

iSTOXX Europe Factor Indices Quarterly – Unimpressed by recent market volatility, the factor family outperformed again towards its 2nd birthday

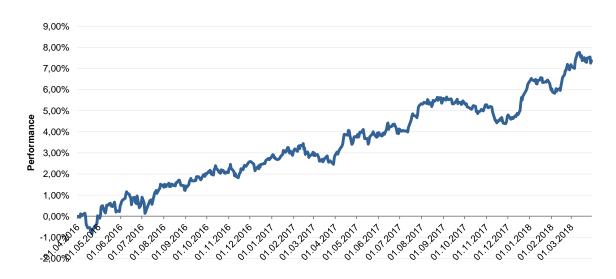
Market developments since mid of January might look like a watershed in a few years' time. Similar to developments during the Asian and Russian crisis and the LTCM debacle 20 years ago, when stock/bond correlation started to become negative because markets sniffed more disinflations or even the danger of deflation ahead, the change in correlations marked the end of the first half of a 30 year bull market in bonds.

Most investors **underestimated the message and the consequences** especially for real assets by buying the dips in a roaring equity bull market. In 2000, the German DAX index peaked at 8,000 and it took two additional attempts and fifteen years' time to clear the hurdle - while the bull market in nominal assets went into the second half.

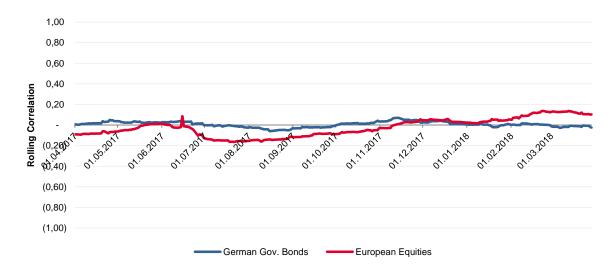
But - something like a "golden age for diversification" in traditional asset classes (or risk premia) developed, Balanced and Multi Asset portfolios as well as several forms of Risk Parity strategies proved to be quite successful between 1997 and 2015. Thinking in asset class silos and the hunt for yield led to high allocations in bonds, especially credit risk. But as interest rates for government bonds became too low or even negative, the risk profile of credit changed materially. Today, it is more or less "low volatility equity risk" and Balanced, Multi Asset, Risk Parity and Wealth Management portfolios exhibit a similar profile as High Yield Corporates. Combined with CPPI or stop loss strategies - replicating a long call option - it might be challenging to make money down the road, as the call premium is getting quite expensive when correlations change and (credit-) risk free or low risk assets lose money in line with equities.

If this stock/bond correlation change will become permanent, **investors have to find new return generating as well as diversifying assets** and with respect to these requirements, the iSTOXX Europe factor index family is sending a promising message since being live.

iSTOXX Europe factor index performance (equal weighted aggregate)



iSTOXX Europe factor index correlations (equal weighted aggregate)



As the **index family celebrated its**' **2**nd **anniversary**, it's a quite good opportunity to have look, what we achieved so far compared to other solutions, with respect to investable products and additional opportunities in risk management.

Return/ Risk review

As mentioned in the analysis after the first year, the comparison doesn't claim to present a complete picture, as we don't have access to all concepts out there and there are new families available as well. Another point to bear in mind is that concepts differ with respect to turnover, implementation costs etc. The graphics show excess return and tracking error vs. parent indices, if implemented long only or absolute return and volatility, if implemented long/short, of seven different families we follow.

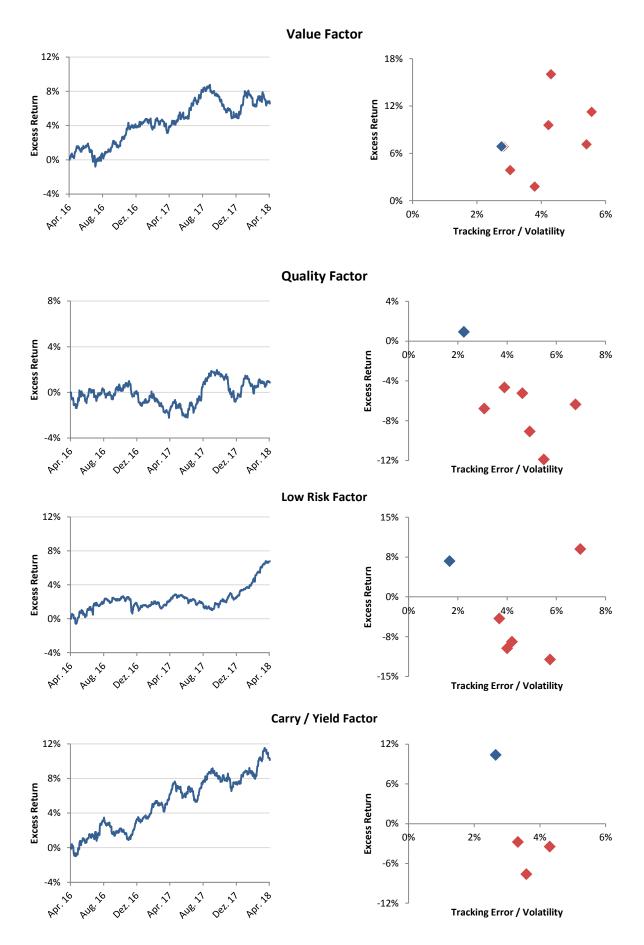
Key takeaways:

- all six single factors as well as the multi factor outperformed the only family compared to other Long Only families with a complete offering
- in six out of seven cases, the iSTOXX factors lead in return/risk space
- in some factor categories, excess return differences between an iSTOXX factor and those in other families are quite large, i.e.

Low Risk - 18.5% Carry / Yield - 18.0% Quality - 10.0% Size - 15.4%

confirming a statement, we've made in 2015 in an article titled "Liquide Alternative Risikoprämien - keep it sophisticated simple" on altii – platform, forecasting that there will be huge differences in return - not only in level, but even in sign - and risk between factors targeting the same risk- or factor premia.

Factors in detail (iSTOXX blue dots)



Momentum Factor 12% 12% 8% 8% **Excess Return Excess Return** 4% 4% 0% 0% 0% 10% -4% POL'JO -4% Tracking Error / Volatility **Size Factor** 12% 16% 8% **Excess Return** 8% **Excess Return** 4% 0% 0% 0% 2% 4% 6% -4% POL 70 -8% Tracking Error / Volatility Multi-Factor 4% 4% 2% 2% **Excess Return Excess Return** 0% 0% 1% 2% 4% 0% -2% -2%

-4%

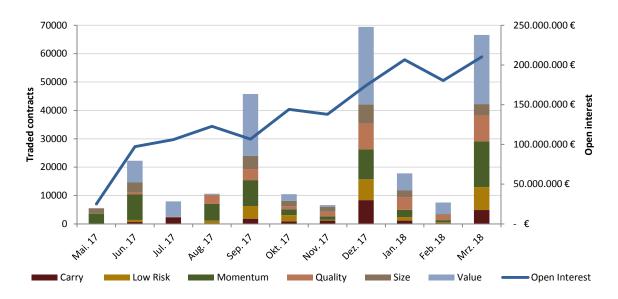
Tracking Error / Volatility

AUE. I Der. 16 POL. 70 AC Calcuations, Bloomberg Data (01.04.2016 – 01.04.2018), Excess Return vs. Parent Index

-4%

EUREX Futures on iSTOXX Europe Factor Indices (Long Only)

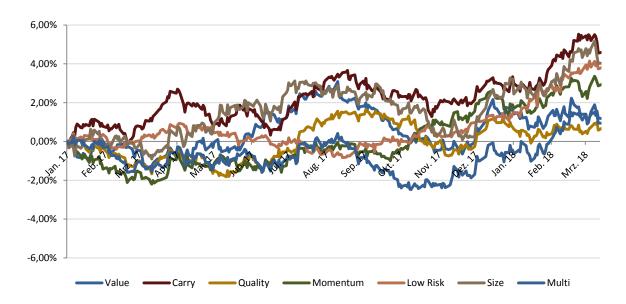
EUREX introduced Futures in May 2017 and until end of March 2018, **270,000 contracts** have been **traded. Open interest** increased continuously, **trending around 200 mln.** € currently. Value and Momentum attracted most of all volumes traded.



Beyond expressing investment ideas in trading the single futures Long Only, the futures offer an opportunity to extract the individual premium in each factor by going long the factor future and short the market via STOXX 600 future or to replicate the index aggregate by equal weighting all single futures and short the market in an easy to implement 1:1 setup. More information on EUREX landing page: http://www.eurexchange.com/exchange-en/products/idx/istoxx

iSTOXX Europe Market Neutral Factor Indices

In January 2017, market neutral factor indices have been introduced. Since then, all indices delivered positive absolute returns. The indices are a combination of the Long Only equity basket, rebalanced monthly and a rolling short position in STOXX 600 futures, recalibrated to "beta 1" weekly.



AMUNDI ETF on iSTOXX Europe Market Neutral Multi-Factor Index

In November 2017, AMUNDI unveiled the first ETF on a market neutral factor index. One of our arguments for market neutral indices in 2015 has been that at one point in time, the bond bull market finally will come to an end and investors will have to look for new diversifying, low cost, liquid assets without exhibiting market risk.

The new ETF attracted **inflows of more than 400 mln. Euros** during the first four month. In March, the ETF "was crowned by l'Agefi with the European ETF Innovation Award 2018 in the Equity category".

More information on AMUNDI's web page: https://www.amundietf.fr/professional/Common-Content/news-and-publications/2018/In-the-spotlight-Amundi-ETF-innovative-Market-Neutral-exposure

iSTOXX Europe Factor Indices enter FIS - APT risk model

In a client notification titled "Improvement", FIS™ announced the addition of the indices to their Equity-, Balanced- and Multi Asset - risk models in April 2017.

"We have added iSTOXX Europe Equity Factor indices to our models as part of our explanatory factors offering. These indices were constructed by STOXX in conjunction with our partner and **factor investing specialist, Alpha Centauri**. The factors seek to capture six key risk premia - Value, Carry, Momentum, Size, Low Risk, and Quality....." and continued... "The factor set currently covers European Equity. APT will look to add coverage of additional regions and asset classes in line with future iSTOXX releases....."

With the indices now being part of the APT-risk models, they returned to one of their origins, as they have been developed and are rebalanced monthly by using the APT model. Since then, FIS clients enjoy a virtuous circle of identifying, analyzing and - in combination with investable products in form of EUREX futures and the AMUNDI ETF- managing their exposures in European equity factors without the well-known factor alignment problems.

Factor performance Q1/2018

First quarter performance has been the 8th consecutive quarter of positive excess returns – quite remarkable given the return of volatility during January/February. Aggregate performance of the six single factors has been + 1.05%, while the multi-factor outperformed by 1.34%. Low Risk led the table, outperforming by +2.68%, followed by Size with + 1.92%. Performance of Size seems to be a surprise, but Size started quite well in January and lost parts of its outperformance during Jan./Feb. only to improve again towards the end of the quarter. Value (-0.21%) and Quality (-0.18%) held the red lantern after Q/1.

Overall, outperformance of the six single indices during the second year of being live exceeded the 2.80% of the first twelve month by nearly a percentage point – a time frame in which European equities delivered -0.15% and German Government bonds -0.60%.

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