HEDGENORDIC

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SPECIAL REPORT
QUANT STRATEGIES

Contents

HEDGENORDIC

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.

PUBLICATION PLAN 2021:

October:	Portfolio Diversification
TBD:	Value / Quality Investing
November:	Alternative Fixed Income
December:	ESG in Alternatives

CONTACT:

Kamran George Ghalitschi
Nordic Business Media AB
Kungsgatan 8
SE-103 89 Stockholm, Sweden
Corporate Number: 556838-6170
VAT Number: SE-556838617001

Direct: +46 (0) 8 5333 8688
Mobile: +46 (0) 706566688
Email: kamran@hedgenordic.com
www.hedgenordic.com

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Editor´s Note...

Two Horses Butts

It is probably not much more than a decade ago that many quant managers took pride in repeatedly claiming that their basic trading system and models were essentially the same as they were when initially coded. Certainly this was the case in the CTA space where I took my first steps in the hedge fund space.

Since then, more often than not, these beasts have become much more complex. What used to be rather simple and plain trend-following strategies are now more sophisticated and complex multi-strat approaches supported by artificial intelligence and machine learning components.

There have been massive technological advances in trading and execution, computing power, available data and many more areas and today's quant strategies are among the most sophisticated and advanced available.

With all the advances, evolutions and revolutions though, what is left of the original philosophy and rational systems. Bear with me while I drift off a little to make my point. And agreed, a part of this story falls into the urban-legend category. Even if not entirely true, I find it to be a good story and it does paint the picture I want to show.

The standard US railroad gauge, the distance between the left and right rail, today is 4 feet, 8.5 inches (1435mm). Even by metric system-refusing American standards, that seems an exceedingly odd

number to settle for. Maybe it just occurred randomly. Spoiler: it did not! Up until the US civil war, there were multiple different gauges in use, which complicated the logistics for moving large numbers of troops and goods i as trains had to be loaded and unloaded when non-matching tracks met. A standardization was urgently needed. It was around that time that 4 feet, 8.5 inches was defined as the uniform standard across the United States for railroad gauges. A proactive, deliberate decision.

BUT WHY?

Well, those in charge of unifying the US railroad system were engineers who previously had built the wagon tramways in England. At that time, the most modern and sophisticated form of transportation. While there is some persistence and consistency, it does not explain the odd gauge. So why was that used?

Everyone seems to agree that this odd track size did originate in England from railway pioneer George Stephenson, who used the 4 feet 8-1/2 inch track gauge when building the first public rail line, the Liverpool & Manchester Railway, in 1830. In its day, it was the most modern and sophisticated means of transportation on the planet.

BUT WHY?

It was simply cheapest and most efficient to use the same jigs and tooling readily available and been used and produced by engineers making horse-wagons for centuries. But why that spacing? Put simply, it worked; when trying to use other wheel spacings, the wheels would break more often on the old long-distance roads in England, which were shaped by the ruts on the roads that give a firm and safe underground for the wheels and carriages. These ruts were well established and quite old.

In fact, they were nearly 2.000 years old and initially built by the Roman Empire's legionaries for transporting their goods and troops with their horse carriages. Over time, the constant and repeated traffic in the same line formed a pretty solid track, or rut, into the landscape. Everyone else was smart to adapt to that standard or risk slipping, getting stuck in the mud or just having a very bumpy ride.

The width of the ruts was simply defined by the width of those Roman carriages, at the time one of the most advanced and sophisticated forms of transportation. The width of a Roman carriage consequently was the width of the behinds of two horses next to another pulling those heavy cars. As simple as that.

BUT THE STORY CONTINUES:

Picture the mighty space shuttle, in her days the most advanced and sophisticated form of transportation, sitting on its launch pad and the two massive booster rockets to the left and right of the main fuel tank. The designers of these boosters would have preferred to build them a little fatter, but were restricted. Take a wild guess what diameter they settled for on the boosters. Yup!

Space Shuttle´s solid rocket boosters (SRB) were built by a factory called Thiokol, in Utah. Due to their size, the SRB had to be transported to their launch pad by train. The railroad though had to pass some tunnels through the mountains, and those tunnels were spaced to allow the passing of a train with a 4 feet 8.5 inch wheel gauge (and a little margin). One of the most distinguishable elements of the Space Shuttle was designed based on guidelines determined by the width of two horses' butts, two millennia ago.

I wonder what forgotten heritage the ruts are that set the tracks and are buried and forgotten within today's most advanced and highly sophisticated quant manager's systems – what are their "two horses butts?"

KAMRAN GHALITSCHI
CEO & PUBLISHER HEDGENORDIC

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Chicago Mercantile Exchange, Chicago, IL (late 1990´s)

Three Centuries of Systematic Trading

By Hamlin Lowell – HedgeNordic

Systematic and quantitative are interchangeable terms. They involve using a model, formula, rule or algorithm, rather than discretion or judgement, to decide on a trade. Many discretionary managers do of course use systematic models as well, but they exercise judgement to pull the trigger on trades.

Computers certainly allow for more sophisticated systematic strategies, but the first systematic traders used pens, ink and paper to draw charts, centuries before the first computer.

FUTURES

The earliest systematic trading may have been in 18th century Japan, where candlestick chart patterns were used to trade futures on the Dojima Rice Exchange in Osaka, which started in 1730. The

"The earliest systematic trading may have been in 18th century Japan, where candlestick chart patterns were used to trade futures on the Dojima Rice Exchange in Osaka, which started in 1730."

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charts were reasonably advanced: they measured opening and closing prices, intraday highs and lows, and used black bars to show rising prices combined with white bars to show falling prices. Chart patterns identified included the shooting star, hanging man, and dark cloud cover.

US futures markets started about a century later in 1848 with corn, and later wheat and soybeans traded on the Chicago Board of Trade, soon followed by cotton on the New York Cotton Exchange, while the London Metal Exchange was launched in 1877. However, systematic trading of futures in the West is generally held to have started in the 1970s, when the "Turtle traders" led by Richard Dennis, applied trend following to the growing universe of futures markets. The earliest CTAs included Campbell, Millburn, and Eckhardt, in the US, while firms such as AHL, which later led to Man Group, Winton and Aspect, started a bit later in the 1980s in Europe.

The advent of currency futures on the Chicago Mercantile Exchange, after the Bretton Woods system of fixed exchange rates collapsed in 1971, had increased the number of markets to trade, and the associated end of the gold standard also paved the way for trading gold, silver and platinum futures. Financial futures in the form of Treasury bond and equity index futures came later. The universe of futures contracts is growing every year as more contracts are launched on both western and emerging market exchanges, where China has been especially active, though trend following can of course also be applied to non-futures markets.

EQUITIES

If systematic trading of futures emphasized trends, in equities one of the earliest approaches – statistical arbitrage – did the opposite: it was about short term mean reversion and pairs trading. If two stocks in the same sector moved in the opposite direction, a simple stat arb approach would short the riser and buy the faller, expecting them to reconverge. Whereas trend following generally made most of its money from a few big winners in any given year, statistical arbitrage was more about compounding up lots of small profits.

"A different approach - factor investing – has since the 1970s has been based only on fundamental data."

The quantitative trading group at Morgan Stanley led by Nunzio Tartaglia was one of the first to trade stat arb in the 1980s, and some members of this group, such as David Shaw, started their own firms. Over time statistical arbitrage has often become a higher frequency strategy pursued by specialist proprietary trading firms as well as hedge fund managers.

CREDIT

The application of systematic approaches to credit markets has been much slower, partly because they have taken much longer to move towards exchange and electronic trading. Over the counter (OTC) trading of credit markets for many years meant that quantitative analysts did not have good enough data to build models. Different counterparties quoted different prices and credit derivative contracts were also rather bespoke. Since 2000, several developments have steadily paved the way for systematic credit strategies. TRACE has since 2002 recorded corporate bond prices, CDS has been standardized since 2009, clearing of credit derivatives also helps to mitigate counterparty risks, and some markets can now be traded electronically.

The assets in systematic credit are still tiny compared with equities, but this is a growing space that has been a rich source of alpha generation and is evolving fast. Historically the fact that different corporate bond issues could have different features was seen as an obstacle to systematic credit strategies, but now artificial intelligence can be taught how to read a bond prospectus or indenture and pick out at least some key features.

FUNDAMENTAL AND ALTERNATIVE DATA

Some of the first systematic earliest approaches – both trend following and statistical arbitrage – used only technical or price data, and ignored fundamental data such as economic figures, company profits, or valuation.

A different approach - factor investing – has since the 1970s has been based only on fundamental data, such as using the value factor to buy a basket of companies with lower valuations, higher growth rates, more predictable cashflows or other qualities. Quantitative fundamental approaches have often run market neutral portfolios of equities, based on a range of signals. In macro investing, the largest and most famous systematic macro fund is Ray Dalio's Bridgewater Associates.

Increasingly, alternative data, such as sentiment, news, social media, or satellite pictures, is also being used as an input for systematic strategies – and machine learning statistical techniques are also being used to analyse the data.

Some systematic managers are purely technical, purely fundamental or purely based on alternative data while others will blend two or three data types.

EXECUTION

Though some systematic strategies – and especially higher frequency ones - do require electronic execution this is not an essential feature. In the early years, CTAs used models to generate trading signals, but trade execution would be carried out manually, probably by traders shouting and screaming at each other in the pit. The growing electronification of financial markets means that trade execution is now automated using algorithms, with the exception of OTC (over the counter) markets.

Some of the most profitable trend following CTAs in recent years, including Man AHL Evolution, Systematica Alternative Markets, Gresham Alternative Commodities, and Brummer affiliate Florin Court, trading "alternative markets, which may be entirely systematic in terms of their models," need teams of people to execute trades with large numbers of counterparties. It remains to be seen if artificial intelligence will eventually be deployed to automate the trading of OTC markets.

Prepared for Inflation

By Harold de Boer - Transtrend

Reflation is a trending topic in the investment community this year. And the reflation trend has been the most dominant trend in the financial markets during the first half of 2021. Reflation refers to a situation where economic growth and inflation are both accelerating.

It typically follows a recession, and typically includes rising prices of commodities as well as rising stocks. In itself, rising commodities and stocks don't really hurt most investment portfolios. However, some investors and policy makers feared that reflation could mutate into 'just' inflation, which potentially includes significantly rising interest rates. And that would be a regime not necessarily beneficial for investment portfolios. Certainly not for the investments that benefited the most from the low/declining interest rates during the past few decades. And, connected to that, probably also not for some of the investments that benefited the most from the massive global government support in response to the Covid-19 pandemic.

The recent reflation regime started off in the first week of November 2020 fueled by optimism about the forthcoming Covid-19 vaccination programs. Dependent on the precise definition this broad trend essentially fell apart after 10 May when industrial stocks and copper peaked, or after 10 June when energy, metals and mining stocks peaked.

These decoupling points shared a common factor as well: concerns about the spreading of the delta variant. These concerns also seemed to have carried forward the inflation concerns as well as central banks' intentions to rise interest rates. But once the delta variant concerns fade away, inflation and rate rises will likely be back on the table.

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

We would no doubt have great commercial success if we could offer a trading program that has empirically shown its effectiveness during periods of rising rates/high inflation in recent years. The problem is, such a program cannot exist, for the simple reason that we haven't seen strongly rising interest rates nor significant inflation for many years now. At least, not in the economies where our program is predominantly active. This cold reality raises the question: Could investment portfolios have become explicitly or implicitly biased towards low/declining interest rates and towards no/low inflation? As an investment manager we may have allowed such biases to creep into our own program. And allocators may have incurred such biases by predominantly allocating to biased trading programs.

LOOKING BACK

There are different ways such a bias can creep into a strategy. Their common denominator is they look back. Whether we generate ideas based on what we've (recently) seen and experienced or explicitly run historical optimizations, whether we use robust hypothesis testing techniques or apply advanced machine learning techniques, whether we use only price data or use alternative data as well, in all cases it's the past that guides our decisions. For a trend strategy like our own Diversified Trend Program (DTP), such a bias could enter the program along three main routes:

The selected market universe. The best tradable trends in an inflationary scenario don't necessarily manifest themselves in the same markets as in a non-inflationary environment. For instance, in the past decade or so (though not this year so far), commodity markets generally weren't showing the best trends. Managed futures programs trading less in commodities tended to outperform programs trading more in commodities during this period. Will that be the same in an inflationary scenario?

The applied trend indicators. The trend indicators performing best in an inflationary scenario aren't necessarily the same trend indicators as the ones that performed best in the recent non-inflationary environment. For instance, most markets typically don't move in a symmetrical way — uptrends in commodities and downtrends in bonds, which seem to be most promising in an inflationary scenario, aren't necessarily comparable to downtrends in commodities and uptrends in bonds.

> "Could investment portfolios have become explicitly or implicitly biased towards low/declining interest rates and towards no/low inflation?"

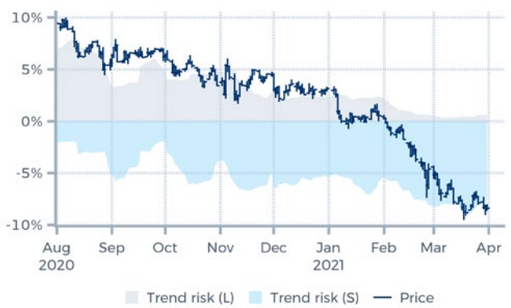
The risk allocation across the different markets. The largest differentiator between different trend strategies is not which trends are traded in which markets, but the sizing of the various positions in these trends. Whether done more explicitly through historical optimization or through a portfolio risk approach using correlations, the outcome will inevitably be colored by history. Will correlations between markets be the same in an inflationary scenario as in a non-inflationary scenario? That doesn't seem very likely.

In our experience, solving the correlation issue is the hardest nut to crack when trying to successfully navigate regime shifts. Solely relying on data, often embraced as the holy grail of quantitative finance, almost certainly leads to a suboptimal solution. The way our Diversified Trend Program dealt with the down trending bonds during the first quarter of 2021 may serve as in illustration.

The chart below on the left shows the program's undiversified risk within the interest rate cluster, split up in long positions, short positions and 'neutral positions' (synthetic spreads between different futures contracts, such as long German bonds versus short U.S. bonds). It shows that until the first week of February, DTP was sizably net long. Only since the first week of March did the undiversified risk in short positions outsize the risk in long positions. But still not really a sizable net short position. This might seem somewhat odd and undesirable given the strong downtrend in at least the U.S. bonds since autumn 2020, as illustrated by the chart on the right. Did some form of bias prevent the program from entering into more sizable short bond positions?

The chart on the right doesn't only show prices, but also the (diversified) trend risk around long U.S bond positions (the grey area) as well as around shorts (the blue area). In contrast to the undiversified risk statistics, this graph shows that DTP did hold a sizable short position in and around U.S. bonds. The difference between the two statistics is made up by the 'and around' part — positions in markets correlated with short U.S. bonds. In fact, DTP's risk measures restricted the size of the short positions in U.S. bonds in order to prevent the trend risk around these shorts from growing too large.

This illustrates the importance of correlations. Without these highly correlated positions, the program's short positions in bonds could and should have been much larger. So if we for instance believed our correlation measures were overestimating the actual correlations because of outdated data not representative of the current regime, the short positions in bonds should have been larger. It's our job to make this call.



“In our experience, solving the correlation issue is the hardest nut to crack when trying to successfully navigate regime shifts.”

To be honest, we did believe that some of these measured correlations were outdated, as we knew their history. A part of DTP’s position in the reflation trend were long positions in stocks. As recent history was dominated by risk on/off dynamics, falling stocks were typically accompanied by rising (safe haven) bonds. This explains why correlation measures treated short bonds and long stocks as additive risks. But was this still relevant in the early 2021 environment? Inflation fears introduced the inverse dynamic: rising yields (i.e. declining bonds) triggered declining stocks. As is always the case with correlation measures, it takes some time before the measures fully capture a changed environment.

But for the largest part of the relevant positions the program held, it didn’t seem that the applied correlations were inflated. Already since before the start of the recent reflation regime, DTP’s largest positions had been longs in commodities. And due to their growing correlation, these positions increasingly added to the risk around short U.S. bonds as well. If reflation really changes into inflation, longs in commodities and shorts in bonds can still be regarded as positions in the same trend — long commodities and short bonds are two of the most popular positions for investors who fear inflation.

LOOKING FORWARD

Which brings us to the macro component in DTP. With our program we strive to be sizably invested in different trends. In the past, adding as many markets as possible — including synthetic markets — to the program’s market universe did the trick; the trend indicators would then effectively pick up the trends in these various markets the moment they manifested themselves. However, due to changed market dynamics, the correlation structure between markets changed in such a way that this mechanism gradually lost its effectiveness. Trends were still picked up, but it took the program longer to get sizably invested in a broader trend. Which led to the somewhat paradoxical conclusion: in order to get sizably invested in different trends (again), we needed to be more restrictive in the selection of traded markets.

But how to make that selection? The typical quant approach would be: let history decide. We could for instance backtest which markets historically have manifested the best tradable trends. But that would be the kind of historical optimization that we — among others for the reasons mentioned earlier — have always shied away from. Instead, we opted for a more forward looking approach. As part of our research we identify and discuss the major themes that could potentially drive markets in the foreseeable future. We discuss which price trends in which markets (including synthetic markets) such a theme could trigger. Subsequently, we make sure that DTP will be able to get sizable positioned in these markets. In essence, this resembles a macro or thematic style of investing. The important difference is: we don’t strive to predict when these trends will start. We don’t even know for sure whether or not these trends will occur, and if they do, whether or not they will occur in the anticipated markets. We leave that part to the applied trend indicators.

Among the recent themes that helped shape DTP’s horizon of traded markets are Brexit, the U.S. elections, the energy transition and of course inflation. With regard to inflation, we seemed to have been somewhat too early. For a few years already, we’ve included various synthetic markets specifically developed to trade some typical inflation trends. The leading idea was that the program should be able to profit well from rising commodities in such an environment. The outstanding performance of the program in the first quarter of 2021, despite the remarkably limited positions directly in shorts bonds, is a fruit of these preparations.

Again, we don’t strive to predict when and how far yields will rise, and neither whether or not we are entering a period with persistent inflation. We know our limitations when it comes to predicting. However, what we’ve been working on and what we’ll continue to work on, is to make sure that DTP will be able to perform well also in the potential scenarios where yields do continue to rise and/or inflation does persist.. This includes scenarios that didn’t manifest themselves before, so that will not show up in backtests. DTP’s healthy performance so far this year encourages us to continue further along this path.

“As part of our research we identify and discuss the major themes that could potentially drive markets in the foreseeable future.”

Explanatory notes & important information

Synthetic markets

Synthetic markets are combinations of outright markets, such as spreads.

Trend risk

Trend risk is defined as the estimated aggregate impact of a major adverse price move in a particular market and the coinciding adverse price effects in all markets currently exhibiting the same trend. Trend risk can be displayed on a portfolio level, a trend level, as well as around an individual market.

Which positions add up to all of the program's risk concentrations will change from day to day. Risk metrics are not static metrics — throughout the years the definition and the way the program utilizes these metrics have been (materially) changed, see for example our February 2019 and July 2019 Monthly Reports. Risk numbers therefore cannot always be compared over time.

Aggregate directional risk within a cluster

Within a cluster, positions can be long, short or neutral. Within the interest rates cluster, for instance, we can have long positions in interest rate instruments, short positions in interest rate instruments and neutral positions, resulting from explicit interest rate spreads. The aggregate directional risk within a cluster represents the sum of the risk in all individual positions, per side, within that cluster, irrespective of their correlations, and irrespective of associated risk in positions in other clusters.

All risk figures presented in this report are indicative for the Enhanced Risk (USD) profile of DTP.

Source of price data used in this report: Refinitiv, Bloomberg and Transtrend.

THE VALUE OF YOUR INVESTMENT CAN FLUCTUATE. PAST PERFORMANCE IS NOT NECESSARILY INDICATIVE OF FUTURE RESULTS.

The Diversifying Power of Chinese Futures Markets

By Hamlin Lovell – HedgeNordic

Razvan Remsing, CFA
Director of Investment Solutions – Aspect Capital

Institutional investors who started allocating to equities in mainland China have increasingly diversified into government bonds, corporate credit and the growing menu of commodities including some unique markets. A systematic long/short approach can provide further diversification and generate returns with virtually no correlation to Chinese or global financial markets.

Aspect Capital has been applying its models to Chinese markets – predominantly commodities - since 2016, and has shown a slightly negative correlation to Chinese equities – and a near zero correlation to the Bloomberg commodities index.

"We have been accessing onshore Chinese futures markets in conjunction with a local partner since 2016, which has provided insights into the quirks of Chinese futures markets, and we are now getting ready to launch an offshore pure China fund," says Razvan Remsing, Director of Investment Solutions at Aspect.

The onshore China programme has generated a Sharpe ratio around one, with especially strong performance in 2016, 2020 and 2021. Aspect's new offshore Chinese CTA strategy will trade mainly commodity futures and also some equity indices and government bonds, all of which are exchange listed futures. (Aspect does not trade single name equities or corporate bonds in China, and the Chinese currency is actually traded in Aspect's other programmes, as are equity indices outside the mainland, such as Hong Kong's Hang Seng). In total, Aspect will trade around 45 Chinese futures contracts of which 5 have so far been internationalized.

> "Overall costs in China's deep and liquid futures markets should eventually be comparable to global commodity markets."

They will trade on the China Financial Futures exchange and three commodities exchanges: Dalian, Zhengzhou, Shanghai, and its child exchange, the internationalized Shanghai Energy Exchange. These contracts will be accessed through swaps, which have become much cheaper over the past few years.

“We run trend models in China slightly faster than in other regions, though they broadly remain within the medium-term trend following category and are much longer term…”

Aspect also hopes to obtain a QFI license for direct access. A growing proportion of Chinese futures are expected to become QFI-eligible, which should further reduce trading costs. “Overall costs in China’s deep and liquid futures markets should eventually be comparable to global commodity markets,” says Remsing.

DIVERSIFICATION

Chinese futures recently appear to have generated stronger trends than global futures. “But our research over longer term lookbacks does not find that the persistence of trends is significantly distinguishable from traditional futures markets. The real benefit lies in superior diversification. Markets in China are so diverse and idiosyncratic, covering such as wide range of assets and industries, that pairwise correlations are much lower than on either global commodity futures or global financial futures,” says Remsing.

The diversification benefit of unique Chinese futures is perhaps fairly obvious. Markets such as apples, eggs, bitumen, polyethylene, PTA, and deformed bar are not traded on other futures markets. Yet some local Chinese versions of global commodities already offer some diversification benefit.

Transport and storage can explain some divergences for non-perishable commodities, and the differences can be even greater in agricultural markets. “For agricultural and perishable commodities, harvests and weather conditions can contribute to divergent performance even for namesake counterparts. For instance, corn in China has only been about 0.3 correlated with US corn,” says Remsing, who sees potential for more namesake commodities to provide diversification benefits in future. “Even where Chinese commodities, such as copper, are currently highly correlated with global markets, there could be scope for them to decouple in the future. The local Chinese versions could become competing benchmarks, and might sometimes diverge just as Brent Crude and WTI Oil do,” says Remsing.

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TAILORING MODELS TO CHINA

Some Chinese CTA programmes are purely trend. Aspect’s is substantially trend, but also uses some non-trend models, and all of these models have been somewhat adapted to the unique features of Chinese markets.

“Trend is broadly the same signal architecture but is run faster, with risk positioned differently in terms of mapping, position building, holding periods, and exiting the trend. We have China-specific forecast mapping functions. We run trend models in China slightly faster than in other regions, though they broadly remain within the medium-term trend following category and are much longer term than the models in Aspect’s dedicated short-term trading strategies. They seek to capture directional effects lasting longer than about 1 month rather than a handful of days ,” says Remsing.

Faster trends could be partly explained by lower open interest and greater retail participation in Chinese futures. “Lower open interest as a percentage of average daily volume generally gives shorter lived trends.”

Liquidity needs to be closely monitored: “the ratio of open interest to ADV is less stable than in more developed markets, which means that some markets might fluctuate in capacity quicker,” says Remsing.

CARRY, TERM STRUCTURE, SENTIMENT, AND INVENTORIES

Non-trend models include term structure and sentiment.

“Term structure is partly implicit in trend following models based on total returns, but there are also explicit non-trend models looking at term structure. Carry and term structure estimates in Chinese futures markets are somewhat noisier due to data issues. Carry is partly mixed up with seasonality which can dominate the carry signal. We do not actually trade outright carry in China but we have developed techniques to infer sentiment from term structure data,” points out Remsing.

Some models that Aspect utilizes within its alternative markets programs have worked really well in China, but their calibration and parameterization are unique to China. There are also some fundamental models based on inventories, which are completely different from Aspect’s quant macro models based on fundamental economic data.

KEY CONTRIBUTORS

Aspect’s China models have profited from both long and short positions during iron ore’s V shaped performance this year. Thermal Coal has also been a substantial contributor.

“There have also been powerful themes evident in China, which entered the pandemic and restarted before other regions. China’s recovery based on stimulus and infrastructure spending has supported multiple commodity markets,” says Remsing. The strategy was mainly long of Chinese commodity futures in the first half of 2021 but has top sliced some exposures as volatility increased and has started to add more short exposures. “As of September 2021, it was short 15 of the 45 markets traded, including iron ore, lead, glass, softwood pulp, eggs, corn starch and apples. It remains long of contracts in the energy complex such as crude oil, coal and methanol, plastics, as well as copper,” says Remsing.

Not all markets have offered profitable opportunities, however. “Agricultural markets have been very choppy, especially in the soybean complex, and rapeseed oil,” he adds. This is to be expected in a mainly trend following strategy, since not all markets will show clear trends in any year.

China clearly offers a new frontier of opportunity for CTAs to find new sources of diversification.

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Lower no Longer: Cash & Carry in the Emissions Markets

By Adam Golden, Dr. Moritz Heiden, Felix Hofer

Munich Re Investment Partners

1 – INTRODUCTION

Over the last 5 years investors seeking secure, shorter-dated euro-denominated returns have not had many good options. For example, 12-month Bubills have on average yielded a negative 63bps p.a. since September 2016 as flight-to-safety dynamics have resulted in strong demand for government bonds. However, in our opinion, better risk/reward profiles can be found without taking on excessive risks. At -63bps one would be better off burying any excess euro cash in the backyard, as long as one is confident that the odds are longer than 159 to 1 that someone would find it, dig it up, and take it. At Munich Re Investment Partners, a systematic, climate-driven investment manager, we decided to investigate deploying an age-old commodities strategy into one of the hottest and fastest growing financial markets globally, EUA Emissions Allowances, in order to improve euro cash returns.

2 – CASH & CARRY IN THE EMISSIONS MARKETS

Cash & Carry is not a new strategy to the commodities markets. The essential components of this trade are to use the cash to buy the underlying commodity while simultaneously agreeing to sell it at a future point in time, e.g., via a futures contract. The futures contract will converge with the physical underlying at maturity, allowing the trader to unwind both legs of the spread and capture the difference, known as the implied yield. Cash & Carry returns derive from several factors, among others: the amount of funding available to the market, storage costs, insurance, and the ability to take physical delivery. Prominent examples of Cash & Carry trades can be found in diverse markets such as crude oil, where physical cargo is loaded on a tanker and held off-shore to take advantage of the contango in the forward curve, or in the treasury bond market, where significant leverage is deployed on cheapest-to-deliver bonds which will converge with their futures contract equivalent. The nascent cryptocurrency markets can offer particularly appealing Cash & Carry yields that are mainly due to insufficient fiat funding and counterparty credit risks, as well as the relative immaturity of the market and the absence of strong regulatory oversight.

EUA Emissions Allowances present an attractive opportunity to harvest positive yields on euro cash through a Cash & Carry trade in which the trader is long the EUA physical certificates while eliminating the market risk through a short EUA futures position. Since 2017, the futures curve has always been in contango and thus carries a positive implied yield. The physical certificates are the underlying commodity and have some special properties that

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„EUA Emissions Allowances present an attractive opportunity to harvest positive yields on euro cash through a Cash & Carry trade.“

allow for the Cash & Carry trade to be attractive. Firstly, one does not have to accept actual delivery of tons of CO2 gas. The physical certificates are just an accounting entry in the EU Union Registry system, recording who owns the emissions allowance. Secondly, there are no storage or insurance costs for holding this physical underlying. Lastly, these certificates no longer have an expiration date or a particular trading "phase" of the EU ETS in which they must be redeemed. These properties combine to eliminate many of the common costs of a Cash & Carry trade and lead to the EUA certificates being an attractive and secure (counterparty is the EU Union Registry) deposit alternative.

3 – RISK MANAGEMENT CONSIDERATIONS

Some of the difficulties that come along with this trade revolve around what the futures clearing houses regard as "good collateral." The two potential clearing houses (ICE Clear Europe and ECC, the clearing house of the EEX in Leipzig) do not accept the EUA physical certificates as eligible collateral, although this has briefly been the case in the past. This leads to the market-neutral spread decomposing into two parts: a short futures position with contingent cash needs driven by variation margin, and physical EUAs that essentially become a "stranded asset" unless the trader can find a counterparty that's willing to repo them, which can be challenging.

This stranded asset characteristic of physical EUAs can cause a cash crunch, which in turn could trigger an untimely unwind of the trade. A significant and fast increase in the futures price could result in a margin call situation as the physical long leg does not produce any offsetting cash flows. On the other side, if the futures price drops significantly, the trader will receive additional cash from variation margin, which is a drag on the overall performance of the trade, due to the current negative yields and broker funding spreads.

One possible solution to better manage the risk of an increase in the futures price is to find a counterparty that is willing to repo the physical certificates. The repo allows the trader to tap into the equity of the physical certificates for a fixed term and a nominal fee. Usual terms for such a repo require a haircut, or overcollateralization (e.g., some investment banks quote 25%), and may further have an absolute cap on available funding due to capital costs and balance sheet constraints. On the flipside, if the futures price drops, one could use the gains from the futures leg to purchase more certificates and increase the nominal exposure of the trade. Alternatively, one could take profits and unwind some notional exposure by selling off a proportional number of physical certificates in a scenario where the implied yield has contracted, and the Cash & Carry trade shows an attractive mark-to-market P&L.

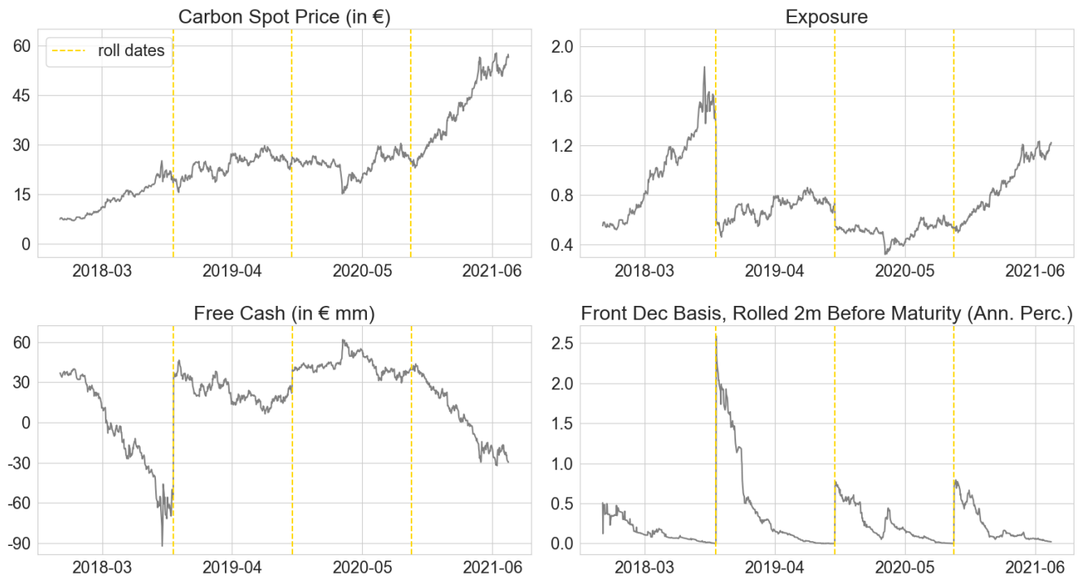
4 – TRADE DESCRIPTION AND HISTORICAL RESULTS

Below we discuss a conservative implementation of this Cash & Carry trade and share backtesting results from the EUA market, starting with the approval of the MSR (Market Stability Reserve) in 2017 to the present.

ASSUMPTIONS:

- We buy the Daily Futures contract to receive the physical certificates in our registry account. This is a physically settled daily expiry contract, starting and ending on each trading day.
- The short futures leg is represented by the front December EUA futures contract, which is the most liquid and important price point on the curve. This contract is systematically rolled into the next December contract two months prior to expiration.
- We have an initial €100 mm cash position. In order to ensure a sufficient margin buffer, we limit the amount of notional exposure on our spread to €55 mm, leaving enough capital to purchase €55 mm worth of physical certificates while being charged 15% initial margin on the short futures leg (€8.25 mm). This leaves a cash buffer of €36.75 mm. Any variation margin as well as our cash buffer are assumed to be earning a paltry EONIA-30bps on a brokerage account.

FIGURE 1: 4-BLOCK BACKTEST RISK METRICS



- We have access to a repo facility to finance our long physical EUA certificates should our cash buffer of €36.75 mm become depleted. Nevertheless, we consider that this facility will have limited capacity and conservatively cap it at €100 mm. We can borrow at a rate of EONIA+75 bps.

As can be seen in the top left chart in Figure 1, in the first year of the backtest the spot price roughly triples, from about €7 to more than €20 per ton. The consequence is a large loss on the short futures leg, eating into the cash buffer as we must pay variation margin. Early in 2018, the cash buffer is already completely exhausted, eventually forcing us to borrow up to about €90 mm later in the year to stay in the trade. This is shown in the bottom left quadrant of Figure 1, while the chart on the top right displays the corresponding exposure of the trade, which goes up from 55% at the time of trade initiation to over 180% at the peak.

The bottom right chart shows how the basis evolves over time. In general, the longer the time to maturity, the richer the basis. Naturally, the basis collapses to zero as the expiration date gets closer. With each futures rollover we reset the trade notional to the initial exposure of €55 mm.

It can be seen that the strategy makes money as the basis contracts and the expiration date of the futures contract moves closer. At the end of 2018 the basis narrows considerably, mirrored by a rapid increase in the trade P&L, as shown in Figure 2. Throughout the backtest period the strategy earns an annual yield of 0.84% after interest on cash. Thus, the strategy accumulates a net gain of slightly above €3 mm. This comes at a low annualized volatility of daily returns of 0.58% and a maximum rolling monthly drawdown of 0.35%.

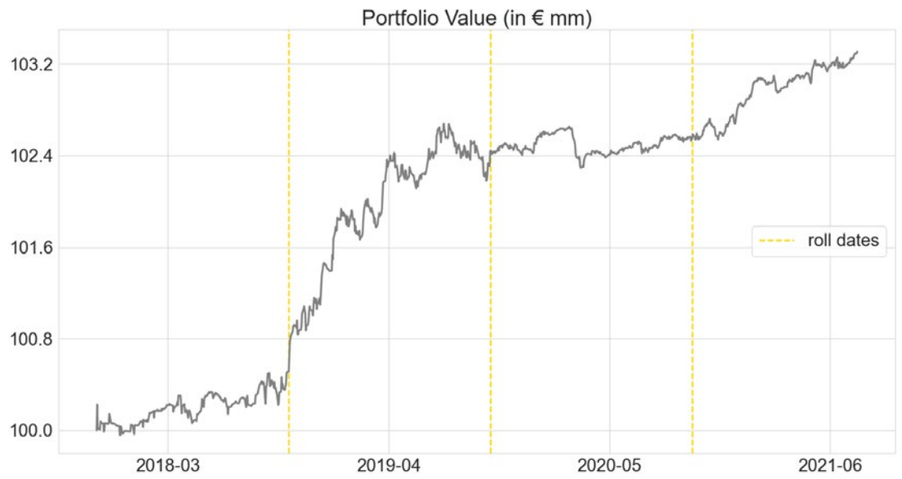
Note that these results are based on a conservative configuration and higher returns can be achieved with appropriate cash and risk management.

5 – CONCLUSION AND FUTURE OPPORTUNITIES

As we have shown, the EUA Cash & Carry trade offers interesting opportunities for applying the traditional

"As this new asset class is currently booming, expectations are that many more markets around the world with price curves presenting similarly appealing yields will emerge."

FIGURE 2: BACKTEST PERFORMANCE OF THE STRATEGY



concept of Cash & Carry to emissions markets, given its positive absolute yields. Despite the negative interest rate environment, the EUA futures curve has been consistently in contango over the last years and absent any change in how physical EUAs are treated as collateral, we do not anticipate the market moving into backwardation anytime soon.

This article focused on the EU ETS Cap-and-Trade system, namely the EUA Emissions Allowances. As this new asset class is currently booming, expectations are that many more markets around the world with price curves presenting similarly appealing yields will emerge. The value of the EUA Emissions Allowances market is currently over €185 billion, comprising over 90% of the aggregate value for open Cap-and-Trade Allowance markets around the world, with Californica Carbon Allowances (CCAs) being a distant but rising 2nd place. China also recently launched an internal Cap-and-Trade market. While potentially huge, the Chinese market is currently still restricted to compliance entities within China. New Zealand and Korea both have small but growing markets. With other nations planning to implement similar measures to help achieve their decarbonization goals, we expect additional markets to emerge over the coming decade.

Perhaps the biggest opportunity of all will be the Voluntary Carbon Offset market. There is much anticipation ahead of the proceedings of the UN's COP26 in Scotland in November of this year. The hope is that the participants will finally be able to agree on clearly defined rules for the trading and accounting of carbon offsets between nations, as outlined in Article 6 of the Paris Agreement.

There have been several initiatives and new exchanges launched recently attempting to establish a benchmark for the Voluntary Carbon Offset markets. However, most of the hopes are focused on the efforts of the TSVCM (Task Force on Scaling Voluntary Carbon Markets), led by Mark Carney. Their aim is to set the global benchmark for carbon offsets which should then provide the necessary transparency, confidence and liquidity that will attract additional capital and finance experts into the global fight against climate change.

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All-Weather Sailing

By Eugeniu Guzun – HedgeNordic

It is inherently essential to catch the upside, but arguably, even more important to protect the downside to achieve long-term wealth accumulation. Downside protection allows a portfolio to spend more time compounding instead of playing catch up by recovering from losses.

"The most solid way to improve long-term compounding is by focusing on mitigating the effects of rough downturns on investor portfolios," says Martin Estlander, the founder of Finnish systematic asset manager Estlander & Partners. "If you invest and lose 50 percent, you have to gain a hundred percent to make up for the losses," continues Estlander. "To achieve a good compounding rate of return, you better take care of your dips. That is where you can really make the difference."

With Estlander & Partners up-and-running for more than 30 years, the systematic asset manager faced 16 market corrections and bear markets, and we are still counting. "We have seen 16 big dips over the years. Ever since our initial start as market makers in Stockholm in 1987, we understood the importance of downside protection," says Estlander. "At the end of 1987 in October, we experienced the Black Monday and that was a life-changing experience because we got to see what it means to have the tail protected and what difference downside protection makes," he continues. "It has always been in our DNA to watch the tail and historically, our best moments have been in situations where the market was coming down. Today we cover our tail with systematic tail-hedging strategies."

Estlander & Partners' legacy trend-following strategy AlphaTrend enjoyed 20 consecutive years of positive performance up until 2011. The 20-year period covered the financial crisis of 2007-2008, the busting of the dot-com bubble in the early 2000s, and many other events. The strategy's best-ever annual performance of about 37 percent was recorded in 2008. With central banks taking their roles as volatility suppressors in chief in the post-2008 era, pure trend-following strategies have not been able to shine again.

"After the financial crisis, when the central banks and governments embarked on this zero-interest-rate policy, they forced down the volatility and imposed stability on the markets," explains Estlander. "Pushing down volatility by using all means possible has been challenging for the market structure. That is one of the key reasons why we converted from being a pure trend-follower to a multi-strategy player."

ALL-WEATHER SAILING

In response to an increasingly-challenging market environment for pure trend-following strategies, Estlander & Partners has developed an "All-weather" philosophy that is now applied in its recently-launched Glacies fund and the older-running Freedom Fund. This "All-weather" philosophy resembles Martin Estlander's approach to boat sailing. "If you are a sailor and you go out sailing, you want to have a good boat, you have to have a good team to manage the boat, and then you need to be equipped with different types of systems and settings for different weather conditions," explains Estlander.

"In fair weather downwind sailing, you take out your spinnaker and enjoy the ride. And if the wind turns against you, you have to take down the spinnaker and do some beating to take a zig-zag course and make progress directly into the wind with a jib," says Estlander, who has years of experience of competitive sailboat racing. "Then you also need to have your storm sails ready for thunderstorms," he adds. "Whereas a long-only equity manager, for instance, sails with the spinnaker up all the time regardless of the weather conditions knowing that the fair weather is dominant over time, our approach adapts and applies different sails depending on the weather and thus helps us on our journey of uninterrupted compounding."

"The most solid way to improve long-term compounding is by focusing on mitigating the effects of rough downturns on investor portfolios."

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Martin Estlander,
Founder of Estlander & Partners

"That is how we approach trading nowadays," says Estlander. "We have a strong boat. We have a good foundation with the technology that has been developed over many years and the big computing power that we can use to run a lot of simulations. And we have a strong and very experienced team."

SAME THREE COMPONENTS FOR MULTI-STRATEGY FUNDS FREEDOM AND GLACIES

Estlander & Partners' "All-weather" approach, applied by both Freedom and Glacies, is designed to navigate three main types of market environments: calm and low-volatility markets; rising volatility and behavioral-driven markets; and chaos or mayhem. "There are three main components of the "All-weather: approach. First, "the calm, normal market conditions are taken care of by econometric models," explains Estlander. "We have a number of different econometric-based carry models for each of the main asset classes like equities bonds, foreign exchange, interest rates, and volatility that work well in risk on-environments."

"Then the second component is the behavioral models, which try to capture investor behavior and react more quickly to market changes," continues Estlander. "This component encompasses a vast set of directional price-driven models, both shorter-term and a little bit longer term, that are long volatility."

The third component is tail hedging. "The tail hedging involves consistently holding out-of-the-money equity put options in a systematic way, always having cost-efficient exposure that pays off in an equity crisis," explains Estlander. "As an investor, we have to assume that we have not seen our worst trading day yet." The tail hedging strategy is designed to protect the portfolio when that trading day comes.

"The tail hedge solution is the outcome of all our knowledge and experience over many years put together to create a "real kicker" for improving the compounding returns," says Estlander. "If properly managed, an equity tail-hedging strategy becomes a profitable bet in addition to serving as great insurance. Now we use it systematically in our multi-strategy funds."

In early 2019, the Finnish manager expanded its fund range with the launch of Estlander & Partners Glacies AIF, which entirely relies on the "All-weather" approach. Glacies has generated an annualized return of 7.9 percent since launching in February 2019 and is on track for its third consecutive year of positive returns. Glacies returned 4.6 percent in the first quarter of 2020 to end the year up 5.8 percent. Estlander & Partners' longer-running Freedom, meanwhile, has been using a higher risk, higher return version of the "All-weather" approach since 2019. The fund gained almost 13 percent last year and is up 17.3 percent year-to-date through the end of August.

PROCESS AND EXECUTION

"Our econometrics models rely on academically proven, well-known strategies. Many of the econometric models are based on known fundamental drivers," explains Martin Estlander. "We know that volatility is overpriced on average, that dividend yield has a certain return component, that relative-value in bond markets is a good source of return, and that there are term structure phenomena in commodity markets, etc.," he continues. "These are well-known phenomena." Whereas Estlander & Partners may rely on the same models as many other managers, the Finnish asset manager tries to set itself apart "through the way we implement the models, how we execute and how we manage the risk. Because we trade over a hundred thousand times a year, the execution is really key in the process of running this all-weather approach."

"The process and discipline are everything in this all-weather approach," emphasizes Estlander. "The process and the discipline are the most important part of the journey." Estlander & Partners relies on a so-called "Achilles" risk management, which Estlander describes as a methodology that involves the simulation of a large number of events into the future. The asset manager collects and analyzes tens of millions of data points every day and runs 10 to the power of 84 risk scenario calculations every day, which is more than the total of atoms on earth (≈ 10^50. "With these computations, we simulate to make sure our portfolios are designed to cope with different situations," says Estlander. "We have a strong boat and we have everything we need to successfully run our all-weather approach."

> "It has always been in our DNA to watch the tail and historically, our best moments have been in situations where the market was coming down."

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Quantamental – The Best of Both Worlds

By Eugeniu Guzun – HedgeNordic


Alexander Hyll
CIO of Adaptive Paradigm Alpha

Linköping-based money manager Alexander Hyll relies on a quantamental approach to run long/short equity fund Adaptive Paradigm Alpha, seeking to use the strengths of both "quant"-itative and fund-"amental" investing at every step of the way. "In our minds, a quantamental approach is combining human creative thinking and insight with the power and precision of technology to try and get the best of both worlds," argues Hyll.

Using a long/short equity approach, Adaptive Paradigm Alpha seeks to identify and capture smaller paradigm shifts, "which essentially are trends or shifts that serve as headwinds for some businesses and as tailwinds for others." Hyll goes on to explain that paradigms are "market conditions stemming from measurable cause-effect relationships affecting market behavior."

The fund manager views fundamental analysis and quantitative techniques as symbiotic and essential in identifying and capturing paradigms. "For us, it is always about combining the quantitative with the fundamental side, where one validates the other," explains Hyll, who founded his own asset management firm in 2020. "We are looking for a synthesis between the two."

THE PROCESS

The investment process starts with the idea generation, with the lookout for paradigms, where ideas are generated either through a quantitative screening or fundamental brainstorming process. "We start with idea generation through either a systematic, quantitative screening where we crawl through our data sets and look for patterns," explains Hyll. "Alternatively, we start from the fundamental side where we seek to find paradigms in the economy, markets, industries or geographies," he continues. "We use a quantitative validation process for our fundamentally generated ideas, and likewise a fundamental validation process for our quantitatively generated ideas. We need the quantitative and fundamental views to align."

> "A quantamental approach is combining human creative thinking and insight with the power and precision of technology to try and get the best of both world."

"If views do not align, we need to evaluate and consider if we missed something in our models, or if our fundamental understanding is not complete or if we need to reevaluate the idea entirely," explains Hyll. "Whenever we have synthesis between the two views, we can move on. The idea generation process is no different."

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One paradigm identified by Adaptive Paradigm Alpha focuses on smart farming and involves the increasing automatization and adoption of precision farming techniques, which can both increase yield from farmland and reduce costs for crop inputs such as pesticides and fertilizers. For every idea, Hyll and his team design a new statistical model, based on regression, clustering or other statistical methods, to find and quantify the drivers for the paradigm.

"When we have a feasible idea, we use different statistical methods on which causal inference can be used to find market drivers," says Hyll. "We do not have a single powerful model that finds answers to all unknowns, we have a framework from which we construct models that are tailored to each specific situation," he adds. "Our objective is to identify paradigm shifts and use portfolio construction to extract alpha."

"The universe of impacting factors for a paradigm is typically very large, so a large part of our statistical modeling and analysis revolves around identifying those with the most causal effect," emphasizes Hyll. "We identify causal relationships by connecting patterns in the data to our understanding of the economy to form a view on developments and their drivers."

In the case of smart farming, Adaptive Paradigm Alpha identified that rising crop prices and low-interest rates exhibited strong correlation with sales of farm machinery, indicating a favorable environment for the adoption of smart farming technologies. Hyll and his team also identified ESG-concerns about creating new farmland and the usage of pesticides, which only strengthened the validity of the smart farming paradigm.

In the screening process, Adaptive Paradigm Alpha primarily screens for companies sensitive to a paradigm rather than a set of predetermined key metrics. "While we can make use of all the tools at disposal for fundamental analysis of screened companies, we always want the sensitivity to the paradigm to be as high as possible because that is where we can best isolate alpha," explains Hyll. "Looking for a spread of future returns within a paradigm, a more neutral metric than 'cheap' or expensive,' helps us reduce bias."

"Computers are considerably better at analyzing large quantities of data and using relative sizes for inference, whereas humans are better at identifying and understanding concepts."

Each of the 6-8 paradigms reflected in the fund's portfolio are represented by 1-3 fully beta- and currency-hedged long and short positions. To capitalize on the smart farming paradigm, Adaptive Paradigm Alpha identified an industry leader within precision agriculture and automation as the most sensitive to the paradigm on the long side and a crop protection manufacturer was most vulnerable to the paradigm on the short side. Looking back at the fund's inception-to-date journey, performance attribution shows a contribution of 55 percent from the long side and 45 percent from the short side, reflecting the team's ability to isolate and capitalize on paradigms.

THE BEST OF BOTH WORLDS

"Each step of the process has a quantitative component. Quantitative analysis is mainly used for idea generation, for finding factors driving paradigms, and identifying sensitivity," Hyll points out. "The stock picking itself is typically more fundamentally driven, but also has a quantitative overlay," he continues. "Each process ends with a human decision based on largely quantitative analysis."

"Computers are considerably better at analyzing large quantities of data and using relative sizes for inference, whereas humans are better at identifying and understanding concepts," Hyll elaborates on the advantages of a quantamental approach. "A quantamental approach minimizes the risk of correlation and causation issues by introducing a filter of understanding."

"Quantitative approaches are used to identify patterns in data, but are limited by data availability. In contrast, the human brain has incredible pattern recognition skills, making it possible to identify complex relationships given limited or possibly non-existing data." The human ability to recognize patterns and identify idiosyncratic characteristics of a market is one reason Adaptive Paradigm Alpha will never rely on a fully automated systematic investing approach. "We would be giving up too much by being fully systematic," says Hyll. "There are obvious merits to both systematic quantitative and fundamental investing, this way we get the best of both worlds."

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A Contemporary Evaluation of Key Alternative Investments: CTAs, Risk Premia, and Hedge Funds

By Dan Rizzuto, CFA and Linus Nilsson, CFA

INTRODUCTION

Our article offers a condensed version of a contemporary evaluation of alternative investments represented by CTAs, Risk Premia, and Hedge Funds we recently completed. Here we describe Risk Premia as passive/semi-passive investments in alternative strategies and we have contrasted these investments with the active management approach of CTAs and Hedge Funds. In particular, we note an interesting correlation drift, that may not line up with expected risk and performance characteristics.

Risk Premia was initially presented as a low-cost alternative for various actively managed alternative investment strategies including some used in CTAs and Hedge Funds. In this analysis "Hedge Funds" represent all managers in our universe that are not categorized as "CTAs" or "Risk Premia".

EQUITES ARE THE LEADERS – FOR NOW!

We thought it helpful to look at the recent returns of CTAs and Risk Premia alongside public equities and private equity as additional "alternatives". It may be fair to expect that if accommodative monetary and fiscal activity continues or expands, these equity-centric investments could continue to dominate performance rankings.

Figure 1 and Table 1 demonstrate the particularly favorable environment for absolute returns in equity investments.

The equity out-performance does bring a concern of a reversion to long-term averages. If such a reversion is in store, our analysis of alternative investments here seems all the more pertinent and timely.

FIGURE 1 – NAV CHART

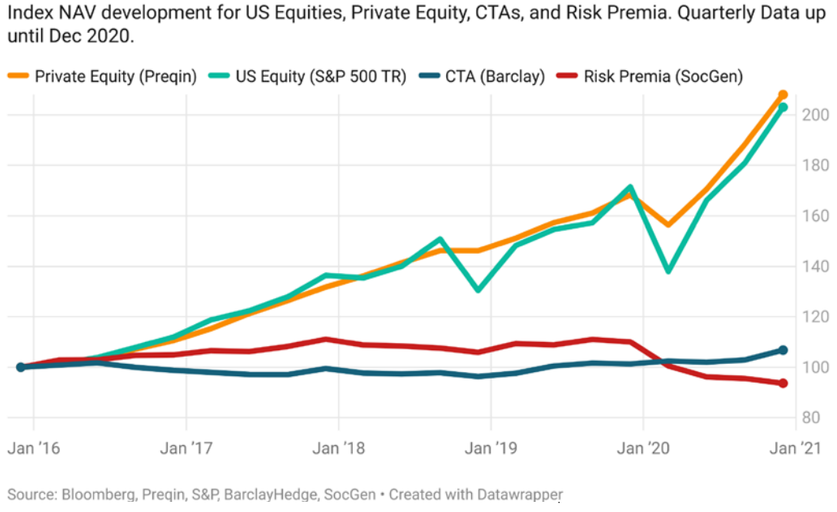

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FIGURE 1 – NAV CHART

Based on Quarterly data. Data up until Dec-2020.

Asset	1yr(an)	3yr(an)	5yr(an)	10yr(an)	Vol(5yr)	Max Drawdown	Corr US Eq	5yr Total Return	10yr Total Return
US Equity (S&P 500 TR)	18%	14%	15%	14%	17%	-20%	1.0	103%	267%
Private Equity (Preqin)	24%	16%	16%	14%	7%	-7%	0.8	108%	277%
CTA (Barclay)	5%	2%	1%	1%	3%	-5%	0.2	7%	6%
Risk Premia (SocGen)	-15%	-6%	-1%	NA	5%	-16%	0.4	-6%	NA

Source: Bloomberg, Preqin, BarclayHedge, SocGen • Created with Datawrapper

Table 1 includes a comparison of return and volatility represented by quarterly returns and risk up to December 2020 in order to align with the quarterly data available for Private Equity (Preqin). A less granular mark-to-market frequency projects important metrics in a unique light. For example, the more muted magnitude of volatility and drawdowns for CTAs on a quarterly basis may surprise some, particularly relative to the other investments listed here.

THE CURIOUS PROGRESSION OF RISK PREMIA CORRELATIONS

Since the advent of alternative beta studies, one of the most researched factors has been time series momentum. This price trend following factor is generally recognized as a primary trading signal for CTAs. This strategy is mostly responsible for the uncorrelated profile of trend following CTAs.

As illustrated in Figure 2 most Risk Premia strategies launched early on implicitly showed a substantial allocation to trend following signals. CTA and Risk Premia correlations were high, and Risk Premia correlation to equities comparatively lower (Table 2, "First Half").

As the universe of Risk Premia grew and matured, their performance profile gradually shifted in favor of a higher correlation to equity risk factors ("Second Half" in Table 2) More recently, Risk Premia strategies have approximately a 0.5-0.7 correlation with the US Equity Markets while CTAs have realized a much lower correlation of 0.1-0.2.

To further understand the change in exposure profiles, we perform a multiple regression with the Fama French Five Factor Model and cross-sectional momentum (FF5). Isolating the behavior of the Market Exposure factor leads us to observe (Figure 3) that Risk Premia strategies have a larger similarity with Hedge Funds than they do with CTAs, especially since 2019.

This is consistent with the observation that both Risk Premia and Hedge Funds may have structurally increased their sensitivity to equity beta. CTA exposure to equities has remained dynamic, largely as expected.

A continued lack of Risk Premia performance in combination with higher correlation to equity markets may for many investors result in another negative performance "surprise", akin to the equity drawdown we observed early on during the Covid-crisis.

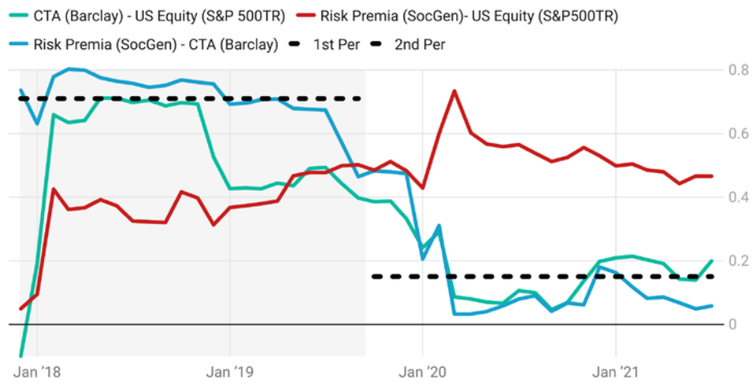
We wonder here if such a downward shock can really be considered unexpected by this point as history is replete with similar events and today's measures project a willing tolerance (again!) for considerable equity beta.

RISK PREMIA AND LONG EQUITY HAVE NEGATIVE SKEW

In Table 3, the results for CTAs (positive skew) and Hedge funds (negative skew) are in-line with prior research and general perception. For Risk Premia strategies, most are realizing negative skew.

FIGURE 2 – CORRELATION DEVELOPMENT

Rolling 24-month correlation between S&P, CTAs, and Risk Premia



Source: Bloomberg, Preqin, S&P, BarclayHedge, SocGen • Created with Datawrapper

TABLE 2 – PERIODIC CORRELATIONS

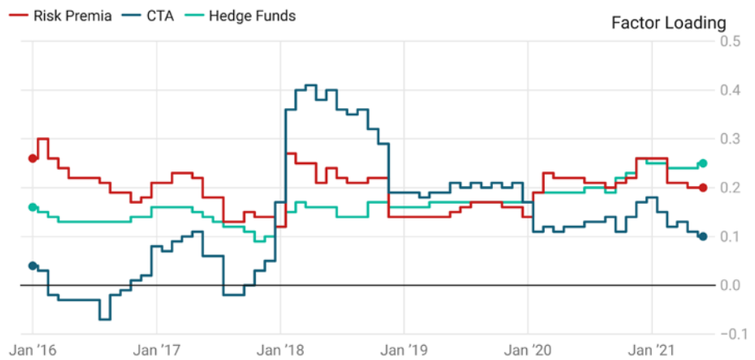
Average of 24-month rolling correlations.

	First Half (Dec-17 to Sep-19)	Second Half (Sep-19 – Jul-21)
CTA (Barclay) vs Risk Premia (SocGen)	0.71	0.15
CTA (Barclay) vs US Equity (S&P 500)	0.52	0.18
CTA (Barclay) vs Hedge Funds (HFR)	0.68	0.13
US Equity (S&P 500) vs Risk Premia (SocGen)	0.37	0.52
US Equity (S&P 500) vs Hedge Funds (HFR)	0.86	0.88

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

FIGURE 3 – MARKET FACTOR

Market Factor (Equity Markets) shows a static long exposure for Risk Premia and Hedge Fund strategies, while CTAs represent a more dynamic exposure.



Source: NilssonHedge • Created with Datawrapper

We observe that Risk Premia strategies have a skew structurally closer to Hedge Funds and equity markets than to CTAs.

ALPHA IS AT A PREMIUM

While there are multiple ways to define Alpha, below we define Alpha as the residual returns adjusted for the FF5 regression.

Risk Premia strategies delivered negative Alpha beyond what would be expected net of costs. Hedge Funds and CTAs have recovered, and on average, delivered marginally positive Alpha over the period. We've seen a recent recovery for Risk Premia in 2021, in terms of absolute return.

RE-EVALUATE YOUR ALTERNATIVE INVESTMENTS WITH A CRITICAL EYE TOWARDS EQUITY BETA

When we evaluate CTAs, Risk Premia and Hedge Funds, comparing their specific return and correlation profiles, some curious, perhaps surprising observations arise.

We observe an evolutionary track of Risk Premia where investment profiles have changed, possibly without intention, but from some perspectives considerably. We note that as the dynamics of investment allocation are challenging enough, a key tenet of successful allocating is an investment's adherence to expected attributes.

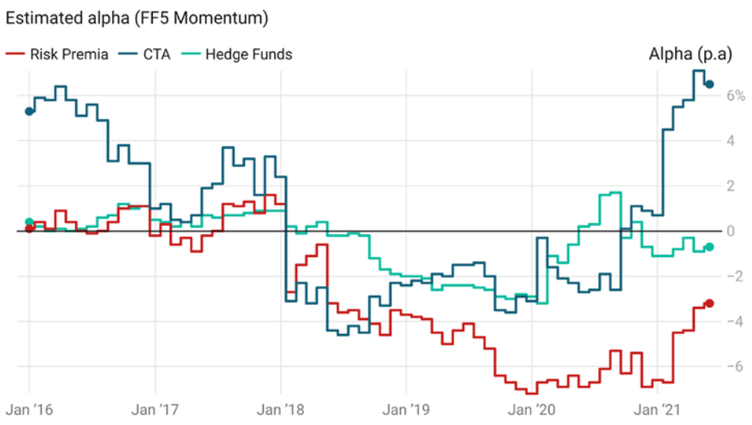
TABLE 3 – REALIZED SKEW

1st, 2nd, and 3rd quartile for individual CTAs, Hedge Funds, and Risk Premia Funds. US Equity Skew, based on the S&P 500 index (from Jan 2016-July 2021).

Quartile	CTA	HF	Risk Premia	US Equity
1st (25th)	−0.3	−1.2	−1.7	
2nd (Median)	0.2	−0.4	−0.7	−1.3
3rd (75th)	0.7	0.1	−0.1	

Source: NilssonHedge • Created with Datawrapper

FIGURE 4 – ROLLING 24-MONTH ANNUALIZED ALPHA ESTIMATES



Source: NilssonHedge • Created with Datawrapper

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„As the universe of Risk Premia grew and matured, their performance profile gradually shifted in favor of a higher correlation to equity risk factors."

If we do return to environment where asset allocation decisions are more akin to those required prior to the period of unprecedented monetary and fiscal stimulus, a more thorough and continuous evaluation of alternative investments, in particular Risk Premia, may be needed.

Indeed, should a reversion back to traditional market dynamics be severe, resulting in another dramatic equity downturn, it is important now to properly evaluate the expectations of your CTAs, Risk Premia, and Hedge Funds in the context of equity market stress, sustained negative equity performance, and increased volatility across markets globally.

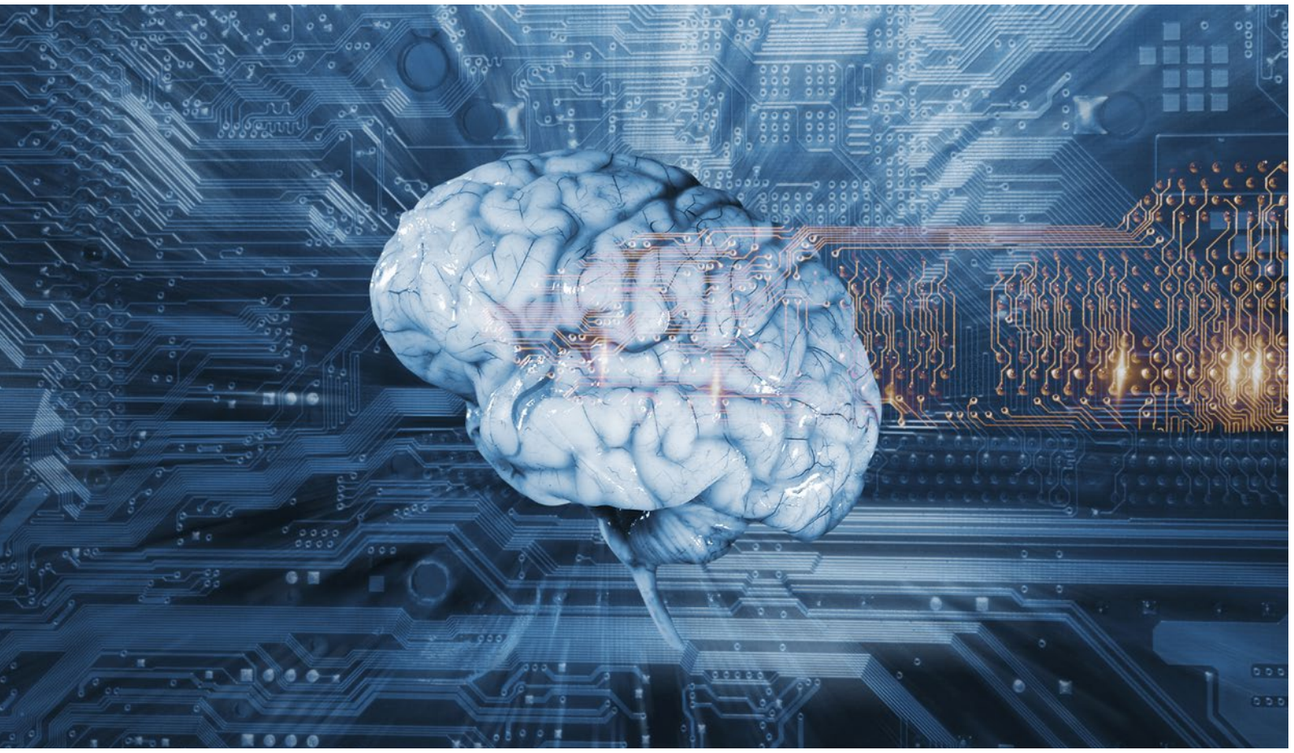
BIO:

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.

Dan Rizzuto, Head of Capital Introductions and Advisory – Marex

Linus Nilsson, Founder – NilssonHedge



AI Aid

By Eugeniu Guzun – HedgeNordic

Artificial intelligence has been a part of the asset management world and the hedge fund industry for some time, with programs increasingly helping fund managers stay ahead of their game by assisting parts of the decision-making process or running portfolios entirely. Artificial intelligence (AI) and machine learning (ML) have been the buzzwords in the hedge fund industry as of late and the adoption of artificial intelligence applications among hedge fund managers has been rising, too. AI and ML applications however may be more suitable for certain trading styles and strategies than for others.

"Eventually every strategy that you can trade can be used in AI or ML concepts," argues Sebastian Schäfer, managing principal of Leibniz Group. The Swiss investment firm, which Schäfer founded following his tenure as Regional Head at one of the largest alternative investment firms, focuses on developing systematic and machine learning-driven strategies. "In the end, every strategy depends on data," he explains. "All managers, either systematic or discretionary, use data and systematic tools for data accumulation and aggregation. Every decision-making process is assisted by these tools, it does not work without them. The only question is whether managers are systematizing their entire investment strategy since eventually pretty much every decision-making process can be systematized," argues Schäfer.

Artificial intelligence, after all, can mimic the decision-making capabilities of the human brain. Martin Källström of Swedish systematic manager Lynx Asset Management corroborates Schäfer's views. "Virtually all hedge fund strategies would stand to benefit from the use of artificial intelligence in some way," Källström, Partner and Senior Managing Director at Lynx, tells HedgeNordic.

"Although purely systematic strategies and managers – like quant equity and managed futures – are most likely to maximize that value," emphasizes Källström. Daniel Broby, Director of the Centre for Financial Regulation and Innovation in the United Kingdom, tells HedgeNordic that the applications and benefits of artificial intelligence can vary greatly from one asset manager to another.

"What AI can bring to the table very much depends on the strategy and what you decide you want your AI to actually deliver for you," explains Broby, who has produced a number of papers on the use of artificial intelligence in banking and fund management. "The specific strategy of a hedge fund manager is very relevant to how you program artificial intelligence and what you want to get out of it. Whoever has the best processing power, the best understanding of the data and the best ability to translate that into a model has the best shot at extracting alpha."

LOW SIGNAL-TO-NOISE RATIO

"Managers with ample resources and extensive experience managing quantitative investment programs should have an edge since the biggest

"Eventually every strategy that you can trade can be used in AI or ML concepts. In the end, every strategy depends on data."

By Sebastian Schäfer

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Per Ivarsson, Head of Investment Management – RPM Risk & Portfolio Management

Martin Källström, Partner and Senior Managing Director – Lynx Asset Management

> "Virtually all hedge fund strategies would stand to benefit from the use of artificial intelligence in some way."
>
> By Martin Källström

challenge in applying AI in finance is how to deal with the low-signal-to-noise ratio and the fact that financial markets are non-stationary," says Martin Källström of Lynx. "This is something that experienced quant managers have assessed before." Sebastian Schäfer agrees. "The signal-to-noise ratio is very low in financial data. It does not allow for AI/ML to give you decisions which will be correct 100 percent of the time, contrary to AI applications in image recognition," says Schäfer. "Letting a machine decide if it is looking at a picture of a cat or a dog is very different to letting a machine decide what the likelihood of an immediate rise in price of a financial asset is, but we believe that a machine is certainly much faster in deciding free-of-emotions what to do next and to accept when it was wrong."

Per Ivarsson, Head of Investment Management at Swedish CTA specialist RPM Risk & Portfolio Management, shares the same views. "The main problem for systematic investment strategies is that financial data has a very low signal-to-noise data," says Ivarsson. "Financial markets usually jump between semi-stable regimes, often driven by narratives. The dynamics and feedback mechanisms can be

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Daniel Broby, Director of the Centre for Financial Regulation and Innovation in the United Kingdom

Sebastian Schäfer, Managing principal – Leibniz Group

quite different, depending on the current regime," he continues. However, Ivarsson believes "the AI field includes a large variety of techniques that can help resolve some of those issues, if employed correctly."

AI APPLICATIONS FOR HEDGE FUNDS

Artificial intelligence has grown its presence across the hedge fund space, having the ability to transform many facets of the industry. Different forms of artificial intelligence such as machine learning and natural language processing are being used and can be used across the industry to improve portfolio management, trading, and risk management practices, among many other things. "You can identify how artificial intelligence can benefit things and gain a competitive advantage," points out Broby, who enjoyed a successful career in the Danish asset management industry prior to joining academia. "Over time, the advantage will disappear because everyone will be employing artificial intelligence, but right now, there is a gap and that gap is there to be exploited."

> "What AI can bring to the table very much depends on the strategy and what you decide you want your AI to actually deliver for you."
>
> By Daniel Broby

"Artificial intelligence can (and is) applied in most areas," points out Per Ivarsson. "For customer experience, there is already a vast selection of available tools from other industries," he continues. "Risk management can benefit to some extent. The problems are somewhat different as they often deal with extremes where data is even more scarce. Risk management, therefore, relies more on hard limits and worst-case scenarios," says Ivarsson. "The most important developments will probably be in the investment area."

"There are many ways a hedge fund can benefit from AI," agrees Lynx's Källström. However, the investment decision-making process is likely to benefit most from the use of artificial intelligence. "Improving technology and increasing computing power has been transforming the hedge fund industry for decades. While AI could accelerate that transformation in various areas, the challenge for all of us will be to increase the forecast accuracy in our investment decisions and to find new and innovative ways to generate uncorrelated returns," says Källström. "This is where the real transformation can occur, in my view. We have found that these techniques are particularly valuable in modeling complex relationships between markets and the factors that are driving their returns, both known and unknown."

SKILL: THE OBSTACLE AND KEY TO AI ADOPTION

"The field is developing at a rapid pace and with the democratization of computational- and storage capacity, there is a certain allure in applying techniques that might not be ideally suited for a particular problem," points out Per Ivarsson from RPM. "When you are holding a hammer, everything looks like a nail. This means that you need quite a deep understanding to identify strengths and weaknesses of the available techniques."

Sebastian Schäfer of Leibniz Group believes that the biggest obstacle to increasing AI adoption among hedge funds managers is the lack of skill. "Some can produce robust strategies and some cannot," says Schäfer. "You can systematize a lot of strategies. A new strategy with a strong backtest might work in a given market environment but will only last as long as there are no major market changes or disruptions," he continues. "You see strategies which work, and then they stop working, either suddenly or slowly, with long track records hiding their decay."

"Our industry is driven by performance. If you generate good performance over a number of years, then building a business around it can eventually lead to success," says Schäfer, who then also goes on to repeat the often-forgotten investing mantra: "but be aware, past returns are not indicative of future performance." Especially among systematic managers, "looking at returns and track records of returns going back 10+ years is most often not very useful since so many things were different back then and old times might never come back or the trading strategy has simply been changed too many times," he argues. "And even shorter track records require proper analysis since you may look at a strategy which improved tremendously since inception. The risk and return statistics might not be representative of what the system can do now, and especially in machine learning strategies, it is possible to never repeat the same mistake twice. Very different to a human, no matter how smart."

> "Artificial intelligence can (and is) applied in most areas. The most important developments will probably be in the investment area."
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> By Per Ivarsson

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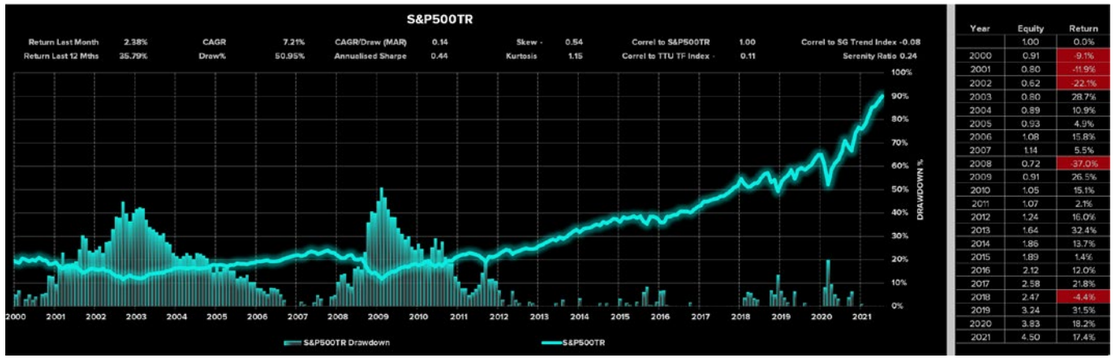
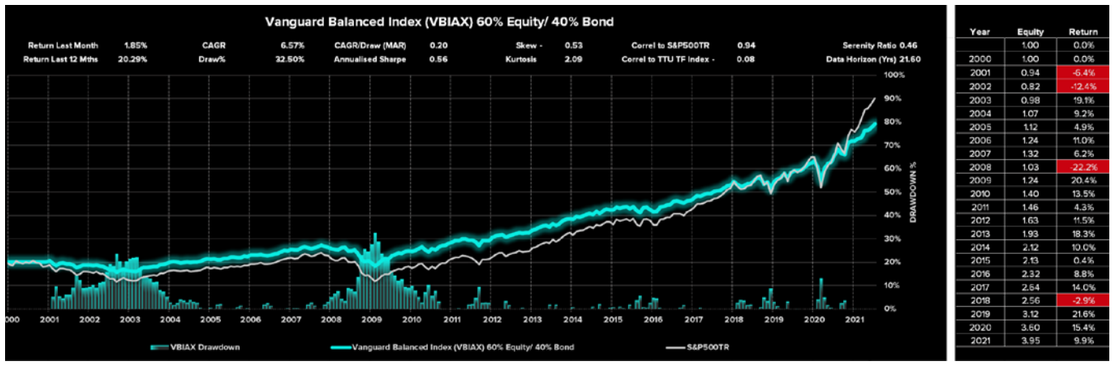
An Alternative to the Classic 60/40 Portfolio

By Niels Kaastrup-Larsen, TopTradersUnplugged &
Richard Brennan, ATS Trading Solutions



Year	Equity	Return
	1.00	0.0%
2000	0.91	-9.1%
2001	0.80	-11.9%
2002	0.62	-22.1%
2003	0.80	28.7%
2004	0.89	10.9%
2005	0.93	4.9%
2006	1.08	15.8%
2007	1.14	5.5%
2008	0.72	-37.0%
2009	0.91	26.5%
2010	1.05	15.1%
2011	1.07	2.1%
2012	1.24	16.0%
2013	1.64	32.4%
2014	1.86	13.7%
2015	1.89	1.4%
2016	2.12	12.0%
2017	2.58	21.8%
2018	2.47	-4.4%
2019	3.24	31.5%
2020	3.83	18.2%
2021	4.50	17.4%

Figure 1: Performance of the S&P500TR Index



Year	Equity	Return
	1.00	0.0%
2000	1.00	0.0%
2001	0.94	-6.4%
2002	0.82	-12.4%
2003	0.98	19.1%
2004	1.07	9.2%
2005	1.12	4.9%
2006	1.24	11.0%
2007	1.32	6.2%
2008	1.03	-22.2%
2009	1.24	20.4%
2010	1.40	13.5%
2011	1.46	4.3%
2012	1.63	11.5%
2013	1.93	18.3%
2014	2.12	10.0%
2015	2.13	0.4%
2016	2.32	8.8%
2017	2.64	14.0%
2018	2.56	-2.9%
2019	3.12	21.6%
2020	3.60	15.4%
2021	3.95	9.9%

Figure 2: Performance of the VBIAX Index

The historic hedging property of fixed income seen over the last 40 years has helped make the long only 60% Equity /40% Fixed Income portfolio a popular portfolio allocation method given the negatively correlated performance nature of so-called risky Equity assets against lower risk Bonds.

The equities boom post 2000 and the tail risk cushioning afforded by Bonds has significantly contributed to the popularity of this simple method of investment allocation.

A popular example of the 60/40 method is a 60% investment in an Index offering wide US stock market exposure such as the Standard & Poor's 500 Index with a 40% investment that seeks to track the performance of a broad, market weighted bond index.

In this article we will use the very popular 'Vanguard Balanced Index Fund (VBIAX) as a proxy for this classic method of Buy and Hold investment allocation.

A 100% buy and hold allocation in the S&P500 Index would have delivered the following performance returns since 1st January 2000 to 31st July 2021.

Figure 1 shows a Compound Annual Growth Rate (CAGR) of 7.21% per annum however we note two significant plus 45% Drawdowns in 2003 and 2009 associated with equity crisis periods. Such extreme drawdowns during unfavourable equity regimes make a 100% allocation towards this style of Buy and Hold investment:

- difficult to psychologically tolerate;
- contingent on optimal timing of investment entry that may take months or years to recover; and
- dilutes the impact of compounded returns over the long term which impedes wealth generation.

The relationship between the CAGR and the Maximum Drawdown provides a path dependent risk adjusted ratio referred to as the MAR ratio (CAGR%/Max Draw%). Low ratios reflect volatile returns for an investor. In the example of Figure 1, the MAR ratio is a low 0.14.

In contrast VBIAX has significantly cushioned this volatility impact without severely compromising CAGR. Figure 2 shows a 6.57% CAGR which is slightly lower than a 100% allocation in the S&P500, but with far lower drawdowns that range between 25% to 32.5% over the same period. This less volatile 'smoother ride' leads to a higher risk adjusted return with a MAR ratio of 0.20.

Strong performance results of Figure 2 support the popularity of the 60/40 Equity/Bond Portfolio since 2000 to current day.

„Prudent investors should consider different weights and/or even better, diversifying into a broader array of uncorrelated asset classes.“

WILL FUTURE PERFORMANCE BE THE SAME AS PAST PERFORMANCE?

The power of this ‘long only’ approach to “Buy and Hold” lies in the embedded assumption that US equities and US Treasuries will continue to display growth in the future and that bonds will continue to provide tail risk protection to investors in times of equity crisis.

However, there are some major factors that concern allocators such as:

- **Treasury Yields are at all-time lows** – The ultra-low interest rate environment is here to stay for a while at least which means that bonds are no longer a reliable source of income and high allocations towards traditional bond portfolios are unlikely to produce meaningful returns in the future while these conditions persist.

- **Investors need to consider a Rising Inflationary Environment** – Rising production costs and relaxed central bank Quantitative Easing combined with various stimulus packages could lead to rising inflation in the medium term. Rising inflation is bad news for fixed income investors as it increases bond yields and correspondingly drives down the valuation of bond portfolios. Furthermore, inflation dilutes real returns.

- **Equities and Bonds do not offer Sufficient Diversification Alone** – The negative correlation between Bonds and Equities has been a recent phenomenon (since the late 1980’s) up to April 2020, but post Covid we have seen the correlations turn positive. Furthermore, over the prior 65 years pre-1980’s, Bonds and Equities have exhibited positive correlation.

Consequently, given these building concerns, many allocators are recommending that instead of allocating 60% broadly to stocks and 40% to bonds, prudent investors should consider different weights and/or even better, diversifying into a broader array of uncorrelated asset classes.

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Niels Kaastrup-Larsen, Founder & Host - TopTradersUnplugged

Richard Brennan, Managing Director - ATS Group

INTRODUCTION TO THE SERENITY PORTFOLIO

There are many options available to investors seeking to diversify their portfolios into more robust uncorrelated alternatives than bond portfolios. One such asset class that strongly features in ‘Alternative investments’ as a powerful diversifier are the Globally Diversified Systematic Trend Following Managers.

This group of Managers place a great deal of emphasis on methods of diversification within their trend following models in terms of geography, asset class, system design, and timeframe to name a few.

Historically Trend Following Managers are almost perfectly uncorrelated to the S&P500 Index. This uncorrelated relationship can be attributed to the extensive diversification achieved by this investment style which naturally is therefore uncorrelated to a single asset class such as equities. This uncorrelated relationship is therefore expected to continue. Furthermore, this style of investment has historically performed very well during inflationary regimes.

The authors of this article have produced a paper that provides a powerful allocation method referred to as ‘the Serenity Allocation’ that selects top long-term Trend Followers from a pool of globally diversified Managers with a long-term track record. The research paper looks under the hood of this powerful risk adjusted selection method and will shortly be available for download through the Top Traders Unplugged website.

The Serenity allocation is not only a very powerful method to consider for a 100% allocation of investment capital, but it also provides a very powerful diversifier for those investors that want to replace their 40% bond allocation with an alternative uncorrelated asset class, that has a track record of performing well during uncertain periods and across a broad class of different inflationary regimes.

A BRIEF OVERVIEW OF THE SERENITY ALLOCATION METHOD

The Serenity Allocation method is a process that can be applied for investors seeking to allocate a minimum of $500K towards this alternative investment class which avoids any possible hindsight bias and allows the investor to select suitable Trend

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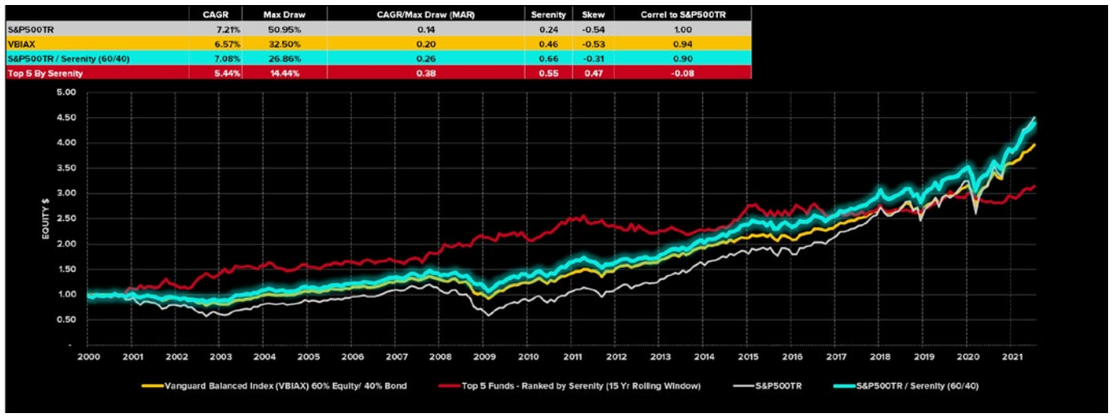

Figure 3: Comparative Performance of Different Investment Allocation Methods

Following candidates that have a long-term track record in delivering excellent risk adjusted returns.

The method looks at a broad selection of Managers and assumes a minimum $500K investment which is equally allocated to 5 programs that meet the following definition:

- Are currently active Programs;
- Possess at least a 15-year track record;
- Are globally diversified and invest across a broad array of asset classes;
- Are fully systematic in nature using quantitative rules-based processes;
- Adopt Trend Following trading methods;
- Offer pooled Onshore and/or Offshore investment vehicles; and
- Allow for a Minimum investment of $100K.

From this selection of current Managers that meet this definition, we then undertake an annual rebalancing process that evaluates using the Serenity Ratio an optimal allocation for the next 12 months.

This Serenity Ratio, unlike the Sharpe and Sortino ratio, is a 'path dependent' risk adjusted metric used for investment selection which evaluates the degree of autocorrelation in a portfolios equity curve and estimates both the average and extreme risks carried by a Portfolio.

The Serenity ratio is used to identify a selection of 5 programs that offer superior risk adjusted returns and can meet minimum investment capital requirements of $500K.

Using a 15-year rolling window, we annually assess the performance of each program using the Serenity Ratio and choose the top 5 ranked performers from the selection as our next 12-month investment selection. Each year we equally allocate our total investment equity towards the top 5 performers selected from this process.

PERFORMANCE RESULTS OF THE SERENITY METHOD

Under a 100% allocation towards the Serenity Portfolio, Figure 3 reflects a CAGR for the 21-year period of 5.44% per annum with a maximum drawdown of 14.44%. The risk adjusted MAR ratio that reflects the relationship between CAGR and the Maximum Drawdown is 0.38 which is far superior to a 100% investment in the S&P500 or a 100% investment in the VBIAX. A smoother ride is achieved through this allocation than these alternative allocation methods without a significant sacrifice in CAGR.

Such low levels of drawdown allow those investors with a higher risk appetite to include a degree of leverage in their funding allocation to achieve higher returns with commensurate increases in overall maximum drawdown. However, for the purposes of this assessment, we have excluded the potential to enhance returns through leverage.

You will notice in Figure 3 that the Top 5 programs ranked by the Serenity Ratio are almost perfectly uncorrelated with US equity market with a Pearson Correlation Coefficient of -0.08 for the performance history since 1st January 2000. And perhaps more importantly, it is unlikely that these systematic globally diversified Trend Following managers will ever become highly correlated with US Equities given their geographic and system diversification.

PERFORMANCE RESULTS OF THE 60% EQUITY 40% SERENITY PORTFOLIO

From our research we can also demonstrate the power of the Serenity allocation method in delivering powerful risk adjusted returns to a balanced portfolio when we replace the 40% Bond allocation with a 40% Serenity allocation across Trend Following managers using this process.

As can be seen in Figure 3, a 60% Equity and 40% allocation towards the Top 5 by Serenity Ratio produces a CAGR of 7.08% with a Maximum Drawdown of only 26.86%. This risk adjusted performance already exceeds the performance of the VBIAX and is likely to continue outperforming under an uncertain future with prospects of inflation tail winds rising.

RESEARCH PAPER

This article introduces you to our research that we will shortly be releasing on Top Traders Unplugged.

"This Serenity Ratio, unlike the Sharpe and Sortino ratio, is a 'path dependent' risk adjusted metric used for investment selection."

Daniel Taylor, CIO – Man Numeric

The Future of Quant Equity

By Daniel Taylor - Man Numeric

Quantitative equity investing is having a bit of a mid-life crisis. Will the same approach that has worked for many of us for several decades continue to work in the future?

INTRODUCTION

Quantitative equity investing is having a bit of a mid-life crisis. Notwithstanding 2021, some of the most popular quantitative strategies have recently fallen on tough times. Will the same approach that has worked for many of us for several decades continue to work in the future? In a world of seemingly unlimited data and far more computing power than many of us could have imagined decades ago, what tenets of the process should we retain? Here, we endeavor to lay out a path forward and highlight what we need to do better.

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Our focus will be on what we believe to be among the most commonly implemented quantitative strategies: cross-sectional, generally bottom-up, strategies.[1] Though these sorts of strategies have been around for decades in one form or another, they really started to gain traction and market share starting in the 1990s. Cross-sectionally oriented quants have historically focused on behavioural anomalies, often revolving around notions of Value (over-reaction) and Momentum (under-reaction). Other types of approaches have also gained popularity, such as Low Volatility or Low Beta strategies. We often attempt to capture phenomena that we believe are pervasive across markets and over time in a systematic and repeatable fashion.

Typically, quant equity strategies are heavily backtest-driven[2] and therefore, at least somewhat backward looking. If one believes the future will look at least somewhat like the past (and often it does!), then a strategy that worked in the past stands a good chance of working in the future. We also know that there will be periods of time when certain strategies are not effective. And conveniently, we are often convinced that those periods often provide the best prospective opportunities! The research process generally consists of generating an insight, backtesting the insight, refining the insight and repeating. If we find that a signal struggles for a period of time, we may conduct additional research to 'fix' the problematic period. Besides signal generation, we also focus heavily on portfolio construction, risk management and execution.

WHERE ARE WE TODAY?

The landscape has become incredibly competitive over the last few decades and there has been wide-spread adoption of quant factors, strategies and techniques. Much of the last decade has been a challenging environment for many quant equity strategies, especially those that focus on Value, Quality, or Low Risk. And in certain regions (like the US), the performance has raised serious questions about whether some of these strategies even work anymore. We think it is important to distinguish between the cyclical and secular challenges that factors like Value may be facing.

"Quantitative equity investing is having a bit of a mid-life crisis."

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On the cyclical side, quants have likely suffered from increasing knowledge about and usage of some traditional factors. Indeed, one might plausibly suggest (with the benefit of hindsight) that many factor-oriented strategies became too crowded at some point over the last decade.[3] Additionally, there is no question that Value has been out of favour for some time[4] and that Defensive or Low Volatility strategies have more recently fallen out of favour. Some of this cyclicality may be linked to monetary policy and the interest rate environment, which is difficult to handicap.

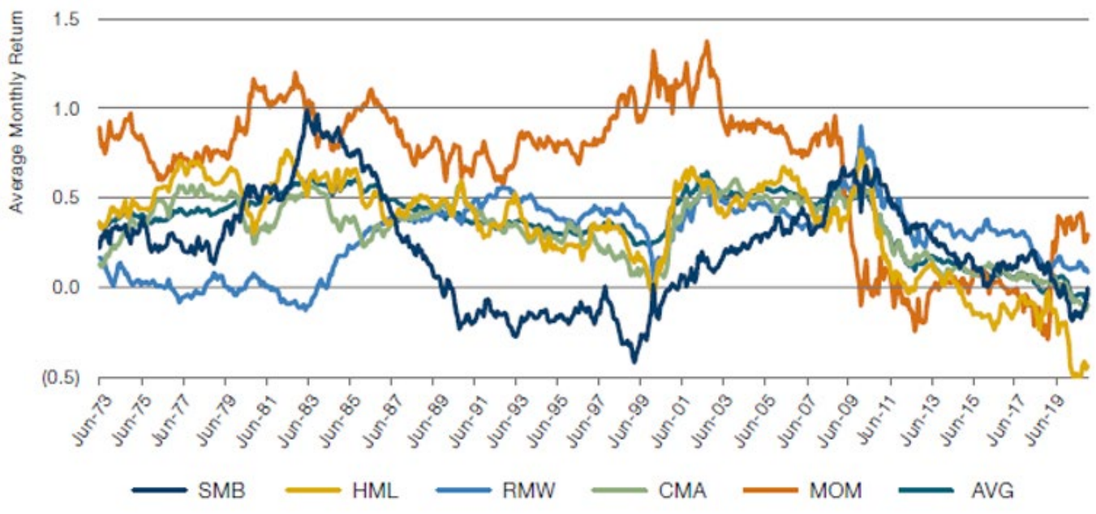
Clearly, low nominal and negative real interest rates have had an impact on asset pricing, and while that is useful as a contemporaneous explanation for the performance of some factors, it is not necessarily predictive. The notion that many of these factors tend to be cyclical is a reasonable foundation to be positively disposed towards factor-oriented strategies today, and in fact, appears to be at the core of the arguments of some proponents.

However, there are also significant secular issues at play. The increased power and prevalence of computers today, combined with the amount of time that many of these factors have been in the public domain, raise serious questions about what edge some of these strategies may reasonably be expected to have moving forward. In fact, it appears obvious that simplistic factor-oriented strategies have exhibited significant secular decay over time, and innovation has been necessary to mitigate that headwind.

Figure 1 shows the rolling 10-year efficacy of the non-beta factors from the Fama-French 5-factor model plus their Momentum returns.[5] It used to be rare for more than one of these factors to exhibit negative returns; however, over the last decade, many of them have struggled, and the simple average of these five factors has been negative over the last 10+ years. And do note this is also before transaction costs.

This is not to say factor-oriented investing will be irrelevant going forward. But it is not reasonable to expect these factors to work as well as they have historically, and that should help inform how we design and implement strategies. In fact, we should generally assume that signals will decay over time and plan accordingly.

FIGURE 1. FAMA-FRENCH 5-FACTOR MODEL + MOMENTUM (ROLLING 10-YEAR RETURNS)



Source: Man Numeric; as of January 2021.

> "This is not to say factor-oriented investing will be irrelevant going forward. But it is not reasonable to expect these factors to work as well as they have historically."

WHERE TO FROM HERE?

First, let us categorise three types of quant equity strategies: factor risk premia [FRP], enhanced beta capture [EBC] and true idiosyncratic alpha [TIA]. In our opinion, most quant equity strategies fall into the FRP or EBC categories. Value- or Momentum-oriented strategies fall in the FRP category, while Low Volatility or Risk Parity portfolios fall into the EBC category. The FRP and EBC categories are different in that FRP requires an asset-specific forecast of returns (typically a transformation of one or more factors), while EBC strategies only require a view on risk (volatility and correlation structure).

The stated benefits of these types of strategies are that they may provide attractive returns and/or risk profiles over long periods of time, have meaningful capacity, and capitalise on behavioural or structural biases that are likely to persist over time. TIA is the most difficult type of strategy to build for a number of reasons – to be truly uncorrelated, it will tend to be more niche and less durable. While some of the content in traditional quant equity strategies may have one day actually been TIA, over time it is has morphed into FRP. We believe recognising the difference between true alpha and factor risk premia is important – for investors and allocators alike.

Let us now posit that most quant equity content belongs in the FRP and EBC categories – so what? While many of the concepts within these categories have been shown to be effective over long historical periods, they can often struggle for periods long enough to test an investor's patience. Value has struggled immensely over the last decade as real rates have gone negative in most of the developed world. Low Volatility may have benefitted from a 30-year bull market in bonds as bond-like equities became more attractive, but what will happen to this type of strategy in a stable or rising interest rate environment?

Another issue is that when quant equity strategies work, a lot of capital tends to flow into them which often begets more good returns and flows (note this may be a challenge for any type of investment strategy). Naturally, as more capital attempts to profit from a particular anomaly, prospective profits will fall until a new equilibrium is found. And then the

FIGURE 2. ESTIMATE OF QUANT MARKET SHARE WITHIN RUSSELL 1000

Source: Man Numeric, 13-F filings; as of December 2020.

positive feedback loop between performance and flows can quickly reverse (as many factor-oriented strategies have seen over the last few years). Figure 2 shows our estimate of quant market share within the Russell 1000, rising in the mid-2000s (a period of good performance), followed by outflows from quant strategies from 2008 to 2012, and then again from 2018 to 2020.[6]

Those are two big problems, but the biggest issue may be that quant equity is almost myopically backward looking. Most quantitative strategies rely on backtesting to find out what would have worked in the past, and then convincing oneself it is likely to continue in the future. Often times, the backtests look unreasonably attractive as a fair amount of 'research' may be conducted to mitigate historical paper drawdowns. It feels like it should go without saying, but quants really need to be more forward-looking in our approach to systematic equity investing. This is not to say history is irrelevant – it is merely stating it is one draw from a distribution, and likely a biased one which could create a false sense of security. When something hasn't worked for a period of time, our prior is that it is due for a rebound, not that it doesn't work anymore, because that is what happened historically.

Interestingly, this false sense of security works in good times as well: when a strategy is performing well, it feels like all is right in the world. Both cases introduce the possibility of complacency: we build a repeatable and systematic process and we are reluctant to change it when things are going well (why disrupt a good strategy?) or when things are going poorly (it will snap back).

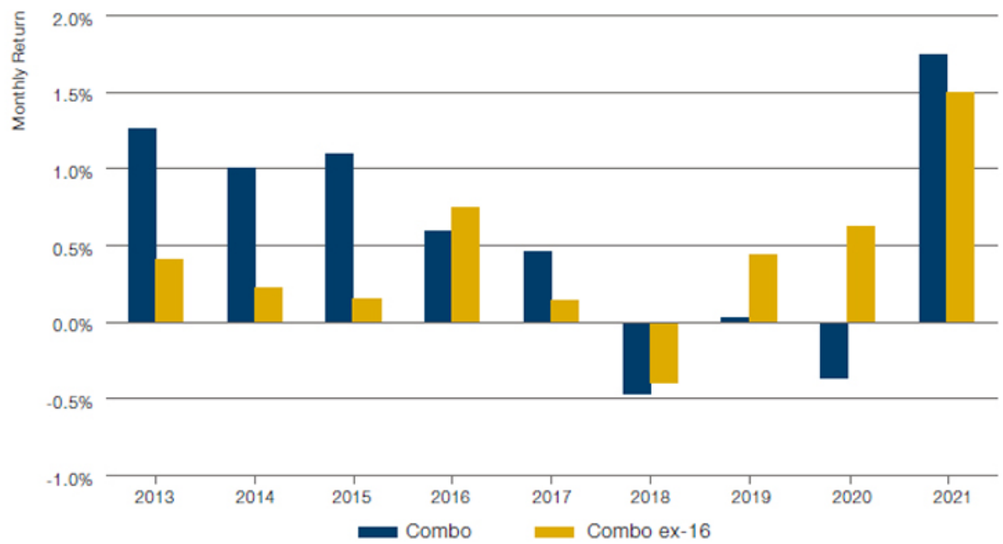
What about true idiosyncratic alpha? Wherever it exists, it is unlikely to persist indefinitely, and also likely has very limited capacity. The alpha may be generated from an operational advantage, a temporary dislocation in the market, or an insight or dataset that has not been commoditised or popularised. But the nature of true alpha is that it will decay and so monitoring alpha decay and correlation structures are critical. To do this well, and at scale, one needs an excellent platform, process and people.

Increasingly, we believe investors should focus on trying to understand which insights are more commoditised or proprietary. One method to do this would be to cross-sectionally neutralise an alpha by a set of generic factors (for example, the Barra fundamental risk factors). Another method is a technique we call Return Neutralisation, which attempts to neutralise to risk factors by estimating a hedge ratio from the time-series of historical returns. Both methods are attempts to determine how much of the 'alpha' process is real alpha versus what can be explained by generic factors. Figure 3 shows the backtested efficacy of the composite alpha within the Global (developed large cap) universe with and without (ex-16) the Barra fundamental risk factors. In the earlier years in the sample, a significant portion of the paper alpha was actually exposure to several generic fundamental risk factors, while in 2019 and 2020, those generic fundamental risk factors were a material drag.

From a product development and positioning perspective, it is quite important to understand the value-add proposition and how one is positioned relative to other participants in the marketplace. True

"Most quantitative strategies rely on backtesting to find out what would have worked in the past, and then convincing oneself it is likely to continue in the future."

FIGURE 3. LONG/SHORT DECILE MODEL SPREADS



	Combo	Combo ex-16	% of Combo
Monthly Return	1.4%	0.7%	54%
Std Dev	2.3%	1.1%	49%
IR	0.60	0.67	111%

Source: Man Numeric; Between 1 January 2013 and 26 March 2021.

Note: All model spread performance shown is gross-of-fees and does not represent the performance of any Man Numeric portfolio or product and should be considered hypothetical. The model spreads shown are long quintile model spreads, (long the top 10% and short in the bottom 10% ranked names) and display the return. These spread returns are instantaneously rebalanced, sector-neutral and do not reflect transactions costs.

alpha is extremely valuable, but not quite as abundant as most of us would like. Fees should be higher and capacity more restrained. That being said, FRP and EBC portfolios can be valuable components to a well-diversified investment program if implemented skillfully and with a focus on minimizing both direct (e.g. fees) and indirect (e.g. transaction costs) drag.

THE FUTURE OF QUANT

So, what does success look like?

First, success in trading or investing must be process-driven – but that process must be dynamic and flexible. The market and players change over time, and at an increasing rate, and a process that does not acknowledge those changes will struggle to consistently prosper.

Second, we believe it is imperative for us to differentiate between true idiosyncratic alpha and risk premia or portfolio construction-oriented strategies. There are important implications on fees, capacity, risk management, aggressiveness of trading and performance expectations. A factor risk premia strategy packaged as an alpha product is as likely to disappoint as an alpha strategy packaged as a risk premia-oriented strategy. It will be increasingly important to understand the differences and implement accordingly.

Third, we as quants need to be more forward looking (and less backward looking!). We need to have a view of what the future might look like and either conviction that a certain signal will be relevant going forward or a strict process to tell us when we are wrong: what is different today or tomorrow versus our backtesting period? Everyone has more access to computing power, data, academic research, historical trading strategies and social networks. How does this impact the rationale of a particular strategy?

Fourth, the price or value of a market or asset does matter. While it is inherently difficult to price or value markets or assets, and there will be periods of time where investors/traders are unbothered by such mundane concerns, having a valuation framework as an input into an investment process should always be relevant (contrary to what some pure growth investors might suggest). The current debate about the relevance of Value or whether or not it is dead is misguided: at a certain price, almost any asset could be attractive or unattractive.

CONCLUSION

The essence here is to more clearly define how we think about quant equity. While traditional factor-oriented strategies have prospered (on and off) for decades, we need to better harness our strengths and recognise our weaknesses. To be clear, this is a direction Man Numeric has been strategically moving towards over the last several years, and in fact, have tried to employ historically. Going forward, there is a need to utilise analytical skills to look forward and identify opportunities and then make judgment calls. The rise of passive, the adoption of ESG, the threat of climate change, the challenges of income and wealth inequality, the integration of technology into our daily being and the changing demographics of the world all potentially provide opportunities to apply analytical prowess to solve the investment problems of the future in a way that cannot be answered in a backtest.

1. Notably we will not be discussing CTA strategies which is something our colleagues at AHL may have a little better insight on.
2. A point we will come back to again. And again. And again.
3. And potentially in the prior decade, circa 2007.
4. At least up until recently...
5. Source: https://mba.tuck.dartmouth.edu/pages/faculty/ken.french/data_library.html#Research
6. Source: Man Numeric; quarterly 13-F data. Based on a list of ~50 quantitative managers.

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ATP's Smart Beta Approach

Christian Kjær, Head of Liquid Markets at ATP

By Eugeniu Guzun – HedgeNordic

ATP, Europe's fourth-largest pension fund, runs an investment portfolio and a hedging portfolio, "with the hedging portfolio taking care of the guarantees that we have and the investment portfolio generating returns on top of the guaranties," according to Christian Kjær, Head of Liquid Markets at ATP. About one-third of ATP's DKK 423 billion investment portfolio is invested in listed equities, with 68 percent of the listed equity portfolio invested globally and 32 percent in local Danish companies.

ATP relies on different approaches to invest in Danish listed companies and international companies. "We have three layers in the liquid equity exposure," Christian Kjær tells HedgeNordic. "We have the Danish equity allocation run by a Danish fundamental stock-picking team that applies a deep fundamental research approach and an active ownership style to invest in local Danish listed companies," starts Kjær. "We also have an emerging markets equity allocation achieved through cheap and efficient investing in futures, and then we have the global equities allocation achieved through a smart-beta approach."

"Our active approach to investing in listed Danish companies is obviously very time consuming and people-intensive, as we need to be close to the companies," explains Kjær. "We have a very long history of working with Danish companies and we see it is part of our obligation as a pension scheme in Denmark to engage with Danish companies," he

"Our active approach to investing in listed Danish companies is obviously very time consuming and people-intensive. Globally, we have a different approach."

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continues. “We believe it makes sense to have this approach in Denmark and lever our institutional power in the Danish equity market.” ATP finds little value in applying this time-consuming and labor-intensive investment approach to global equities.

“If we were to apply the same strategy to global equities, we would need to hire a lot more people and we would need offices around the globe to be able to access different companies or managers across the globe,” argues Kjær. “Globally, we have a different approach. We use futures to get exposure to emerging markets equities and then use a smart-beta approach for getting exposure to other global equities,” continues ATP’s Head of Liquid Markets. “Our emerging market exposure is very simple. It is the cheapest exposure possible with the highest possible liquidity, and in our view, we find that in the futures market.”

“On global equities, we have a smart-beta approach,” says Kjær. “Instead of reading the annual reports of thousands of global companies and doing all the fundamental work our Danish team does, we use a systematic approach to invest in global equities,” he elaborates. “It is simply a way of trying to select the right equities without having hundreds of people employed, it is a very efficient and clean way to invest in global equities. We want to stay lean, which is one of the reasons why we have a quant approach for global equities.”

ATP’S SMART BETA APPROACH WITH AN ESG OVERLAY

ATP’s four-member team focused on global equities weight holdings based on four main factors: low risk, momentum, value, and quality. ATP also relies on an additional ESG factor to pick stocks for its systematically invested portfolio of foreign equities. “We use a fixed allocation to each factor, as we believe we are not able to time market factors,” explains Christian Kjær. “The low-risk factor is an important component for the portfolio because we are constrained by a risk capacity, not as much a capital capacity, in the investment portfolio at ATP.”

“Momentum and value come together and we try to have a balanced exposure between the two,” elaborates Kjær, suggesting that momentum and value work as nemeses with one performing poorly if the other one is performing well and the other way around. “Finally, we recently added quality as a factor to give stronger defensive properties to our portfolio,” says Kjær. “Since momentum and value cancel each other to some extent, and quality tends to balance out some of the value exposure, we do not have a lot of value exposure in the portfolio. It is very much a low-risk/quality portfolio.”

Since 2018, Denmark’s largest pension fund has also added an environmental factor to its quant-based approach to investing in global equities. “Before that, we had been using ESG on the restriction side by excluding certain stocks and industries from the portfolio,” Kjær tells HedgeNordic. “But we decided to find a way to implement ESG investing in a more positive way, to use ESG data to improve our portfolio instead of keeping us out of struggle.” Instead of relying on aggregate ESG ratings from MSCI, Sustainalytics and other providers, ATP opted to “drill further down and get into the rawest part of ESG datasets to find insightful indicators.”

“We do not really believe in these aggregated ESG ratings, partly because it is quite hard to understand the main underlying drivers behind these ratings and partly because different providers tend to disagree quite a lot on ratings,” explains Kjær. “We took a different approach by looking further down into the datasets,” he continues. “Up until now, we have been focusing on the climate side by looking for CO2 efficient companies.”

> “Instead of reading the annual reports of thousands of global companies and doing all the fundamental work our Danish team does, we use a systematic approach to invest in global equities.”
>
> By Christian Kjær
> Head of Liquid Markets at ATP

More importantly, ATP has been implementing the ESG factor in sectors where carbon emissions are a key problem, such as utilities. “We are looking at the sectors where improvements in CO2 emissions we would have the greatest impact on climate change mitigation,” says Kjær. “We recently integrated a leading indicator for ESG efficiency improvements for utility companies,” he continues. “We think we found some data points in the ESG dataset that gives a hint about which companies in the utility sector will improve the most going forward.”

THE ADVANTAGES OF A QUANT APPROACH

“I am a big believer in this quant approach to investing,” Christian Kjær tells HedgeNordic. “Quant-based investing involves a scientific approach to investing. You have a hypothesis of how to select stocks, you can formulate a strategy and you are able to test how the strategy would have performed historically,” explains Kjær. “When you go live, you can compare if the strategy performs as expected. If it doesn’t, you can make some changes and improve the strategy.”

“Secondly, there is minimal key man risk here,” continues Kjær. “A systematic approach to investing is not dependent on one brilliant stock picker, who may decide to leave and shake up the entire approach to investing,” he adds. “For our systematically invested portfolio of global stocks, everything is put into code. If somebody leaves, the code is still here.” And finally, a systematic approach to investing does not rely on a resources-intensive – time-consuming and people-intensive – process.

Raphael Blunschi, CFA, PRM, Founding Partner at Incos.Media Corp.

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The Parasocial Multisensory Virtual Pitchbook

By Raphael Blunschi, CFA, PRM
Founding Partner at Incos.Media Corp.

Let technology do the boring, repetitive tasks so that the smart humans can focus on the quality added-value work.

The asset management industry is an assembly of smart humans. Forward-thinking investors spot new trends, innovative researchers identify new ways to gather and analyze data, and savvy technologists harness advancements in equipment, networks, and software to be faster and more efficient. However, one component of the asset management industry remains frozen in time: Investor Communication.

Whether for traditional mutual funds, hedge funds, private equity, venture capital, or new security issuances, C-level executives conduct exhausting amounts of repetitive storytelling while spending time and money to travel around the world and pollute the environment.

Today, a typical asset-raising effort starts with putting together a PowerPoint presentation. Then, business development teams work to identify potential investors. This phase involves numerous unanswered phone calls and emails. Once the potential investor agrees to meet, the logistical challenges begin: finding a timeslot coordinating, travel to the meeting location in a non-sustainable way, and dealing with flight delays and hotel reservations. Finally, at the meeting, asset managers give their "spiel" for an hour or two. Once that is done with the first prospect, managers then travel to the next meeting – which hopefully does not get cancelled with short notice – and do the same thing all over again.

These logistics cost money and are not carbon free. Often forgotten, there are significant implied costs. C-level executives must spend time away from their core duties. Instead of being good stewards

of investors' capital, asset managers instead spend time on the road repeating stories of "who they are and what they do." With less-mature organizations, this additional time commitment usually conflicts with the phase when C-Level executives are most needed to perform their core duties.

Worse, despite costly preparation and logistics, quite often allocators are completely unprepared for meetings. They do not read the pitchbook or due diligence material because reading lengthy documents is not convenient or engaging. Therefore, capital raisers waste time with "illiterate" audiences.

Once these meetings are done, asset managers walk away without knowing the true interest level from potential investors. Managers can remain optimistic and hope that these prospects are interested. However, there is no data to back this up. It is all a guessing game.

Without investors, asset managers and startups do not have a business. Human interactions are important because investing is ultimately a "trust business." Therefore, the question is how can the finance industry, as a whole, do better to connect capital seekers with capital providers more efficiently? There is a simple answer.

Throughout history, industries have improved their processes by adopting technology. Repetitive tasks have always been the first to be replaced by advanced methods. This is the way businesses and societies have improved their productivity. The asset management industry is overdue for a productivity increase.

First, let's distinguish between A) the simple act of providing information/-data, and B) humans doing quality work to assess an investment opportunity and build trust. Then, let's acknowledge that one needs to have information and data first, before the quality added-value work can begin.

Providing information during the capital raising process is an important, albeit boring, repetitive task. Hence, it lends itself to adopting technology.

A simple way to replace repetitive storytelling is to wrap the content into a Parasocial Multisensory Virtual Pitchbook video, which can be used and reused for an unlimited amount of time.

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"The demand from investors for a more sustainable world, higher returns, and efficient capital allocation processes will force our hand."

The COVID19 pandemic has expedited this transition and the broader trend towards digitalization. Asset managers and C-Level executives are increasingly becoming comfortable with video media. LinkedIn is a prime example of that. This will only continue because the rational benefits of Parasocial Multisensory Virtual Pitchbooks cannot be ignored.

The demand from investors for a more sustainable world, higher returns, and efficient capital allocation processes will force our hand. If you are not sure where the market is heading, look at the younger generation. They have fully embraced video technology and understand how to take advantage of it.

However, we as the asset management- and broader finance industry -have not harnessed this opportunity. Change is overdue. Parasocial Multisensory Virtual Pitchbooks provide a multitude of benefits.

- "Big Data" source to track client engagement
- Sustainable, reduced carbon footprint
- No logistical burden
- Completely scalable
- Provide a broader reach to find interested investors
- C-Level Executives can focus on their core functions
- Convenient way for allocators to consume information (who doesn't like to watch a movie?)
- Analysts don't have to take meeting notes repeating basic information they just received verbally. Video does it for them.
- No need to sit through unwanted meetings
- Boards and Investment Committees, who usually don't meet managers, can see faces and form a visual connection
- More time to build human trust factor
- Prepares allocators for one-on-one meetings
- For regular investor updates, equal and fair information distribution to meet today's compliance requirements
- More economical

Because better information is available with Parasocial Multisensory Virtual Pitchbooks investors are prepared for one-on-one meetings and are therefore able to ask educated questions. Just like that, the quality of the investment selection process improves, and the number of onsite meetings can be reduced. What used to be the second prospect meeting, becomes the first!

Allocators do not want to see highly polished marketing videos with very little relevant content shot in a studio. They prefer authentic videos where manager present themselves in their offices, creating a closer connection with the humans that allocators trust their money with.

In the end, a more convenient, efficient, cheaper way of providing information leads to better educated investors. Better educated investors lead to better returns. This is the ultimate intermediary function of financial markets. It's time to embrace technology.

About the Author:

Raphael Blunschi is a founding partner of Incos. Media. He has a passion for developing new initiatives. His natural curiosity and drive led him from a humble beginning in a 600-person Swiss farming village to the world of finance. He started his career as a banker and discovered the early hedge fund business in 1996. He became a founding member of the UBS prime brokerage business in Zurich, Switzerland and New York. Later he joined RMF, which became part of Man Group, and pioneered one of the first major hedge fund managed account platforms. In his last position, he was the CAO for K2 Advisors, a division of Franklin Templeton (FT), where he was a Member of the Executive Committee, Member of the Operations Committee, and Member of FT's FinTech Opportunities Committee. Raphael's career as a hedge fund analyst, covering a range of emerging hedge fund strategies, has spanned over 15 years. It was during this time that the idea for Incos.Media originated. With Incos.Media, Raphael continues his passion for innovative ideas and simple solutions that add value and adapt to changing times.

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To Stop or Not to Stop

By Eugeniu Guzun - HedgeNordic

Stop-loss orders are an essential piece in the trading strategy and risk management design of many quantitative, trend-based investment approaches. “Stop losses are crucial to protecting investor capital,” Patrik Säfvenblad, CIO at Volt Diversified Alpha, claims, for instance.

“The market is always right,” suggests Säfvenblad. “If we lose money, markets know something we do not, and it is natural to reduce positions in response,” says the CIO of the Swedish fundamentals-based systematic fund that was named the “Best Nordic CTA” of 2020.

Stop-loss orders can minimize the downside and, more importantly, set the stage for securing the upside. “We trade a diversified portfolio, so stop losses also come with the benefit of freeing up risk capital to be used in markets with better risk-reward,” emphasizes Säfvenblad.

“Stop-losses primarily protect against stress scenarios such as a sudden equity crash,” elaborates Säfvenblad. “In those periods, stop losses are crucial.” But these stress scenarios also create attractive risk-reward opportunities for the diversified, fundamental macro manager that uses machine learning and fundamental data to capture price moves across various markets. “Stress scenarios typically offer good opportunities for fundamental trading, so freeing up risk capital from losing positions allows us to enter new signals in other markets,” says Säfvenblad.

Stop losses have similar strategic and practical implications for Karl Oscar Strøm, who uses technical and quantitative analysis to run his Paleo Fund. “One can separate between downsides and strategic and practical implications,” Strøm tells HedgeNordic. “A stop loss is intended to take you out of a position, and the tighter the stop, the more often they get triggered. This can be frustrating for a trader,” he continues. “The Paleo Fund can stay in cash, and this is our fallback position when a stop is triggered.” A triggered stop, therefore, frees up capital for attractive future opportunities.

THE COST OF STOP LOSSES

Getting stop-loss orders triggered “is the price to pay for not having large drawdowns,” asserts Karl Oscar Strøm. “In volatile markets, it is tiresome to see your stops triggered all the time. You get these so-called call paper cuts, small losses. But that is the name of the game,” continues Strøm. “Stop-losses simply eliminate much of your risk as they reduce the cost of being wrongly positioned.”

“Getting stopped out too often can be costly,” agrees Säfvenblad. “Stop losses are costly. Stops close out positions that are expected to be profitable, and the

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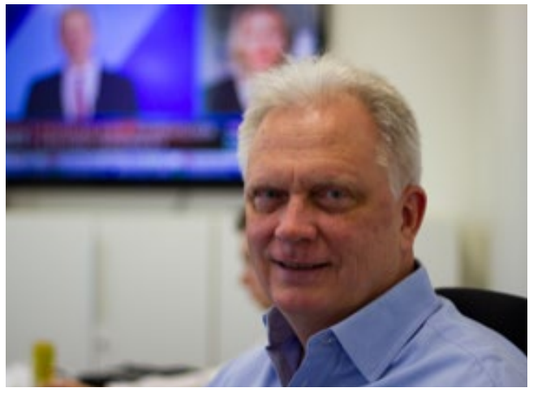
Patrik Säfvenblad, CIO of Volt Diversified Alpha

Karl Oscar Strøm, Founder of Paleo Fund



Markku Malkamäki, CIO of NS Quant

trades often have to be executed in volatile markets with resulting high transaction costs," he continues. "Getting your stop-losses right, determining which positions to keep or cut is one of the hardest achieved, but most crucial part of the secret sauce to a good risk-return profile."

GETTING YOUR STOP-LOSSES RIGHT

Know when and where to place a stop loss is a science. "Every single instrument we trade has its individually-set stop loss level," says the team behind NS Quant, a systematic managed futures fund that seeks to capture positive and negative price trends early across several asset classes. Markku Malkamäki, the chief architect behind the strategy powering NS Quant, says the team has conducted "extensive research in defining the optimal stop loss for each underlying instrument without adding too much trading activity." According to Malkamäki, "the risk management design is a constantly-evolving research process. We are constantly trying to see with more data if we need to modify our risk limits and our positioning."

The team at Swedish Volt Capital Management seeks to "carefully balance the cost of stops with their risk reduction," according to CIO Patrik Säfvenblad. "There is no shortcut here, and it takes a lot of work and careful reviews of results," asserts Säfvenblad. "The problem is similar to the optimal execution of a trading signal. There are multiple trade-offs: When? How much? How aggressive? When do I expect to buy back the position?"

Norwegian hedge fund manager Karl Oscar Strøm also faces trade-offs when putting on stop-loss orders. "If a stock or index consolidates for a while, clear support or resistance levels will be established," says Strøm. "The natural level to place a stop is directly above or below this level," he continues. "Market-makers and other traders know this, and one can often see that these levels get preyed upon or "gamed." But it is hard to avoid, and the downside of not having a stop when you need it is greater."

A COMPONENT OF THE RISK MANAGEMENT DESIGN

"Stop losses are a key part of everyday operations for the Paleo Fund," says Karl Oscar Strøm. "Case selection, position-sizing, timing of entry, and stop-losses together form a comprehensive whole where we can control our risk," he continues. "When having identified interesting situations to put on longs or shorts in stocks or index futures, I look at the price level that if reached would "prove me wrong," explains Strøm. "The distance to this level multiplied with position size defines risk," he adds. "Actually, we use the process backwards, and it is the assigned amount of risk together with the relevant stop loss that defines the position size."

Stop losses are also an important component of Volt's focus on risk management. "Risk management is inherent in our DNA," explains Säfvenblad. "Risk management stretches from a model level, to portfolio construction, trade execution to operation.

It covers all areas; from investing in diversified, liquid markets, having a bottom-up view rather than having a biased in-house view, not making use of high leverage, working a disciplined reduction of losing positions with a stop-loss in every market and more," he continues. "Portfolio construction is a fundamental part of risk management," according to Säfvenblad. "A diversified portfolio with clear limits on factor risks helps protect the portfolio in stress scenarios."

CONCLUSION

For many money managers and investors, the usage of stop losses leads to increased transaction costs, locked-in losses, triggered taxable events, and other downsides. But for a group of quant-based investment professionals who buy and sell securities frequently, stop losses represent a key component of their risk management systems and represent a straightforward way to minimize losses and volatility for their investors.

"Getting your stop-losses right, determining which positions to keep or cut is one of the hardest achieved, but most crucial part of the secret sauce to a good risk-return profile."

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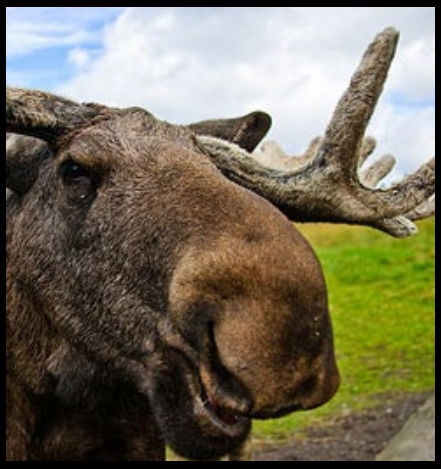

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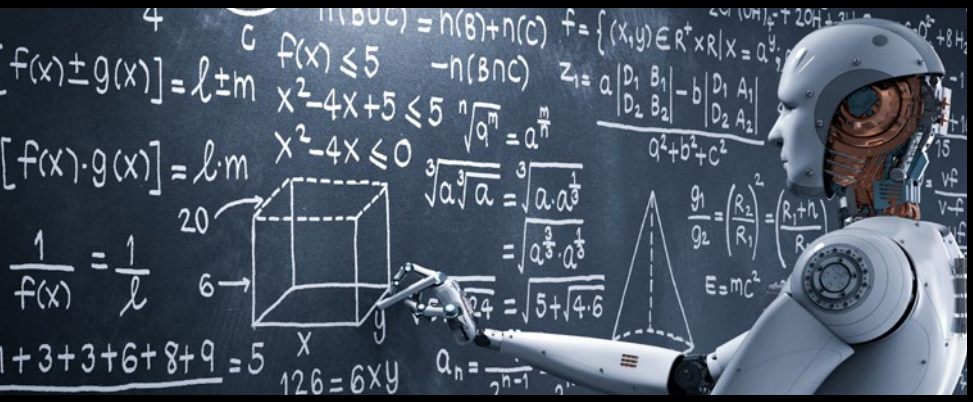

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