premia that market participants are aversive to."

Markku Vartiainen

What fund managers may have considered "alpha" in the past may well be codified as today's or tomorrow's alternative risk premia. With the emergence of new – alternative – betas, the unexplained portion of returns – alpha – is shrinking, and, thereby, getting reclassified as alternative beta. Rather than focusing on finding alpha, more alternative risk premia strategies seek out alternative return sources that offer positive expected returns and diversification.

The Quant and Overlay team at Danske Bank Asset Management headed by Jasper Riis has launched a hedge fund seeking to capture alternative risk premia across equities, fixed income, credit, and currencies. More importantly, the newly-launched fund overseen by Chief Portfolio Manager Markku Vartiainen combines the carry strategies harvesting excess risk premia with defensive strategies that protect the portfolio against significant drawdowns.

TRUE ALTERNATIVE RISK PREMIA

"What we are capturing is true risk premia as compensation of risk, rather than alternative risk premia derived from behavioural risk factors such as value or size, or other risk premia that persist because of human behaviour," explains Vartiainen. "You can find risk premia in the market all over the place, but we are mostly looking for risk premia that market participants are aversive to. We recognize that the carry feature, in one way or another, is often associated with such risk premia," he elaborates. Think of volatility risk premium, which is based on the premise that implied volatility is persistently priced above realized volatility as market participants are willing to pay a premium for insurance.

Using long and short positions in derivatives, Danske Bank's Global Alternative Opportunities fund employs rules-based carry strategies that play the role of return generators. The carry strategies are designed to capture alternative risk premia, "a compensation for the transfer of specific risk by risk-averse market participants in relation with carry, volatility, trend and structural styles." As seen in practice, however, some risk premia exhibit tail beta – or hide some residual beta – and can fall along with equities. "Such strategies are, in aggregate, expected to show a positive beta exposure to global equities," according to Vartiainen.

"The carry strategies are the workforce of the fund," explains the Chief Portfolio Manager. "In a normal or semi-normal market, carry strategies should provide consistent yield," he elaborates. However, carry strategies exhibit risk-on, risk-off dynamics, according to Vartiainen. "Carry or risk premia is a compensation for the risk that you are taking, hence, carry strategies follow a risk-on, risk-off dynamic." For that reason, Danske Bank's recently-launched fund also employs a set of rules-based defensive strategies designed to do most of the heavy lifting in terms of downside risk mitigation.

Markku Vartiainen, Chief Portfolio Manager – Danske Bank

SUPPORTING LEG: THE DEFENSIVES

"The defensive strategies are particularly designed to have a low cost of carry, implying that we are able to run these defensive strategies with a low cost in a standard market yet they provide a robust hedge at the time when markets enter a drawdown," explains Vartiainen. "The secret sauce of the fund is actually the defensive strategies that we are able to construct in a way that they don't ruin the performance in standard market conditions and yet provide a robust hedge in down markets."

One can purchase portfolio protection at any time, but that protection comes at a cost: sometimes very high. "It's easy to find protection," says Jasper Riis, who is heading the Quant and Overlay team at Danske Bank Asset Management. One can simply buy a put option as protection, but this type of protection can eat away all the fund's returns before bringing the desired benefits in the form of downside protection. "Scanning the universe of asset classes and picking out the defensive exposure that helps the portfolio at a low cost is the real value of our very systematic – yet flexible on implementation – approach," emphasizes Riis. "If nothing bad happens, which we hope that is the case, we don't pay too much premium from owning this type of protection."

STRATEGY EVOLUTION

Danske Invest Global Alternative Opportunities runs between 10 to 15 rules-based systematic strategies at any given time, the majority of which are carry strategies. "The strategies are systematic but the allocation across strategies is not static," points out Vartiainen. "We are constantly monitoring the portfolio, and running a lot of computations, calculations and simulations on a daily basis to determine the optimal allocation to each strategy at any given time."

The hedge fund has a fairly broad mandate, allowing the portfolio management team to set up new strategies to capture newly-identified risk premia. "We are not stuck into a certain type of risk premia and the strategies are evolving all the time," says Riis. "We can implement both linear strategies in credit, for instance, or non-linear strategies that can be both static in their nature or more dynamic," he elaborates. "Within the guidelines, we are able to expose ourselves in a linear and non-linear format, across asset classes and even across different underlyings within an asset class."

THE OBJECTIVE: STEADY LEVEL OF RISK

The fund's objective is to deliver attractive and consistent risk-adjusted returns, eying a long-term return of 6-7 percent over risk-free rates. To meet this objective, Vartiainen and his team run a fairly steady level of overall risk in the portfolio, according to Jasper Riis. "However, the composition of the carry basket of strategies can change in this cross-asset lens, where we look to identify the risk premia that are most attractive to capture," he elaborates. The composition of the overall portfolio also depends on how cost-efficient the defensive strategies are to implement. "The composition depends on how attractive it is to get defensive strategies on board or not. In situations where we don't see much cheap protection out there, we can go on to run a less aggressive carry portfolio to maintain the level of portfolio risk," says Riis.

Alternative risk premia strategies have sought to fill the role of bonds in a diversified portfolio in recent years, notices Riis. "There is a lot of focus everywhere on being less dependent on that diversification coming from bonds," he points out. "Interest is quite broad-based because the search for diversification and desire to reduce the dependency on bonds is still there. In that context, we have increased the focus and allocation to alternatives across our solutions for several years," he continues. One limitation of some alternatives such as hedge funds, however, is the inability of non-professional or non-institutional investors to invest in the often inaccessible – for the broad public – hedge funds. "Some of our customers have not been able to invest in the typical hedge fund structure, hence the reason for this fund launching in a UCITS format."

"Scanning the universe of asset classes and picking out the defensive exposure that helps the portfolio at a low cost is the real value of our very systematic – yet flexible on implementation – approach."

Jasper Riis

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Richard Murray, CEO – Hilbert Capital

Harvesting the Crypto Vol

By Eugeniu Guzun – HedgeNordic

Volatility is a feature of most asset classes, as it is for cryptocurrencies. While most investors fear volatility, with the conventional view equating price fluctuations with risk, there are ways to profit from volatility. One such way is volatility harvesting through the systematic rebalancing of a portfolio.

Volatility harvesting involves a continuous process of buying low and selling high, and portfolio managers can harvest more returns through rebalancing as volatility increases. Due to high volatility, cryptocurrency markets are replete with opportunities to harvest volatility. Swedish digital assets investment firm Hilbert has been using an algorithmic model dubbed Caerus to capture alpha-generating rebalancing opportunities within the crypto space since 2017.

To illustrate the concept of volatility harvesting, picture a portfolio worth $200 that is equally allocated between Bitcoin and cash. Should the price of Bitcoin drop from a starting value of $30,000 to $15,000, the portfolio would now be worth $150 with $50 in Bitcoin and $100 in cash. In the next step, the portfolio is again equally weighted between Bitcoin and cash, with this rebalancing process requiring the use of cash to buy $25 worth of Bitcoin to arrive at a portfolio of $75 in Bitcoin and $75 in cash. If Bitcoin appreciates to $30,000, the entire portfolio would now be worth $225 instead of $200 for a buy-and-hold approach.

"The good thing about volatility harvesting is that it can work in upward trending markets, in sideways trending markets, but also in downwards trending markets exhibiting volatility."

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"The good thing about volatility harvesting is that it can work in upward trending markets, in sideways trending markets, but also in downwards trending markets exhibiting volatility," explains Richard Murray, the CEO of Hilbert Capital. This year is an example of volatility harvesting outperforming a buy-and-hold approach. "Cryptocurrency markets clearly have been in a downward drift in 2022, so market directionality has been a drag on performance. Volatility harvesting has offset some of that drag."

The best environment for a volatility harvesting strategy, on an absolute basis, is an upward trending and volatile market. "The constant rebalancing, buying low and selling high, adds additional returns both in an upward trending and range-bound market environment," reiterates Murray. A volatility harvesting strategy, however, still remains a directional trade by providing exposure to the appreciation of cryptocurrency markets – in addition to taking advantage of price volatility through algorithmic trading.

Hilber Capital's first fund, Hilbert Digital Asset Fund, has been entirely relying on the Caerus volatility harvesting strategy since launching in January 2019. "The fund offers exposure to the broader crypto asset class with an additional contribution from volatility trading," explains Murray. The fund has "a mandate to be 100 percent risk-on at all times," according to the CEO of Hilbert Capital. Despite outperforming on a relative basis, by design, the return profile of Hilbert Digital Asset Fund is volatile and can experience drawdowns along with the broader market.

LOWER RISK EXPOSURE TO CRYPTO

In response to increasing demand for cryptocurrencies from traditionally more risk-averse institutional investors, Hilbert Capital has launched a new investment product offering lower-risk exposure to the crypto market using the same Caerus volatility harvesting strategy. "A full risk-on volatility harvesting strategy goes up and down with the market despite adding a big chunk of trading alpha on top, so we asked the question of how to reconstruct the core trading approach to offer something that is more conservative," reveals Murray.

> "Hilbert Digital Asset Fund and Hilbert V1 Fund have common DNA in Caerus. V1 is by design more conservative with the goal of limiting the maximum drawdown to ten percent, and we size the volatility harvesting strategy according to that constraint."

The solution was Hilbert VI, which also uses the Caerus algorithmic trading strategy to build a volatility trading portfolio sized to limit the maximum drawdown to ten percent per year. "Hilbert Digital Asset Fund and Hilbert V1 Fund have common DNA in Caerus," says Murray. "While Hilbert Digital Asset Fund is designed to be at 100 percent risk-on at all times, Hilbert V1 Fund has limited crypto-market directional exposure in the range of 0.1-0.15," he elaborates. "V1 is by design more conservative with the goal of limiting the maximum drawdown to ten percent, and we size the volatility harvesting strategy according to that constraint." Since its inception on the 1st of May 2022, Hilbert V1 has produced a negative return of 4.3 percent, compared to a loss of about 60 percent for the broad cryptocurrency market.

Hilbert V1 Fund allocates only a portion of capital under management to the Caerus volatility harvesting strategy to maintain its pre-specified risk-return profile, leaving the fund with ample liquidity. The unused liquidity is used to execute more opportunistic trades in the still nascent cryptocurrency universe. "The core volatility harvesting strategy gives us all the risk we want, all the return we need, but we then use some of the liquidity outside of that to take advantage of opportunities that come and go," summarizes Murray.

OPPORTUNITIES THAT COME AND GO

The Hilbert team has two criteria for allocating capital to opportunistic trades. "First, the investment opportunity should not bring in additional drawdown risk, and second, it should provide a good level of incremental return," explains Murray. One such opportunistic trade was the funding rate trade, which involved being long Bitcoin and short perpetual futures, according to Murray. Bitcoin perpetual contracts, which have no expiration date, have offered carry arbitrage opportunities for investors looking to exploit inefficiencies between the spot and futures markets. During a bullish stretch, a carry strategy that uses a long position in the spot market and a short position in futures can generate a nearly risk-free return. With markets more bearish in recent months, such carry opportunities have diminished significantly.

"It was a very attractive trade, but this year the funding rates have been flat or negative, so we have not used it," says Murray. "The funding rate trade tends to work better in "risk-on" market periods when there are higher volumes of retails investors using futures to gain leverage," he elaborates. "A conservative return expectation from these limited-drawdown trades is 5-10 percent per year, but there will be periods when little or no return is possible, given our criteria," emphasizes Murray.

The fully-systematized Caerus algorithm assesses trade opportunities every 30 seconds across 1800 possible cryptocurrency combinations. The more opportunistic trades, however, are exploited on a discretionary basis. "Our team has done a lot of research in terms of developing an algorithm that systematically trades carry opportunities," says Murray. However, the conclusion out of the research has been that "what you might marginally gain in incremental additional returns is not a good trade-off with the new execution risk that you bring in," he emphasizes. "So we don't take that trade-off."

Instead, the Hilbert team seeks to quantify every part of the decision-making process. "We are a quantitative investment group and we quantify everything," says Murray, including the range of opportunities that can provide carry, the level of carry, the consistency of carry, the liquidity and counterparty risk, among others. "We quantify everything, but ultimately the team is making the choice of which opportunity to allocate to."

While these opportunistic trades come and go, Hilbert's volatility harvesting strategy is repeatable and scalable regardless of market conditions. It is not a "trade" or an "opportunity" or an "indicator," according to Murray. "In 100 years' time, if markets are 100 percent efficient given full information and we get to a state where no mispricings or indicators exist, Hilbert's volatility trading approach will be the only way to generate excess returns over a buy-and-hold portfolio," he concludes. "It's just math."

The Raisons d'être of Managed Futures

Why so many managers bucked the trend that was supposed to be your friend?

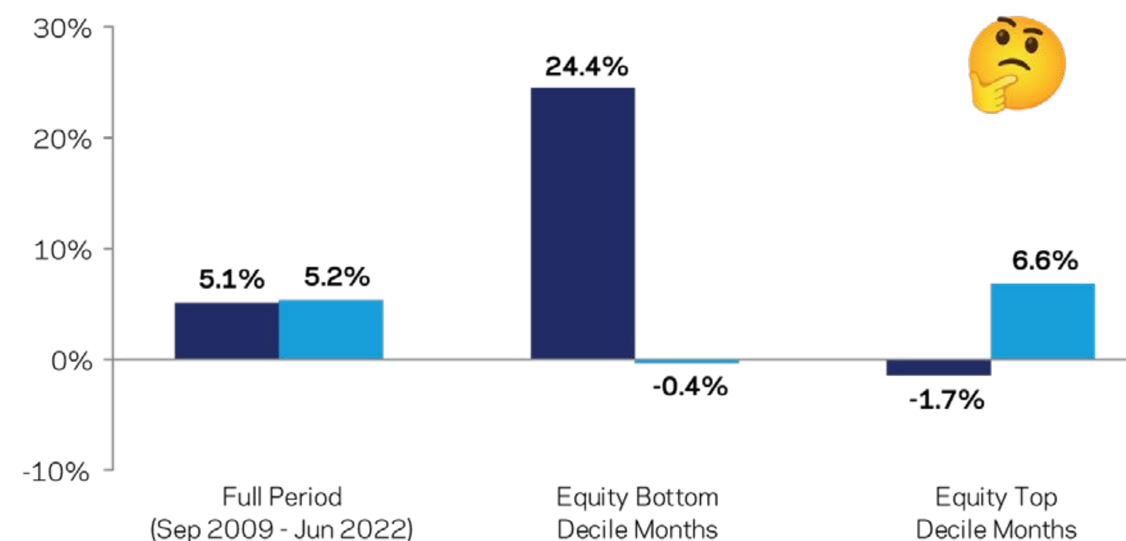
Cliff Asness, Founder, Managing Principal and Chief Investment Officer – AQR Capital Management

By Cliff Asness, AQR Capital Management

The Federal Reserve has an explicit dual mandate. Managed Futures strategies have an implicit one—specifically, 1) deliver positive returns on average and 2) generate especially attractive returns during large equity market drawdowns. This dual mandate is one of the big reasons managed futures strategies can be valuable in a portfolio. Unfortunately, by and large, the industry—intentionally or not—has been optimizing for one at the expense of the other. Admittedly I have a self-serving axe to grind here as we believe we stuck to the dual mandate and suffered for it for quite a while (but not lately!).

Exhibit 1 shows what I'm talking about, using the SG Trend Index as a proxy for the industry ("Industry Trend"), and the AQR Managed Futures Composite as a proxy of "Pure" trend-following. Both pass Mandate #1 (positive average returns), but not Mandate #2 (especially attractive returns when most needed). How can this be? The rightmost set of bars—performance when equities did especially well—is the smoking gun (I know it may seem odd for me to crow over the periods when we underperformed, but I think it will make sense soon).

Exhibit 1: Trend Performance during Top and Bottom Decile Equity Months



September 1, 2009 – June 30, 2022. Source: AQR, Bloomberg. "Pure Trend" is the AQR Managed Futures Full Volatility Strategy; "Industry Trend" is the SG Trend Index. Dates chosen to coincide with the inception of the AQR Strategy. Equity Top and Bottom Decile Months are the best and worst 10th percentile months for MSCI World over the period shown. All data is shown net of fees. Pure Trend is net of a 1.36% management fee per annum. Past performance is not a reliable indicator of future performance. For illustrative purposes only.

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AN INDUSTRY THAT GOT CARRIED AWAY

Let's go back a decade or so. Managed futures were a rare bright spot among alternatives in the Global Financial Crisis (GFC). However, since then—and until fairly recently—strategies built to profit from price trends have had a hard road to hoe. Since the GFC, markets have trended less than their historical norm. Also until fairly recently, while there have been some scary times, markets have generally been quite strong. Markets trending less than normal (i.e., a challenge for Mandate #1) and few tails to hedge (i.e., little need for Mandate #2) has been a desultory combination for the managed futures industry.

But bad times happen to good strategies. Everybody knows that. So, what's the right thing to do when a good strategy with over 100 years of evidence across a very wide range of markets and with solid economic intuition has a decade of tepid performance for reasons that are quite easy to explain? Naturally, you change it, right? This (in an admittedly snarky nutshell) is what seems to have happened to much of the managed futures industry.

Let's look at the facts. The first thing we'll want to analyze is exposure to equities, as during a bull market, exposure to markets should be a boon to average returns and a detractor in bad times. I use two versions of managed futures: the first is AQR's version of trend-following ("Pure Trend"), and the second is the industry in general, proxied by the SG Trend Index ("Industry Trend") and regress each on the global stock market.

	Pure Trend	Industry Trend
Alpha	5.5%	3.9%
(t-stat)	1.16	1.23
Market Beta	-0.10	0.09
(t-stat)	-1.07	1.37

Source: AQR, Bloomberg. "Pure Trend" is the AQR Managed Futures Full Volatility Strategy; "Industry Trend" is the SG Trend Index. Regression analysis is versus the MSCI World Index. Analysis is from September 1, 2009 through June 30, 2022 Dates chosen to coincide with the inception of the AQR Composite. All data is shown net of fees. Pure Trend is net of a 1.36% management fee per annum. Past performance is not a reliable indicator of future performance. For illustrative purposes only.

Over the whole period it looks like a behind-the-scenes victory for Pure Trend (i.e., AQR). If anything, we have been a slight hedge against market moves (though not statistically significantly), and the SG Index the opposite. Thus, the "problem" for Pure Trend isn't its alpha—it's that markets have gone up spectacularly. But we think it means we've stuck more to what managed futures is supposed to do.

Let's add one more thing to the regression. Anecdotally (from lots of sources) many managed futures managers try to improve their Sharpe ratios and realized total returns by adding carry strategies. That's fine if you're trying to improve Mandate #1, but carry is often a "risk on" strategy. Thus, it can become a real problem when it comes to Mandate #2. So now we'll add a simple carry strategy to our regression.

	Pure Trend	Industry Trend
Alpha	5.5%	3.0%
(t-stat)	1.14	0.94
Market Beta	-0.10	0.05
(t-stat)	-0.99	0.79
Carry	-0.01	0.13
(t-stat)	-0.05	1.53

Source: AQR, Bloomberg. "Pure Trend" is the AQR Managed Futures Full Volatility Strategy; "Industry Trend" is the SG Trend Index. Regression analysis is versus the MSCI World Index and a Hypothetical Multi-asset Carry Strategy. Analysis is from September 1, 2009 through June 30, 2022. Dates chosen to coincide with the inception of the AQR Strategy. All data is shown net of fees. Pure Trend is net of a 1.36% management fee per annum. For illustrative purposes only. Hypothetical data has inherent limitations, some of which are disclosed at the end of this piece.

The alpha gap has widened once more, with AQR now adding near double the alpha net of these exposures (exposures you don't want in managed futures if its job is to save you in a downturn). Which brings us to the betas—what about the exposure to stuff that compromises Mandate #2? The above table shows a 1.53 t-statistic on carry for the industry, and that doesn't pass traditional hurdles of statistical significance. So maybe there's really nothing there?

Actually, there is something but you can't see it in the above regressions. Below is an easier way to see it.

	Pure Trend	Industry Trend	Industry minus Pure Trend
Alpha	5.5%	3.0%	-0.70%
(t-stat)	1.14	0.94	-0.45
Market Beta	-0.10	0.05	0.12
(t-stat)	-0.99	0.79	3.75
Carry	-0.01	0.13	0.13
(t-stat)	-0.05	1.53	3.31

Source: AQR, Bloomberg. "Pure Trend" is the AQR Managed Futures Full Volatility Strategy; "Industry Trend" is the SG Trend Index. "Industry minus Pure Trend" is the difference between Industry Trend and Pure Trend, with Pure Trend scaled to achieve the same volatility as Industry Trend. Regression analysis is versus the MSCI World Index and a Hypothetical Multi-asset Carry Strategy. Analysis is from September 1, 2009 through June 30, 2022. Dates chosen to coincide with the inception of the AQR Strategy. All data is shown net of fees. Pure Trend is net of a 1.36% management fee per annum. For illustrative purposes only. Hypothetical data has inherent limitations, some of which are disclosed at the end of this piece.

It's the same table we just saw, but in the last column I take Industry Trend minus Pure Trend to show how far managed futures as an industry have strayed from what they purport to do.

This last table is why we feel pretty good about the choices we've made compared to the industry. The differences hurt us when things were mostly very good for the world—i.e., when market beta and carry strategies were doing well. But we didn't stray from our purpose. Our version of managed futures has been competitive, though slightly behind the SG Trend Index over the past five or so years of a raging bull market. And unfortunately, that's a horizon over which much of the world compares managers. However, adjusted for the industry's general bullish equity and carry exposures, we've actually won (albeit by a statistically weak amount) over our full history (and we argue that adjusting for these exposures fits the point of managed futures).

TATTLE-TAIL HEDGERS

We've now seen how "Pure Trend" and "Industry Trend" have differed on average. Industry Trend, in seeking to look better on Mandate #1 (positive returns on average), picked up exposure to things we'd expect to weaken its ability to deliver on Mandate #2 (especially attractive returns when most needed). We can see

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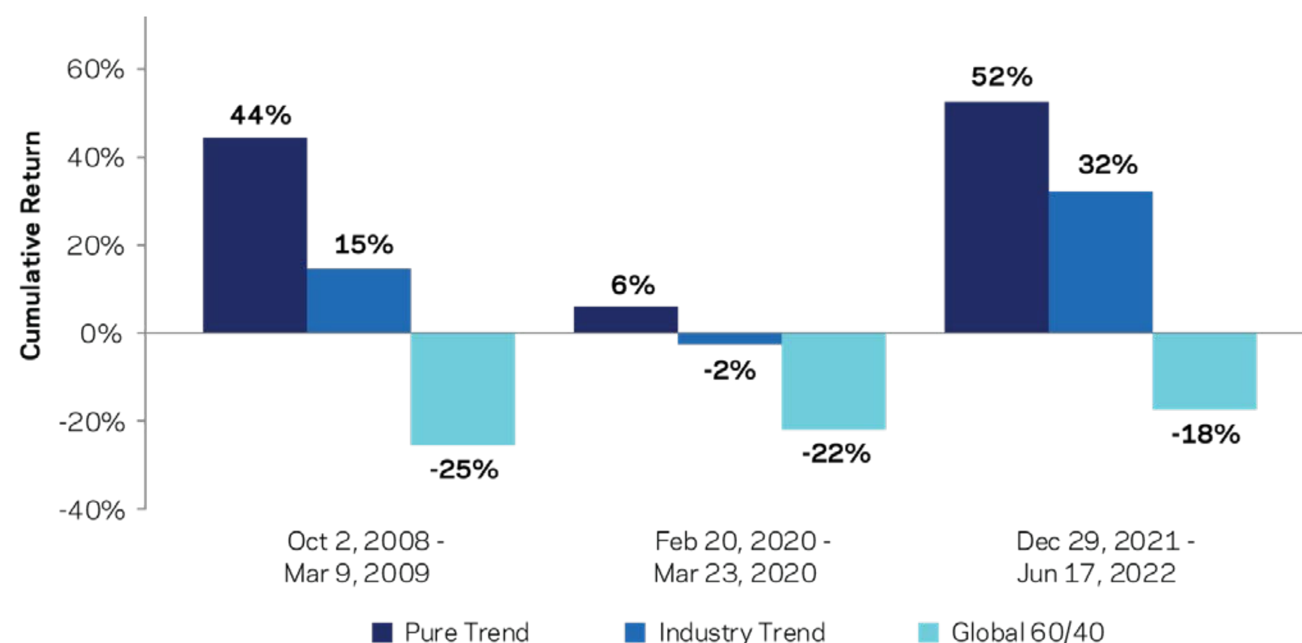
Exhibit 2: Hypothetical Performance in Three Drawdowns of Global 60/40



Oct 1, 2008 – June 30, 2022. Source: AQR, Bloomberg. "Industry Trend" is the SG Trend Index. "Pure Trend" is a hypothetical AQR Managed Futures series which is scaled to 15% volatility to approximate the volatility of the average strategy in the SG Trend Index. All data is shown net of fees. The hypothetical Pure Trend series is net of a 1.2% management fee per annum. Please see the end of this piece for a detailed description of this hypothetical data. Global 60/40 is 60% MSCI World and 40% Barclays Global Aggregate Hedged USD. Hypothetical data has inherent limitations, some of which are disclosed at the end of this piece.

this more directly, and perhaps more relevantly—regression averages are nice, but huge drawdowns for traditional assets are more to the point—by comparing their performance during the three worst drawdowns for traditional portfolios since the GFC.

These are not inconsequential numbers. The average drawdown of 60/40 across the three above is -22%. The average return of Pure Trend is 34%, meaning a 10% allocation to Pure Trend saved 5.6% on average in these drawdowns (and if it were a nice 20% allocation, you know you could double that, because math!). In contrast, Industry Trend saved you a bit more than half that.

I've got nothing against exposure to equities and carry strategies— but when wrapped into managed futures it can be a problem, as it is contrary to part #2 of their reason for living. In good times (e.g., most of the post-GFC period), the kinds of managed futures everybody likes best are the ones with the highest average return (as opposed to ones having the best defensive characteristics). However, what that can mean is the investors themselves have traded off one mandate for the other. Whether they've done that intentionally or by chasing returns too much is another question unanswerable with the data.

A weakened ability to deliver on Mandate #2 may be especially problematic today. One of the biggest areas of growth in the "alternatives" industry is in illiquids, such as private equity. I've cathartically written about how "great" smoothed returns can be for the investment manager—but for the investor, what you often get is a mirage of lower volatility and lower market risk, even though the underlying economic exposures are pretty much the same.

Smoothing returns helps conceal market drops that quickly recover, like the COVID shock. However, it can't help against a very protracted bear market where eventually you need to mark your positions. The bright side for managed futures strategies, though, is that they are designed to do well in exactly these types of slow-moving train wrecks. In other words, tough times for private equity tend to be great for trend-following. Thus, Mandate #2 is likely especially important for investors who have increased their allocations to privates and illiquids since the GFC.

STAND BY YOUR MANDATES

Like others, we always want to improve our process. But improving something that you already believe is a long-term good strategy is fraught, especially when in reaction to a period of weak returns. Biases can come in. Grizzled veterans like tried-and-true strategies; newer market participants are biased toward the cool and new— and these are often at odds with each other (guess which one I am😀). And regardless of when you decide to add something new to the process, something to always worry about is data mining.

But too often "innovation" is taken to mean "something totally new". It doesn't have to be; for strategies like managed futures, we think innovations can be—and ideally should be—firmly tied to the core thesis of the strategy itself (i.e., investors systematically under-react to information). This can help ensure changes don't come at the expense of Mandate #1 or Mandate #2.

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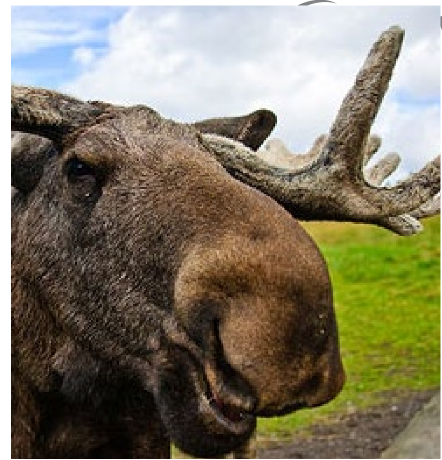

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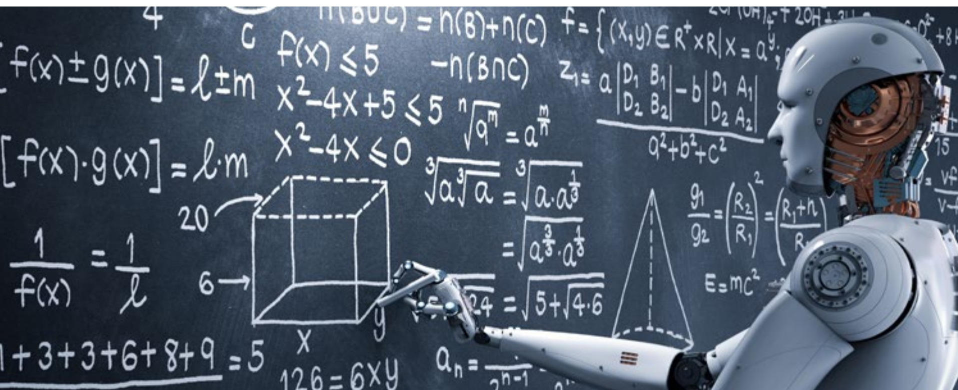

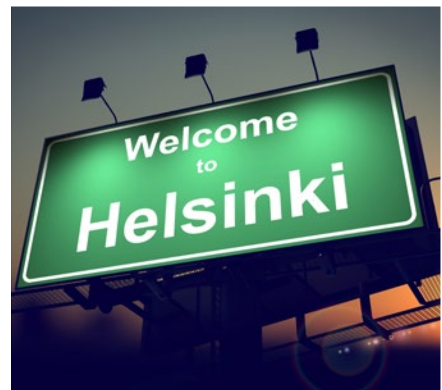

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