



Perspectives on Alpha Decay and Turnover in factor strategies

Weak performance in many systematic factor- and risk premia strategies between 2017 and 2022 (and in some cases even beyond) sparked a lot of discussions about alpha decay in this type of strategies. Empirical research, index vendors, QIS- strategies from investment banks as well as offerings from asset- and ETF- managers faced massive critique – as always when performance fails to live up to expectations. We have written about some of the pitfalls in factor- and other systematic strategies on several occasions (i.e. [Noisy factors](#), 2024; [The Smart Beta Mirage](#), 2020) and even if investors take most of our points into account, it isn't a guarantee for exceptional performance – at least in the short run of a few years. The preliminary climax seems to be the recent work of Lopez de Prado and his colleagues, which propose a new form of factor approach, i.e. in “Causal Factor Analysis is a necessary condition for investment efficiency” ([Lopez de Prado](#), 2025). Due to their opinion, the misspecification can be so large, that *“investors buy what they should sell and vice versa”*.

Two of the most important aspects in factor strategies seem to be false discoveries and repricing effects. A third dimension of alpha decay deals with optimal rebalancing and turnover and this is a question affecting all active managers, independently of factor-, systematic- or discretionary managers are concerned.

The discussion on the growing number of factors traces back at least to Cochrane's presidential address to the American Finance Association in 2011, in which he called the numbers of new pricing factors into question and shaped the expression of a “factor zoo” ([Cochrane, 2011](#)). Five years later, Pontiff and Mc Lean took a closer at “out-of-sample and post-publication return-predictability of 97 variables that academic studies show to predict cross-sectional stock returns” in a paper entitled “Does Academic Research Destroy Stock Return Predictability?” ([Pontiff and Mc Lean, 2016](#)). Harvey and Liu provided a compilation of more than 400 factors in “A Census of the Factor Zoo” and concluded, that *“many of them are false”* ([Harvey and Liu, 2019](#)). Penasse delivered an insightful summary of empirical findings in “Understanding Alpha Decay” ([Penasse, 2022](#)) and provided three lines of thinking with respect to factors, i.e.

- patterns that represent risks
- mispricing
- false discoveries.

Moreover, and that is an important feature of all risk premia strategies, he makes the distinction between ex ante (“expected”) and ex post (“realized”) returns or simplified: if recent returns have been far beyond average (high realized return), expected (forward/ ex ante)

returns should be lower – or even negative. *“I show that post-publication excess returns can be positive even though an anomaly is disappearing, that is, the alpha is decaying. The reason is that market participants in the process of trading away the anomaly will initially increase the realized anomaly returns.”* Large parts of the returns can be related to “repricing effects”.

From our point of view, true risk premia can’t be simply arbitrated away in the long run, whatever the long run means. As long as the underlying risk is still present, there will be a risk premium available. That’s why they are called “beta” or “systematic risk factors” and can’t be diversified away. Nevertheless, the drawdowns can be painful and the recovery can take quite a long time as the “equity risk premia” in Japanese equity markets (~ 30 years drawdown from 1989 - 2022) or German equities (nearly 20 years zero return between peak 2001 and Corona low in 2020) have shown. The same is true for factor premia, where US- Low Risk underperformed ~ 40 % during the run up to the TMT- bubble between 1995 and 2000 or during Value’s underperformed between 2017 and 2022.

Mispricings on the other hand should be expected to be traded away over time. In our line of thinking, these mispricings represent “alpha” - opportunities or a return for “idiosyncratic risks”, which can be diversified.

Finally, the discussion on “false positives” masks the fact, that there should be

- true positives
- false positives
- true negatives and
- false negatives.

“True positives” should be a scarce good. More than a decade ago, we found, that ~ 16 metrics grouped into six factors should be able to span most of the available factor returns – a finding which has been confirmed by Blitz et al in “Factor Zoo.zip” ([Blitz, 2023](#)). “False positives” are the epicentre of critique as can be seen above-

“True negatives” are never discussed – nobody is talking about results, which are regarded as useless and which never will make their way into a journal. “False negatives” on the other hand contain a lot of investment value. The reason for that is, that their (recent) history – live period or in many cases backtests and all the associated statistical properties – look quite negative. In short: “nothing to gain here, move on”. But if the underlying economic intuition is valid, the future might look much better than the past. As mentioned above, Japanese or German equities are examples as well as the S&P 500 in the early days of the 20th century. In all cases, nobody would have been called the existence and the reemergence of a positive equity risk premium in question. By the way, Low Risk outperformed over 15 years after the drawdown came to an end once the TMT- bubble imploded in 2001.

For investors treating factor returns as “alpha” and requesting a three-year track record before considering an investment, these opportunities are normally unavailable.

This leads us to another aspect, which is about rebalancing and turnover. Most empirical papers rely on a yearly data discovery and portfolio rebalancing – in many or most cases in June. The reason for this is, that researchers take yearly reporting frequency, adjusted by a time lag, into account. In a paper entitled “Anomaly Time” ([Bowles, 2023](#)), the authors “show that anomaly returns are concentrated in the first month after information release dates, and these returns decay soon thereafter” and “also show that the academic convention of forming portfolios in June underestimates predictability because it uses stale information, which makes some anomalies appear insignificant” – something that should be expected in a world, in which information is as cheap and available in lightspeed as never before. Unfortunately, even many index vendors don’t care as this example of the MSCI Momentum Index shows: “The MSCI Momentum Indexes are rebalanced on a semi-annual basis, usually as of the close of the last business day of May and November....”(MSCI).

When we implemented our strategy development- setup in 2012/2013, we discussed these issues as well and as a result, introduced the concept of “forward returns”, which explores the return decay of decile portfolios over time. As can be seen from the example of a momentum metric in the following table showing the factor excess return as the spread between 10th and 1st decile. The excess return decays by more than 50% in the first couple of weeks after formation. Around the 9th month, the return spread between 10th and 1st decile is essentially zero. The results are a confirmation of what the authors of “Anomaly Time” found.

Momentum Deciles / Forward Returns					
	1 M	3 M	6 M	9 M	12 M
1	0,41%	0,59%	0,55%	0,60%	0,67%
2	0,66%	0,53%	0,67%	0,67%	0,80%
3	0,64%	0,73%	0,66%	0,59%	0,81%
4	0,69%	0,71%	0,83%	0,75%	0,71%
5	0,79%	0,81%	0,61%	0,67%	0,68%
6	0,84%	0,69%	0,78%	0,79%	0,64%
7	0,81%	0,85%	0,71%	0,80%	0,62%
8	0,79%	0,83%	0,70%	0,80%	0,69%
9	0,89%	0,79%	0,84%	0,77%	0,69%
10	0,90%	0,76%	0,76%	0,58%	0,71%
10 - 1 Decile	0,49%	0,17%	0,21%	-0,03%	0,04%

Source: Alpha Centauri, 2025

Finally, that brings us to the question of optimal turnover and with respect to this, we have exhibited a lot of questions about high turnover in factor strategies. But as can be seen from the example above, markets are quite fast in pricing out a lot of the factor return in short time frames. In a recent paper by Northfield entitled “Alpha Decay and Optimal Turnover” (Northfield, 2025), the author state, that *“most strategies have alpha decay such that they have no predictive power over long periods”* and *“Optimal turnover is a path-dependent function of how alpha estimates decay”*, confirming our view of excess return deterioration in factor strategies. From our point of view, turnover is always reasonable, if the expected excess return of a rebalanced portfolio is high enough compared to an unchanged portfolio – after transaction costs. In our example above, the extra return between 1- and 6-month is 3,5% p.a. – more than enough to compensate for transaction costs.

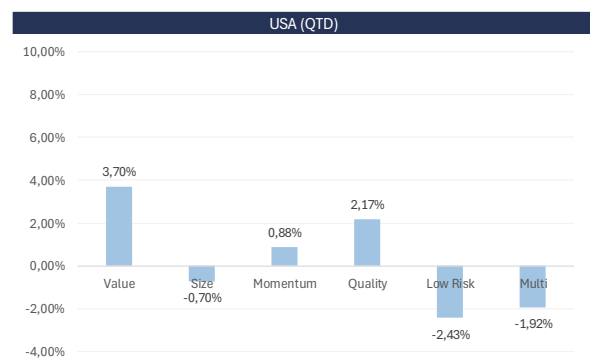
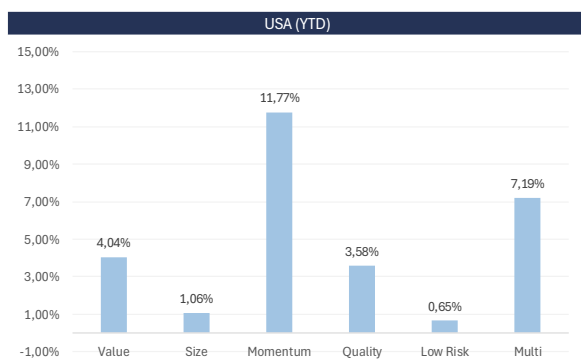
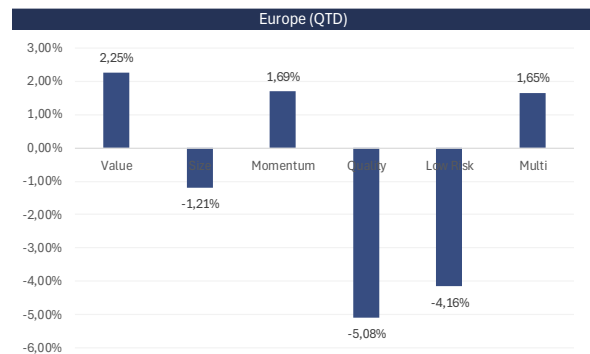
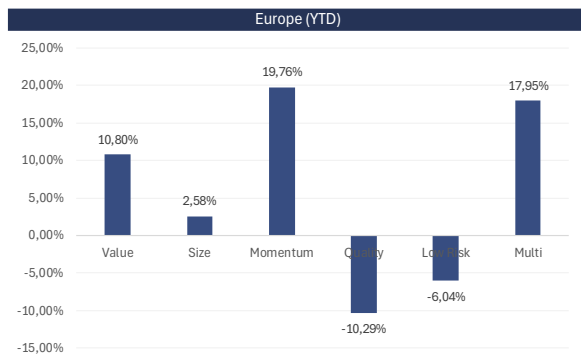
Conclusions:

Simple backtesting and evaluation of statistical properties are not enough (at least to us) when validating factor- or risk premia strategies. The better way seems to be to compare the results with the underlying economic institution. This might lead to sticking with strategies showing weak backtest results, where the economic environment has been the reason for abnormal low returns or drawdowns and to give up on strategies with exceptional performance but where a reasonable economic explanation can't be found. The same is true for investors evaluating factor- or risk premia strategies. Factors represent non-diversifiable systematic risks and not alpha. A request for “track record” leads to disappointment in most cases.

Higher rebalancing frequency and turnover are justified in most factor strategies due to high alpha decay in a world of cheap and fast information.

Factor performance:

Value, Momentum and Multifactor outperformed in Europe during Q3/2025 while Quality and Low Risk faced heavy headwinds. Stronger Value and weaker Low Risk performance could also be observed within US. Year to date, Momentum is the best performing factor on both sides of the Atlantic. Even more interesting – all factors delivered outperformance YTD in the US.



Source: STOXX; Alpha Centauri calculations

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