

Portfolio Strategy

Portfolio Strategy: Why I am no longer a quant

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Quant funds have been undergoing something of an existential crisis. In aggregate they have badly underperformed in 2020. That might be excusable as high stock and factor correlations, a market led by mega caps and the implosion of the value factor are all inimical to most systematic approaches. However, in a parallel publication today, my colleague Alla Harmsworth shows that what is more troubling is that this is now the third year of underperformance for quant funds ([An existential crisis for quants?](#)).

There are steps that can be taken to address this. However, the core of this essay is about a deeper issue. At their core, quant funds try to apply backtests to future investment decisions. But what does it mean to do quant research and run backtests if the rules have changed? There is a challenge to quant beyond a recent patch of poor returns.

If Covid doesn't count as a regime change I don't know what does. The nature of the policy response is a clear break from the past and directionally points to the possibility of higher inflation but without a commensurate increase in real rates. This is unlike recent decades, with profound implications for factors and asset allocation.

But more important than that, a legacy of Covid will likely be permanently greater government involvement in the economy and in investing. This points to an inherently more political and less technocratic steering of the economy. In a domain like finance that has no theoretical "laws" to fall back on this constitutes a problem.

The other challenge is that quants have relied on a highly diversified approach, both in terms of factor exposures and how that translates into stock portfolios. Yet maybe there is such a thing as too much diversification, to a degree that it precludes outperformance. The explosion of "big data" and machine learning appears not to have helped in this regard either.

Before my quant clients and colleagues disown me - this essay is not saying that quant investing is over. I am definitively not saying its ok to just "shoot from the hip" and invest merely on the basis of a series of views, stories, speculations. We live in a world that is more quant than it ever has been. But what that means has changed

There are practical things that quant-informed investors can do in terms of addressing demand for cross-asset investments, improving growing areas such as ESG, extending time horizons and possibly becoming more concentrated.

So there is a future in using systematic inputs into an investment strategy. At the same time, traditional quant approaches face a high hurdle. The bottom line is that if one believes that the rules of investment are undergoing a change this implies a step away from relying on a back test as the primary rationale or support. If quant investing has to rely on such backtests and a diversified framework, then I am no longer a quant.



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DETAILS

A New regime

In Antonioni's magisterial film *Beyond the Clouds* the Malkovich character has this line "Rather than thinking through my problems I want to feel my way through them". The phrase has been running around, in a way at the edge of my consciousness for a few decades. I think it finds its moment. A systematic approach to investing is, in one sense, the antithesis of applying feeling to investing. Often quant investing has explicitly prided itself at being counter to "behavioural biases" and indeed trading against them. However, we suggest that sometimes "feeling" has to be the way, or at least be allowed to influence it. This is not the "decline from thinking to feeling"¹ but a response to the way the world of investing looks today.

The policy response to the crisis is not, in our view, a temporary stop gap to tide us over just another recession. Instead it represents a permanent change of regime. Regime changes don't happen very often, one can argue *ad nauseam* about what data is required to show that the regime has changed, but if this doesn't count as a regime change then I frankly can't imagine what would? The particular aspects of the current crisis that are most relevant here are the rapid shift from independent monetary policy to a blurred combination of fiscal and monetary policy as the key cushion for the economy over the business cycle and the social impact on unemployment and inequality that seem highly likely to change the level of political involvement in the economy and markets in many countries. A permanently much larger role for governments in economies and financial markets and a process of economic policy formation that is distinctly more *political* than technocratic is a break from the last few decades. We think this also implies a particular set of macro outcomes that raise the possibility that inflation rises but that the yield curve may not steepen in the way that it usually does when inflation rises.

Nearly all models that look back and learn from the past (after all what else have we to go on) will find themselves wanting. Add to that another long-running bugbear, that there will never be anything like laws of nature when it comes to finance² and the basis for forming investment views faces a challenge in navigating this change.

Don't get me wrong. I am not suggesting that a "shoot from the hip" approach in terms of forming investment views is better, far from it. Such approaches to investing are slowly dying out anyway. Markets are more systematic than they have ever been before and will only become more so. This is especially true over short horizons and also within asset classes. The dividing line between "alpha" and "beta" is a constantly moving grey dividing line, but it only moves one way, with more approaches previously thought of as active becoming commoditised and passivised. When we came to Bernstein five years ago one of our opening pieces was [The State of Fund Management: Quants Have Destroyed the Active-Passive Distinction](#). The process of destroying this distinction has advanced further since then. There is very little scope, we think, in coming up with a new active fund that seeks to outperform a broad index with mid to low tracking error and to do so by following some simple investment rules of thumb. An active approach now has to offer more than this. In this sense markets and the process of investing is more quant, or more driven by systematic processes than it ever has been before.

Perhaps life is too short to wait for mean reversion?

Mean reversion is like the holy grail in finance. If one can identify processes or systems that mean-revert then one is freed from having to make forecasts, and humans are terrible at those and too confident in them as well. This makes mean-reverting processes ideal to form as the long-time horizon leg of systematic strategies, and to act as a compliment for mainly trend-following short-term strategies. In a sense the confluence of these two has formed the bedrock of quant investing for decades.

As Keynes famously noted, in the long run we are all dead. The problem is that there is every reason to suppose that we may be in a new world. Observations that count as a regime change could stem from the observation that the recession of 2020 seems likely to be a bigger recession than any that has occurred before while modern investing as we know it has existed. It could also come from the business model changes that occur as a result of the lockdown and the accelerating destruction of "moats" around certain industries. But we think that the principal reason to declare a new regime is the fiscal and monetary policy environment within which economic activity takes place. The world of monetary policy being independent (of politics and of markets) seems likely to be over. Trying to second guess central bank reaction functions can no longer form the mainstay of

¹ Tom Stoppard, *Arcadia*. Said in reference to the supposed intellectual decline from the Enlightenment to Romanticism.

² [Global Quantitative Strategy: Can there be scientific method in finance?](#)

what counts for forming a macro input into investment decisions. Instead, fiscal policy (or a sort of fiscal-monetary policy hybrid) is the cushion for the economy in future recessions. This is inherently more politically driven and not something that technocrats can have exclusive power over. OK it could in theory be handed to technocrats but that seems so far removed from the current political and institutional structure of advanced economies as to be discounted. This means that "rules" gleaned from how investments have behaved as cycles have evolved in recent decades need to be viewed with new suspicion.

Both the current episode of liquidity driving the market rather than fundamentals, and the prospect of a more political steering of the macro economy imply that there may be a tempering of the power of mean reversion. Moreover, we cannot go back. Policy rates have been driven down to zero, or below. Growth has been ever more dependent on debt and the multiplier effect of that debt has declined year by year. A permanently elevated level of unemployment and an explosion of inequality seem to define the future, once the dust has settled post Covid. That will keep the need for political intervention higher, and also likely give extra impetus for a swing away from the share holder-first capitalism of recent decades.

We all need to get used to more government in the economy and in financial markets. The scale of the debt build up, the need for life support for businesses and households, the long run social tension implied by the virus, the inevitable (eventual) increase in taxation all point to a profoundly unsystematic and non-mean-reverting world

Quant funds have hit a bump in the road

Aside from the theoretical case that the world has changed there is also compelling empirical evidence that quant investing as traditionally understood is under severe pressure. Our sample of quant funds that we track has underperformed during the pandemic. Part of the problem this year has, admittedly, been very specific. It doesn't really matter what one's alpha "engine" has been - if the mode of implementation was via diversified portfolios then performance will have been heavy-going this year when leadership has been so narrow. Having skill alone has not been enough in 2020, one had to be skilled and concentrated to outperform³. An environment like that will always be horrible for quant.

For quants a confluence of high stock correlation, high factor correlation, narrow leadership by mega caps amounts to a "perfect storm". Our prior work on what drives performance of quant managers has pointed to these conditions being highly unfavourable⁴. So underperformance in 2020 might be excusable. If it was just that then the advice could be to simply ride it out. Every investment strategy encounters market conditions which temporarily make it hard to effectively function.

However, the brute fact is that traditional quant funds have had a performance problem for three years that pre-dates the current pandemic. This longer run underperformance cannot be blamed on high correlations. It seems more likely to narrow leadership, several factors "failing" and in particular continued failure of the value factor, which is hard to avoid as an input in most systematic funds, apart from those with very short holding periods. A more scary prospect is that it could reflect the apparent failure of a broad set of factors, not just the value factor. Some investors have asked whether these have been arbitrated out?

My colleague Alla Harmsworth shows in a note published today under the Alphalytics brand that quant funds in aggregate run portfolios that offer positive exposures to a broad range of factors, ([An existential crisis for quants?](#)). Indeed the whole ethos of the canonical approach to quant investing in recent decades has been explicitly to offer a diversified approach to factor strategies, so such funds have been practicing what they have preached. But maybe we are in a world where a diversified approach to factors doesn't apply for a long period of time?

The good news is that I have not seen evidence that these factors have been arbitrated out by flows into smart beta. 90% of smart beta AUM is benchmarked to US factors, yet the failure of risk premia to keep up with their long run performance is broader than the US. However, that does not preclude the possibility that quant funds (as opposed to simple smart beta ETFs) might have put too much capital to work in such factors, or that for cyclical reasons several key factors have seen a period where they fail to perform.

This might have nothing to do with the alpha generation process per se. It could also represent a failure of an approach that relies on very broad diversification. Basically, if growth and leadership has become much more narrowly concentrated in the market (as it has been) then there can be such a thing as too much diversification.

³ [Alphalytics: Concentrate and hold 'em](#)

⁴ [Fund Management Strategy: Ending the active performance drought](#)

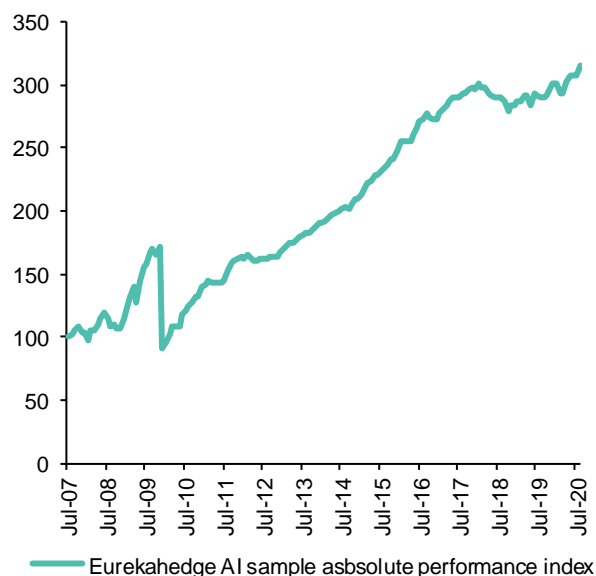
But dude, you forgot the Alpha

It seems highly plausible that a number of “factors” that have been “discovered” over the last decade were nothing of the sort. They were either never there in the first place and merely artefacts of the profusion of over-sampling of data that Campbell Harvey told us about⁵, or they were there in a sense but have simply been exploited by too much capacity that stops them from working. There is always the possibility of constantly attempting to discover new systematic data in new datasets, and indeed that is a potential business model for some investors, under the guise of a constant IT and data arms race.

I once, some years ago, made the case in a client meeting that quants can eke out a better path to growing assets by fine tuning their portfolio construction and time horizon and the way they combine factors to move beyond simple linear combinations of factors. The quant PM across the table objected and interrupted me: “but dude, you forgot the alpha”. He was alluding to the great hope of quant investing in the last decade which has been the emergence of vast quantities of alternative data and greater acceptance of machine learning approaches by fund investors and the possibility that this would open up a whole new future of quant dominance.

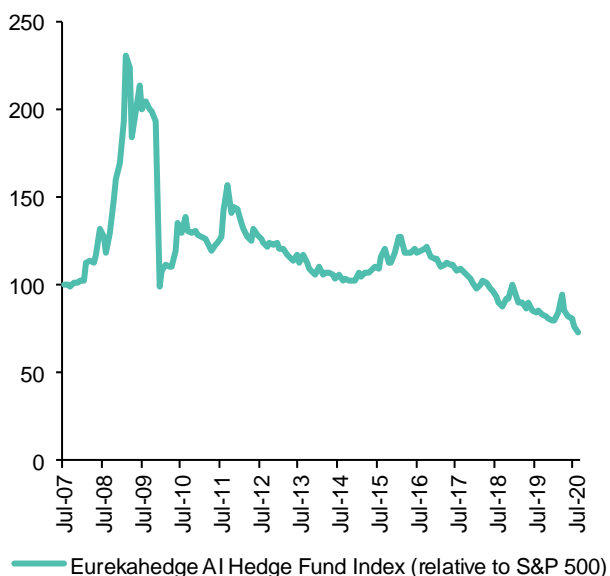
The performance of a group of quant hedge funds that identify themselves as AI-led has been positive in absolute terms, but even for them the recent performance has been below their historical norm (over an admittedly short look back period), and that performance has not been enough to keep up with the overall equity market (Exhibits 1 and 2). The performance of equity quant hedge funds overall tells a similar story (Exhibit 3). The evidence seems to be that, so far at least, such approaches might help but still not be enough to make a strong case of outperformance of such strategies in aggregate. That is not to say they cannot work, but they may also face headwinds in periods when diversified approaches struggle. There is also an issue that they might lead to a quant “arms race” approach and hence rely on factors that have short half-lives.

EXHIBIT 1: **AI Hedge Fund Index (absolute)**



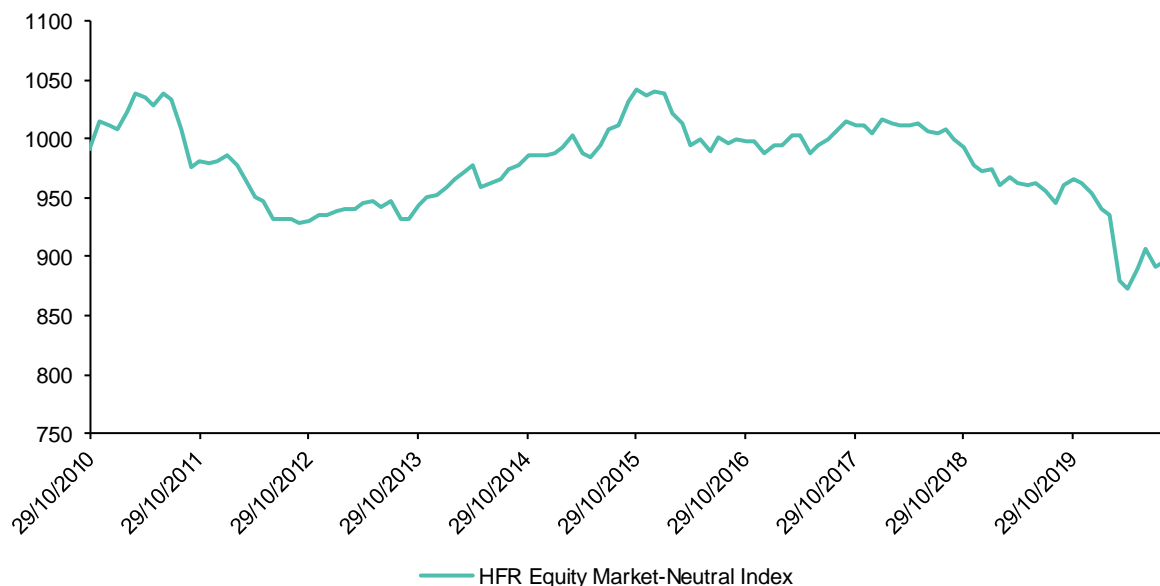
Source: Eureka hedge, Bloomberg, Bernstein analysis

EXHIBIT 2: **AI Hedge Fund Index (relative to S&P 500)**



Source: Eureka hedge, Bloomberg, Bernstein analysis

⁵ Harvey, C (2013) ...and the Cross-Section of Expected Returns available at https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2249314

EXHIBIT 3: **Equity Market-Neutral Index**

Source: HFR, Bloomberg, Bernstein analysis

Conclusion

This essay is not meant to be seen as in any way being anti quant funds, far from it, I strongly believe that there are very good reasons to put a systematic process in the heart of an investment strategy. Markets today are more systematic than at any point before.

However, the process of forming investment views is undergoing a profound change. The rules have changed from those that held for the last 40 years. Moreover, if it was just a question of adapting to a new regime then a good algorithm should be able to do that. But things are not as simple as that. There is the distinct possibility that the future is one that involves a greater role of politics in economics and investing, and so suggests an environment that is more inimical to pure rules-driven views of the world.

In addition to that the *structure* of the market has been such that a diversified approach to factor investing has simply not been helpful. Maybe parts of value can rebound, as we have discussed in a recent note⁶, but can we afford to rely on a constant set of exposures to a broad set of factors? Maybe that approach that offers diversification is actually offering too much diversification to be of use?

It is often hard for quant investors to incorporate explicit macro calls into their investment process. Indeed, one could argue that they should not attempt to do so, it is not something that can be backtested and it is very hard to have an edge. We would certainly not want to advocate a switch to “quantamental” investing. That was tried after the global financial crisis, it implies a regular use of discretionary overlays and anyway is a depressingly ugly neologism. However, occasionally changes in the macro status quo come along that investors do need to adapt to. The possibility of higher inflation but without higher rates, or the role of ongoing greater government involvement in the economy are such changes we think.

One thing quants have succeeded in doing is destroying the active-passive distinction. So making a statement like “I buy cheap stocks in a sector that have growing margins, or secure free cash flow” sounds to us increasingly like an intent to invest passively, with consequent fee implications. Instead the reason for each individual investment at the stock level may need non-replicable idiosyncratic reasons for it - if stock alpha is the main source of alpha for the fund.

⁶ [Portfolio Strategy: Value is dead, long live value](#)

I was hired by my current employer with a job title that involved the phrase “quantitative strategy”. I have come to the conclusion that I have no idea what that label really means. Yes all investing needs to be aware of systematic signals, either as a basis for forming views, or at the very least to know what kinds of views can be taken in a commoditised way. But at the same time the rules are changing for investors to a degree we have not seen in decades. It leads to the more interesting question of what KINDS of views are the key ones, the label being less important.

Yes the march of passive to encroach on areas that used to be thought of as active will be relentless. As we have said many times before, if the metric of opportunity set of the active management industry is the percentage share of AUM run on active vs passive approaches then look away now. We see no (and we mean no) realistic near term upper limit on how far passive share of equity and fixed income AUM can go, and that will penetrate the alts space too. But if active management is considered the delivery of an overall return stream that necessarily spans asset classes then the outlook is more rosy, add onto that the need to link investment and tax decisions in a closer way and again there will be plenty of work for active managers to do.

So where does this leave one?

In the short term correlations may be held higher by central banks, that is likely not great for traditional quant approaches but ultimately that is a temporary issue. We don't believe that correlations are permanently higher, they are ultimately a function of the cycle.

One massive advantage that quants have in theory is generally a more disciplined approach to portfolio construction, an ability to process mass data, an awareness of which simple factors are available for free and above all an awareness of the importance of investment process. These attributes could be used to stand them in good stead.

One area where this could be brought to bear is ESG. It is an area of investing that seems set to grow fast, especially in the US. 2020 has seen an affirmation of ESG in terms of asset share growth. However, the area is beset by problems relating to poor data quality (no one agree on definitions, lack of agreement of scores and chronically low frequency of data). ESG may be an area which is ripe for greater quant involvement, both to "disrupt" it and to passivise some of what passes for active ESG investing, but also on the active side too in helping to achieve a higher quality approach.

Quants can also choose to align themselves with the passivisation trend. Fee pressure is never going to go away, so continually shifting the barrier between what counts as active and passive is another route to go. In a sense this has been implicitly a path that has been trodden since the financial crisis. While active quant AUM share has suffered, so-called smart beta has grown hugely. However, we recognise that this is not the preferred path of defenders of quant investing, there has to be a higher goal.

One option is to overlay a policy view. We may not be able to apply backtests now in the same way as one could historically. Having said that one can try to unstitch different elements of the historical efficacy of factors and apply it to a view of where macro forces will move. A specific example would be trying to unstitch the roles of inflation expectations and forecasts of real rates in the functioning of a value factor and investing today in that part of value that can respond to inflation in the absence of rising rates. Such impositions of a macro view might be uncomfortable, but the exceptional circumstances might warrant it.

A more radical approach would be to recognise that the diversified approach to factors and to stock positioning might be flawed. Thus a more concentrated portfolio both in terms of factor exposures and especially when it comes to the number of securities could be desirable. Quants have traditionally been diversified, but there are other possibilities.

Likewise, quant funds tend to have short holding periods. Yet our Alphalytics research suggests that longer holding periods might help ([Alphalytics: Concentrate and hold 'em](#)). There is a deeper issue here in that asset owners who face a harder task of preserving purchasing power may well be forced to adopt longer horizons. Addressing the agency issues inherent in such an approach would be key.

There is also a cross-asset angle. We think that some of the major portfolio flows in coming years could be from investors who are taking a cross-asset view. We recently showed ([Fund Management Strategy: Let's play Twister, let's play Risk](#)) that pension plans might have little choice but to put factors alongside asset classes in their approach to asset allocation. Thus developing factors that fit into a cross-asset view and might even be explicitly cross-asset in construction is an approach that could meet a growing investor need. This also would be supported by an investment environment where a greater share of the active investment view is taken at a more macro level and further removed from single securities, given the explosion in the number of indices and ETF products that allow an investment in a segment of the market rather than a single security. After all, there are 70 times as many equity indices today as there are equity securities.

Active management in general may also need to think more broadly about how they add value to their clients. This goes beyond the narrow question of selecting individual assets that may do well, and this applies equally to those of a systematic investing disposition. For example one of the most important areas of investing over the next few years is going to be figuring out how the goals of asset owners need to change, and with that their governance structure and what this means for how they employ asset managers. This implies that the type of funds which are attractive, how they are selected and how they are assessed will go through a process of revision. Another example might be the tax burden of investors, not usually a topic for quant investors. But if "betas" are set to deliver lower real returns in upcoming years (which we think is likely) and taxes are set to rise (also likely) then it implies that tax decisions might be a relatively larger determinant of the post-fee, post-tax return than an investor faces.

There is a future in using systematic inputs in an investment strategy. At the same time, traditional quant approaches face a high hurdle. If one believes that the rules of investment are undergoing a change and don't resume a mean-reverting path then this implies a step away from relying on a back test as the primary rationale or support for an investment strategy. Process is important in investing, but also occasionally the system changes in a way that means that process has to adapt in a profound way. I believe there is a case to be made that we are seeing such a change now. This applies both directionally in terms of factor views but also in the way these are implemented in a highly diversified portfolio. All of this points to a more uncertain and more intellectually murky future. If quant investing has to rely on such backtests and a diversified framework, then I am no longer a quant, however systematic inputs into an investment process are more important than others.

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