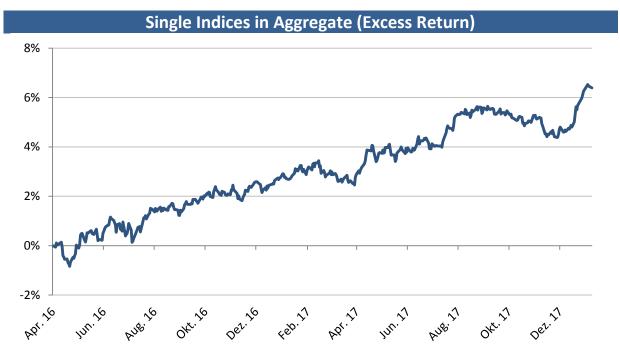


iSTOXX Europe Factor Indices Quarterly - Decoupling from weaker Smart Beta performance - again - ...

... was one of the major results of 2017. The index family continued to deliver excess return in aggregate for the **7**th consecutive quarter during the last three month of 2017. Moreover, **December 2017** proved to be the **best month since the family went live** in April 2016, delivering more than 1% in excess performance.



Excess Return vs. STOXX 600

Smart Beta strategies continue to attract inflows according to a recent FT article (more). Referring to data from ETFGI and Morningstar, the article points out that Smart Beta volumes grew 30% in the first 11 month of 2017 (the fastest since 2009) and fund volumes increased to 1tn USD recently. For those, singing the "Siren song" of capacity constraints, that's roughly the current market cap of Apple (900bn). Even recognizing, that not all exposure are held in funds and ETF, the market seems to be still in its infancies. That's especially true with respect to Europe, where adoption rates and volumes are still low compared to US.

Part of the story might be that more defensive (i.e. low volatility) and yield seeking factors (i.e. dividend yield) which attracted most of all inflows over recent years in ETF and mutual funds had a tough time with respect to performance during the last two years - underperforming their market cap benchmarks by around 5% (dividend indices) and up to 13% (low volatility indices).

In a report titled "Anleger agieren bei Strategic Beta alles andere als smart" (more), Morningstar's editor in chief for Germany, Ali Masarwah, cited "serious misunderstandings" with respect to Smart Beta as one of the reasons for outflows of 1,4bn. Euros (20% of volumes) from Low Volatility ETF's in Europe over the last 12 month.

More defensive factors like Low Volatility and Quality have been the main beneficiaries of what a recently released STOXX Pulse Online article (more) described as a "Lost decade" for European equities. So it shouldn't come as a surprise, that if this "lost period" will be finally behind us, strategies, factors, investment styles and fund concepts, which have been in favor during the last 10 to 15 years, will lose some of their appeal and with respect to mutual funds - five star ratings.

Given the growing number of press articles, publications and our own experience from field trips, Mr. Masarwah seems to be right with this conclusion. But as long as investors evaluate Alternative Risk Premia, Smart Beta (or factor investing) and other sources of systematic risk in the same manner and with the same toolkit as "sources of Alpha", more disappointment seems to be inevitable.

The flip side of this coin was presented during a Brighttalk webinar in November titled "Why have most smart beta and factor investing offerings underperformed recently?" During the introduction, results of our internal observations have been confirmed, that a large number of factor indices across several providers exhibited underperformance compared to broader benchmarks (if Long Only) or even posted losses (Long Short) - apart from the question of "defensiveness" mentioned above. The moderator of the session cited market beta and sector deviations as two sources for this ongoing underperformance and recommended "market exposure control" as one possible solution.

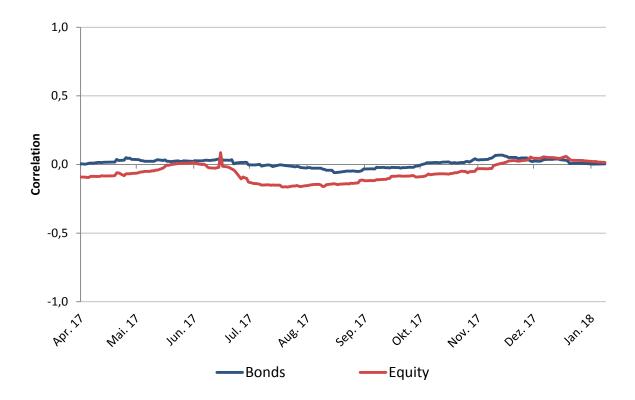
As we have practical experience since the end of 2009 with those types of investments, **one of several lessons learnt** is, that it is quite difficult to turn empirical or mathematical findings into real world investment performance. **Controlling** for market **beta** in a way shown during the webinar for example **didn't prevent us from losses across** *all* **of our factor strategies during the EURO crisis** – independently from factor exploited and region (Europe and US then).

EUREX futures on iSTOXX single indices

Traded volumes finally surpassed the 1bn Euro mark in December - seven months after the introduction of the futures. A closer look at the daily trading statistics reveals an interesting observation, as it seems to be the case that more and more investors try to replicate the aggregated single index performance from Page 1 of this report, by investing equal amounts of exposure in all six indices (or futures). Given the fact that diversification in Smart Beta is as important as in other fields of investments, equal weights in all single indices in absence of a dedicated factor rotation strategy are one way to achieve that. See more information about the futures at the end of this Quarterly.

Excess return volatility of the aggregate (6 single index-) position has been around 2% since "Going Live". Moreover, investor's utility is enhanced by the fact that correlations to traditional sources of return - i.e. equities and government bonds – hovered around "0" since then.

Single index-aggregate: almost uncorrelated to traditional investments



AMUNDI ETF on iSTOXX Europe Multi-Factor Market Neutral Index

On 7th of November, **AMUNDI launched the first ETF linked to a market neutral factor index**. In terms of AUM, the new ETF **attracted inflows of 240 million EUROs** during the first five weeks of trading! Given the fact, that the ETF wasn't available for trading across multiple exchanges in Europe (but will be according to press releases) during the start – **a quite impressive result.**

The concept of the market neutral indices is available in a research paper, released in May 2017 by Dr. J.C. Plagge, Head of Applied Research at STOXX and his team.

The <u>paper</u> offers insight into the unique concept of the indices, leading to **low correlations to traditional asset classes as well as among factor returns** and for end investors even more critical, how the indices can help to **mitigate two of the main problems** of a "Low Return World":

- sources of return as an alternative to fixed income
- sources of diversification as bonds lost their role

Detailed information about the ETF are available (here) on AMUNDI's website.

ISTOXX EUROPE FACTOR INDICES – HARVESTING EQUITY RETURNS WITH BOND-LIKE VOLATILITY



STOXX

MONOVATIVE GLOBAL MONCES

Introduction of iSTOXX USA factor indices

At the end of November, the factor family has been expanded with the US companions of the iSTOXX Europe factor indices. **Design** and basic setup are **identical to Europe** and they are benchmarked to the recently introduced STOXX 500 USA, offering the **opportunity to** compare the factor performance directly to a US market cap benchmark and **extract the individual factor premia in a risk controlled structure**.

Factor performance Q4/2017

As can be seen in the aggregate of the single indices above, the **index family continued to outperform** after a few weeks of consolidation during the second half of September and end of November. As the indices are live now for 21 month and 2017 has been the first full calendar year, we put together an overview over different time frames, which we think is self-explanatory.

iSTOXX Europe factor Indices - Excess returns vs. benchmark

	Since 01.04.2016 ("going live")	Since 31.12.2016 ("year to date")	Since 30.09.2017 ("quarter to date")
Value	7.43%	2.17%	0.01%
Carry	8.67%	4.09%	0.32%
Quality	1.21%	1.76%	-0.36%
Momentum	7.47%	4.15%	3.20%
Low Risk	3.50%	1.52%	1.46%
Size	9.23%	3.21%	-0.71%
Multi-Factor	0.64%	-0.07%	1.07%

Excess return vs. STOXX 600 as of: 31.12.2017

2017 has been a quite interesting year, in which two new index series (Europe Market Neutral and US Long Only) and the first investable products (futures and market neutral ETF) linked to the iSTOXX Europe families finally went live. Both products are innovations in European financial markets and as these are results of our work of 2015/2016, expect more to come.

Thanks to all who helped to get there and best wishes for a healthy and prosperous 2018.



Alpha Centauri Indexing - Data as of 31.12.2017

Description:

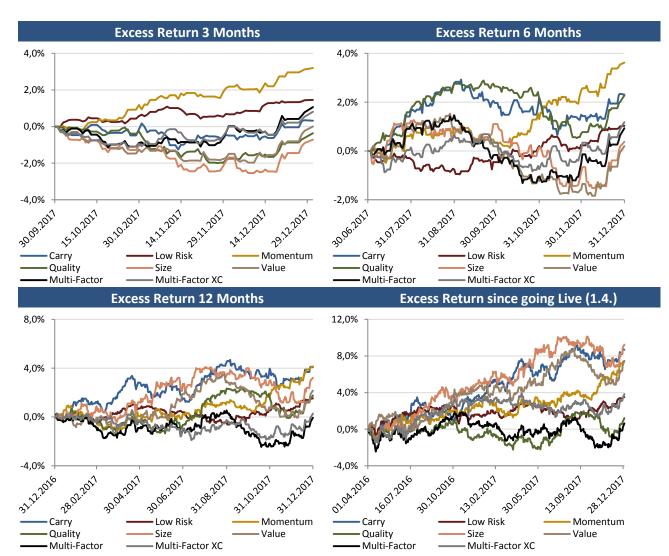
The iSTOXX Europe Single Factor index family developed by STOXX in collaboration with Alpha Centauri offers investors a unique and very innovative way to target and capture premia.

It consists of six single factors that aim to capture well-known risk premia and one multi-factor that aims at simultaneously capturing premia from the aggregate of all single factors rather than from just one source of risk alone.

All indices are constructed to maximize the exposure to their particular factor and minimize unwanted risks. While constructing the final indices the FIS APT risk model is used to measure and restrict risk.

For more information go to www.alpha-centauri.com or www.stoxx.com

Performance and Volatility Breakdown							
Name	Ticker	Return 3 Months	Return 6 Months	Return 12 Months	Return Live (1.4.)	Vola pa	Vola pa Live (1.4.)
Carry	ISECFER Index	0,9%	5,6%	14,7%	31,4%	15,3%	13,2%
Low Risk	ISERRER Index	2,0%	4,3%	12,1%	26,2%	14,0%	12,3%
Momentum	ISEMFER Index	3,8%	6,9%	14,7%	30,2%	14,9%	12,9%
Quality	ISEQFER Index	0,2%	5,6%	12,3%	23,9%	14,9%	13,0%
Size	ISEZFER Index	-0,1%	3,7%	13,8%	31,9%	15,2%	13,4%
Value	ISEVFER Index	0,6%	3,5%	12,7%	30,1%	15,9%	13,8%
Multi-Factor	ISEXFER Index	1,6%	4,2%	10,5%	23,4%	14,4%	12,5%
Multi-Factor XC	ISEXFCR Index	1,4%	4,5%	10,9%	26,5%	14,8%	12,7%
Benchmark	SXXR Index	0,6%	3,3%	10,6%	22,7%	15,2%	13,1%



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Futures on iSTOXX® Europe Factor Indexes at Eurex Exchange

New Product Offering

On 3 May 2017 Eurex Exchange launched Futures on iSTOXX® Europe Factor Indexes. For the first time European factor futures are now listed on an exchange. The tremendous growth of passive investing has created a need for more sophisticated or diversified index concepts that – in recent years – went away from market cap completely by using different selection and weighting methods. This trend has led to the development of several systematic rules based on strategies / indexes that are designed to isolate the return of factors, which have typically earned a risk premium over long periods of time. The launch of Futures on iSTOXX® Europe Factor Indexes, enables Eurex Exchange to offer instruments for institutional investors to capture factor risk premium.

The majority of index-related investing and trading is based on market cap indexes; at Eurex Exchange there are now over 100 STOXX® products listed based on this traditional index calculation concept.

One of Europe's most liquid indexes in terms of derived products, STOXX® Europe 600, is used as a benchmark. iSTOXX® Europe Factor Indexes offer investors extraordinary transparency through historical risk statistics, monthly risk scans and scenario analytics.

The evolution of indexing has filled the gap between active and passive investing. iSTOXX® Europe Factor Indexes capture six different equity risk dimensions: Size, Value, Carry, Low Risk, Momentum and Quality.

Factor returns 170 160 150 140 130 120 110 100 2004 2006 2008 2010 2012 2014 2016 Carry Momentum Size Low Risk Quality Value

The iSTOXX® Europe Single Factor Indexes exploit six different dimensions:



Contract specifications

	iSTOXX® Europ	e Factor Index F	utures	STOXX® Europe	e 600 Index Futu	res (FXXP)	
Underlying index	iSTOXX® Europe Low Risk, Momentum, Quality, Size, Value, Carry			STOXX® Europe 600 Index			
Index type	Net return index			Price index			
Contract value	EUR 50 per index point						
Tick value	EUR 5						
Price quotation	In points with one decimal place						
Minimum price change	0.1 index point						
Contract months	Up to 9 months; 3 quarterly months						
Settlement	Cash settlement, payable on the first exchange day following the final settlement day.						
Final settlement price	Based on the average of the respective iSTOXX®/STOXX® index calculations from 11:50–12:00 CET.						
Last trading day and final settlement day	Third Friday of each maturity month if this is an exchange day; otherwise the exchange day immediately preceding that day. Close of trading in the maturing futures on the last trading day is at 12:00 CET.						
Continuous / TES	08:00-22:00 CET						
Flexible contracts	Available						
Minimum block trade size	1 contract			100 contracts			
Fees	EUR 0.30 (order book), EUR 0.45 (off-book)						
Vendor codes		Momentum Eurex: FXFM BBG: FXWA Index Reuters: 0#FXFM:			Value Eurex: FXFV BBG: FXRA Index Reuters: 0#FXFV:	Carry Eurex: FXFC BBG: FKSA Index Reuters: 0#FXFC:	

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Eurex Trade Entry Services (TES)

Eurex Trade Entry Services enable trading participants to enter off-book transactions in the Eurex® system. TES provide additional enhanced trade types for wholesale business such as block trading, flexible contract terms and multilateral trade registration.

Eurex Clearing Prisma

Eurex Clearing Prisma, our portfolio-based margining approach, offers numerous benefits:

- Greater accuracy and capital efficiency: cross-product scenarios facilitate a consistent method to account for portfolio correlation, diversification and margin reduction.
- Robustness: methodology to enable stable margin requirements.
- Reliable framework: consistent risk and default management process for listed and OTC products.

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