ALPHA CENTAURI
Riskpremia – Made in Germany

Low Carbon factor and the economic link to Carbon prices

Demand for ESG related strategies in form of ETF´s slowed materially over the first couple of months in 2024 according to a recent Financial Times article[1] in which the author cited a Morningstar researcher interview with ***"ESG investing appears to be going through a period of existential crisis*** *as flows, while still positive in absolute terms, dwindle as a proportion of total flows, particularly within equity"*. Deteriorating (relative) performance of many ESG indexes – and thus ETF´s – compared to standard benchmarks like MSCI World or regional counterparts seems to be the main reason according to Morningstar: *"it would be unwise to negate* ***that some investors have become concerned about the underperformance of the ESG investments in the last couple of years****".* The days in which realized outperformance of many already existing passive SRI-strategies, backtest excess returns of newly created PAB- and CTB- indexes (Paris Aligned Benchmarks/Climate Transition Benchmarks) as well as regulation fuelled massive inflows into ESG ETF´s and funds since in 2020-2023 seem to be gone – at least for now.

Exhibit 1 – 8 show the absolute and relative performance of global and regional SRI and PAB indices compared to their standard benchmarks over the last couple of years. Starting point in all cases is 2016 as some of the PAB ETF´s just started after Paris agreement.

Performance absolute

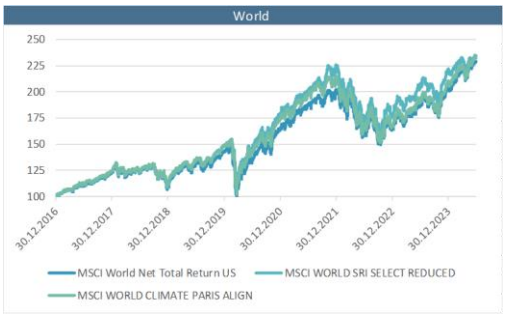


Exhibit 1: Performance MSCI World, MSCI W. SRI, MSCI W. Climate PAB 2016-2024, Source: Bloomberg, Alpha Centauri calculations

Performance relative

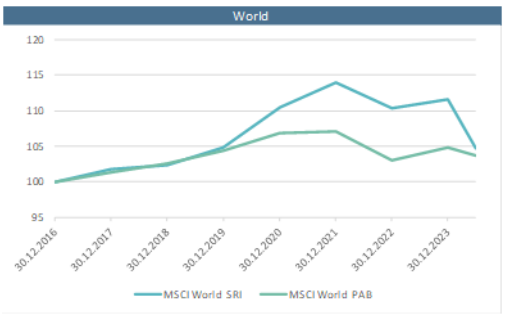


Exhibit 2: MSCI W. relative performance of MSCI W. SRI, MSCI W. Climate PAB 2016-2024, Source: Bloomberg, Alpha Centauri calculations

Exhibit 3: Performance S&P, MSCI USA SRI, S&P 500 Net Zero PAB 2016-2024, Source: Bloomberg, Alpha Centauri calculations

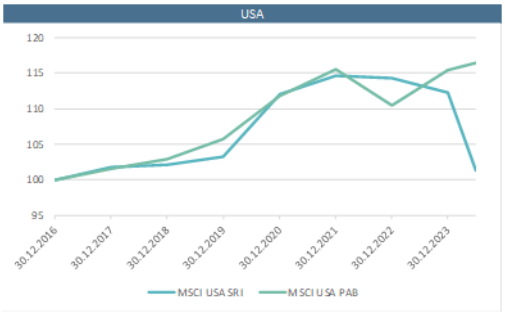


Exhibit 4: S&P 500. relative performance of MSCI USA SRI, S&P 500 Net Zero PAB 2016-2024, Source: Bloomberg, Alpha Centauri calculations

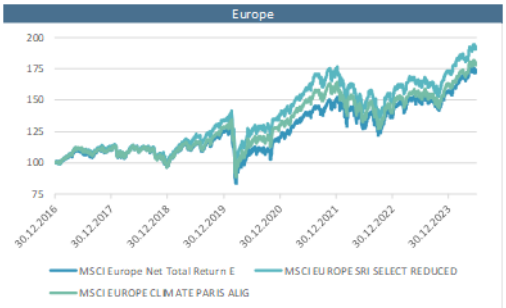


Exhibit 5: Performance MSCI Europe, MSCI E. SRI, MSCI E. Climate PAB 2016-2024, Source: Bloomberg, Alpha Centauri calculations

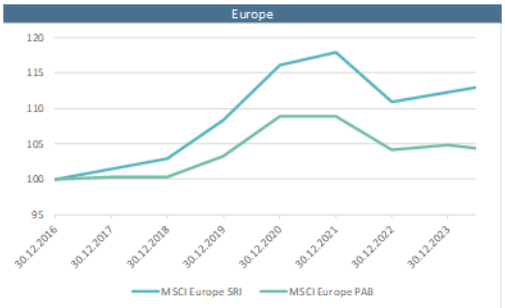


Exhibit 6: MSCI E. relative performance of MSCI E. SRI, MSCI E. Climate PAB 2016-2024, Source: Bloomberg, Alpha Centauri calculations

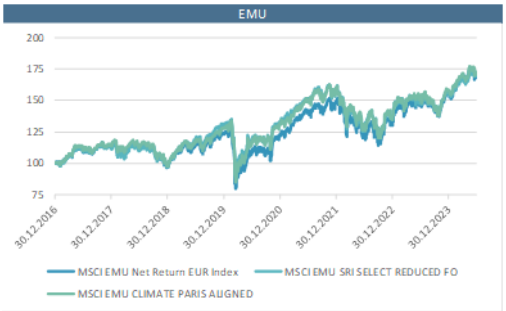


Exhibit 7: Performance MSCI EMU, MSCI EMU. SRI, MSCI EMU Climate PAB 2016-2024, Source: Bloomberg, Alpha Centauri calculations

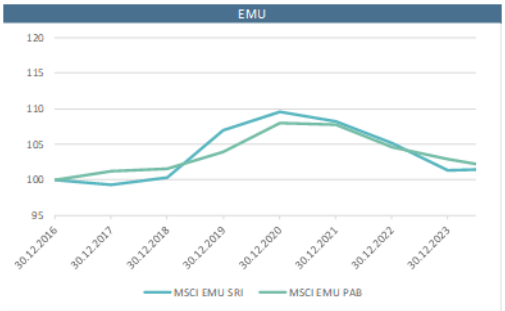


Exhibit 8: MSCI EMU. relative performance of MSCI EMU. SRI, MSCI EMU Climate PAB 2016-2024, Source: Bloomberg, Alpha Centauri calculations

The main reasons for underperformance have been large sector deviations – especially in energy and utilities – mainly due to benchmark regulation and the resulting exclusion of fossil energy sources. **Sector bets haven´t paid off in the long run economically** – i.e. according to a research report by GMO from 2017 entitled "The Race of Our Lives Revisited"[2]; they are basically unrewarded or "unpaid bets". The reason for this is quite clear as **all sectors provide goods and services for basic needs**. **Investors seem to bet on "this time is different"** even though many companies, which are active in fossil energy today, are major investors in the energy transition and will look totally different down the road. **Unfortunately, sector bets are the dominating source of active risk in many ESG- or Carbon related strategies** and in the course of a couple of years, differences can be quite material.

Performance from divestment of single sectors in different timeframes

	1989-2017	1957-2017	1925-2017
Ex Health Care	9,44%	10,12%	11,39%
Ex Consumer Staples	9,54%	10,04%	11,37%
Ex IT	9,56%	10,28%	11,51%
Ex Industrials	9,66%	10,34%	11,91%
Ex Utilities	9,77%	10,34%	11,51%
S&P 500	**9,71%**	**10,25%**	**11,53%**
Ex Energy	9,74%	10,18%	11,48%
Ex Consumer Discretionary	9,75%	10,28%	11,44%
Ex Materials	9,77%	10,65%	11,57%
Ex Telecom	9,90%	10,34%	11,51%
Ex Financials	9,94%	10,39%	11,54%
	0,50%	0,61%	0,54%
max > S&P 500	0,23%	0,40%	0,38%
min < S&P 500	-0,27%	-0,21%	-0,16%

Table 1: US S&P sector performance in different timeframes, Source GMO; "The Race of Our Lives Revisited", 2017

Even though institutional investors typically have a long-time horizon with respect to their basic strategy, active decisions follow a different playbook as many investors prefer a time horizon of three years when evaluating active **strategies. And as most investors still use standard indices within their allocation benchmark, ESG- or Climate related strategies are regarded as an active exposure –** independent from an implementation with passive instruments like ETF´s.

But **even without these sector bets, most climate related strategies would have been underperformed**, at least in Europe or EMU. The reason has been the **development of carbon prices, which are the economic link between climate transition risk and companies in the cross section**. Looking at the ICE-EUA Carbon Emission contract and Alpha Centauri´s Low Carbon Long/Short factor, developed during a research project with ISS in 2016/2017[3], both follow a similar pathway, even as the correlation from a pure mathematical point of view is quite low.

Performance of ICE EUA Carbon Emission contract & Low Carbon Long Short factor

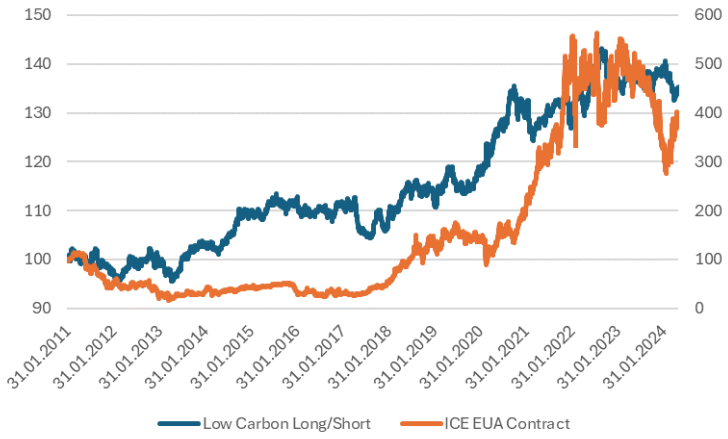


Exhibit 9: ICE EUA Carbon Emission contract 2011-2024; Source: Bloomberg; Alpha Centauri Low Carbon Long/Short factor 2011-2024; Source Alpha Centauri calculations

Correlation ICE EUA Carbon Emission contract & Low Carbon Long Short factor

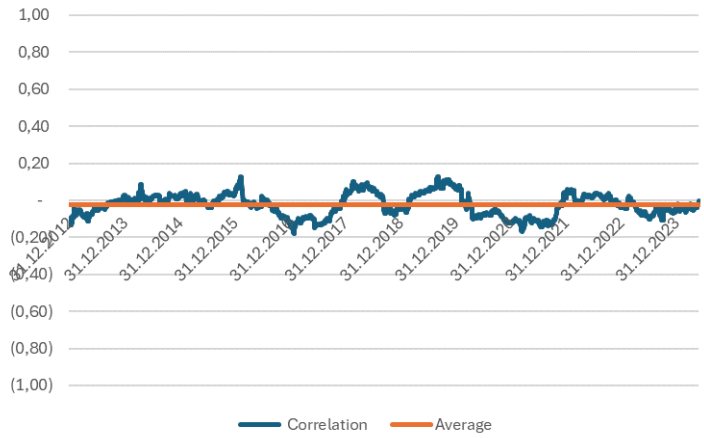


Exhibit 10 : Correlation ICE EUA Carbon Emossion contract vs.; Alpha Centauri Low Carbon Long/Short factor 2011-2024; Source Bloomberg, Alpha Centauri calculations

But one should be careful to misinterpret the low correlation as

- equity prices are driven by many more residual factors, even if exposures are purified as we have done it within the Low Carbon factor
- lead-/lag effects are quite normal due to over- and underreaction
- price impact can be highly non-linear, i.e. due to passthrough opportunities by companies

Exhibit 11 shows the **score exposure of the Low Carbon factor**, which is dominated by the Low Carbon score – a combination of two different carbon intensity metrics – and a slightly higher exposure to (low size). All other exposures are hovering around zero over time.

Score exposure of Low Carbon factor over time

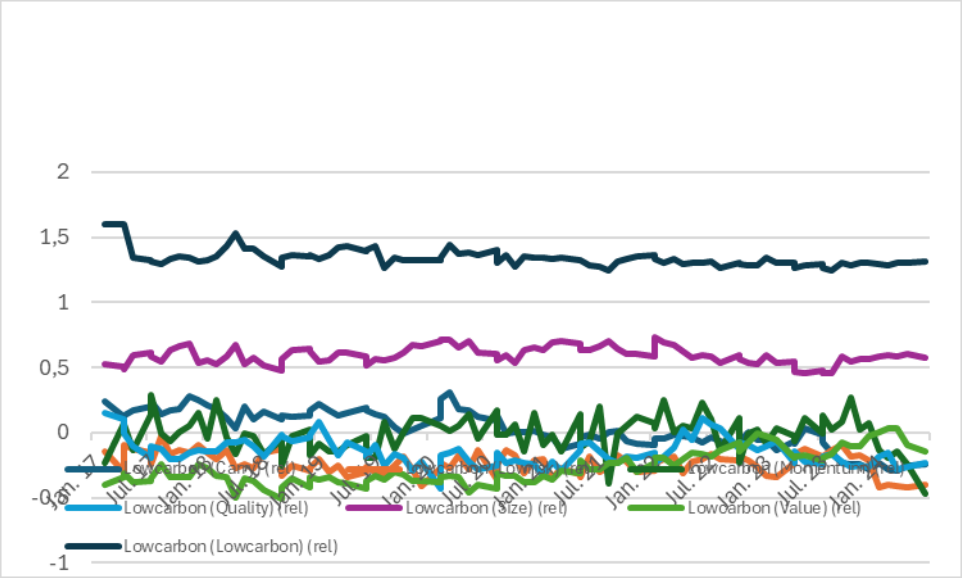


Exhibit 11: Factor score of Low Carbon Long/Short factor, Source Alpha Centauri calculations

Despite the fact, that ICE EUA Carbon contract and the Low Carbon factor seem to be uncorrelated, their **basics trends went into the same direction**. Since 2014, the ICE EUA contract exhibited three major bull markets, in which prices increased sometimes 6-fold, and three bear markets, in which prices halved on average. During the same timeframes, the Low Carbon factor exhibited price increases between 13% and 22% and drawdowns between 4% and 8%.

Especially phases of drawdowns as shown in Exhibit 12 provide a good picture as drawdowns occur either simultaneously or with a couple of months lead/lag. As Europe – or more concrete the EU – has the most advanced carbon pricing system and regulation, the results shouldn´t come as a surprise.

Drawdown of ICE EUA Carbon Emission contract & Low Carbon Long Short factor

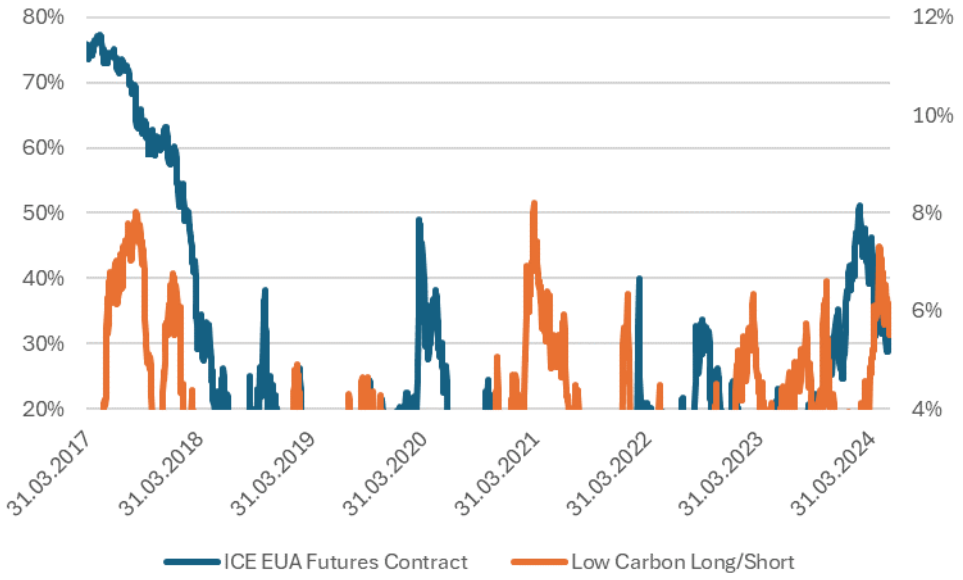


Exhibit 12: Drawdowns of ICE EUA Carbon Emission contratc & Low Carbon Long/Short factor, Source Bloomberg, Alpha Centauri calculations

From an empirical point of view, the jury is still out, **if climate change has a systematic impact on the cross section of expected returns**. Until now, the findings differ materially among researchers[4]. If any, there´s a tendency towards positive findings on equities in Europe, which seems to be quite convincing looking at carbon pricing and regulation and is in line with Alpha Centauri´s findings so far[5]. Given the differences in asset classes, universes, data and process setup, disagreement seems to be quite natural. And **even if people agree on an overall influence on asset prices, they disagree on the source of impact as some favor cash flows[6] while others are expecting pressure on cost of capital[7] and thus – discount factors**.

We already elaborated on these questions in our publications in 2022[8]. Looking at valuations, cost of capital, earnings and profitability, we found impact on both channels. The variability of cash flows and earnings might be the reason, why findings in equities don´t match with findings in fixed income, because yields and cash flows are fixed once a bond is issued. **A "greenium" in bonds acts as a discount to default risk due to lower transition- or physical risk as the put option in corporate spreads has a lower price**. **All else equal – this should result in lower expected returns.**

But beyond the question of a systematic pricing factor, it will be interesting to see, how a Low Carbon factor in equities will be described and classified, because it doesn´t represent a classical risk factor like Value or Size. As with Low Beta or Quality – **companies or stocks with lower risk are dominating high risk stocks**.

Apart from all these aspects**, the outlook for carbon prices and relative performance of "green vs. brown" stocks look more promising** – at least in Europe. Provided, that EU-politicians will stick to their already enacted pathways, the free allocation of carbon certificates will fall dramatically towards 2030 as data from Germany´s Federal Environment Agency (Umweltbundesamt) in Exhibit 13 shows.

Overall Cap and Emissions within EU Emission Trading System

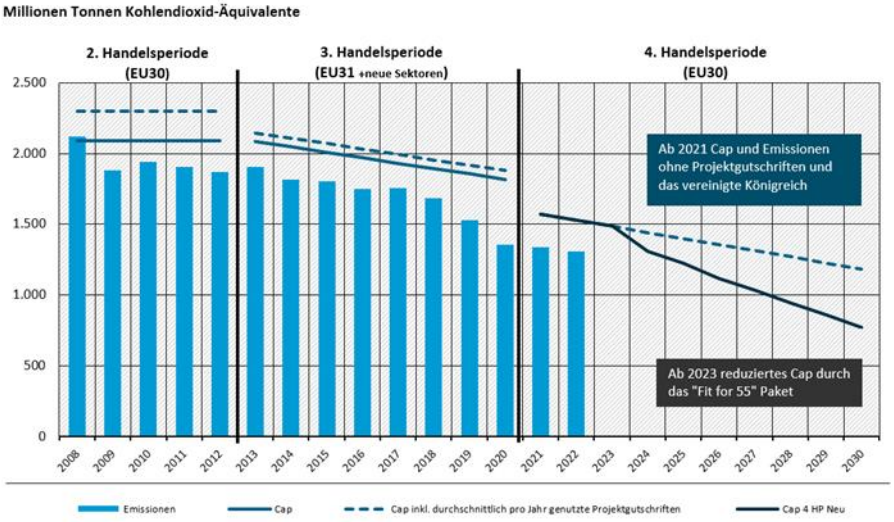


Exhibit 12: Overall Cap and Emissions in mln tons carbon equivalents within EU Emission Trading System
Source: German Environment Agency (Umweltbundesamt);2024

Companies either must **hedge their exposure**, try to **pass their costs through into selling prices** or **become more carbon efficient**. And as always in transformations**, there will be leaders and laggards in this process as well**. From our point of view, **investors should expect better times ahead for carbon- or climate related strategies.**

[1] Financial Times (2024); Flows to European ESG exchange traded funds halve in first quarter; https://www.ft.com/content/79b30bfb-f0e2-4ed2-bc2d-b8eee75905dd
[2] Grantham, J. (2017); The Race of Our Lives Revisited; GMO Research Paper; https://www.gmo.com/globalassets/articles/white-paper/2018/jg_morningstar_race-of-our-lives_8-18.pdf
[3] Alpha Centauri, ISS ESG, Prof. Bassen;(2020); The search for Climate Smart Investments; Update January 2020; https://www.alpha-centauri.com/pages/in-search-for-climate-smart-investments
[4] Goncalves, T., Dias, J., & Barros, V. (2022). Sustainabilty Performance and the Cost of Capital. Int. J. Financial Stud. 2022 (10(3)), 63. Retrieved Mai 21, 2024
[5] Alpha Centauri. (2022). ESG-Investments, Shorting und die Kapitalkostenfrage. Absolut Impact. Retrieved Mai 21, 2024, from https://www.absolut-research.de/publikationen/absolutranking/news/detail/n/esg-investments-shorting-und-die-kapitalkostenfrage/
[6] Edmans, A. (2023). Applying Economics – Not Gut Feel – To ESG. Financial Analysts Journal (79 / 4), 16-29. Retrieved Mai 21, 2024, from https://papers.ssrn.com/sol3/papers.cfm?abstract_id=4346646
[7] Armstrong, R. (2021). The ESG investing industry is dangerous. FT/Opinion Unhedged. Retrieved Mai 21, 2024, from https://www.ft.com/content/ec02fd5d-e8bd-45bd-b015-a5799ae820cf
8 Alpha Centauri (2022); Shorting and the cost of capital; iSTOXX Quarterly April 2022; https://www.alpha-centauri.com/uploads/image_asset_contentr_download_paragraph_download/file/293/20220331_iSTOXX_Europe_Update.pdf

Factor performance

European factors showed mixed relative performance during Q2/2024. Value and Size underperformed once again (Value -1,67%; Size -0,51%) without posting new cycle lows. Low Risk (-0,76%) was weaker as well. Momentum (+0,84%), Carry (+0,56%) and Quality (+0,06%) posted positive excess returns. Despite weak single factor performance, Multifactor (+1,75%) scored a positive result during Q2. Looking at the halftime results in 2024 so far, Carry is the only factor in Europe with a positive excess return.

Within US, all factors underperformed during the quarter as well as year to date. Low Risk (-2,37%) held the red lantern during the quarter. Momentum (-5,5%), Quality (-5,35%) and Size (-5,23%) are the weakest factors year to date – still a reflection of an ever more concentrated market.

Alpha Centauri Indexing - Data as of 30.06.2024

Description:

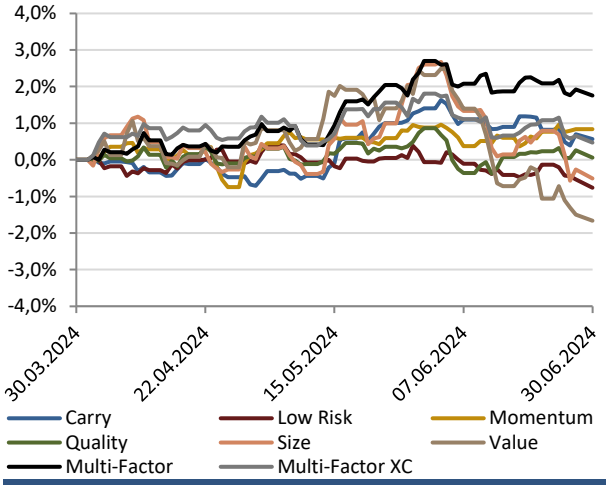
The iSTOXX Europe Single Factor index family developed by STOXX in collaboration with Alpha Centauri offers investors a unique and very innovative way to target and capture premia.
It consists of six single factors that aim to capture well-known risk premia and one multi-factor that aims at simultaneously 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**

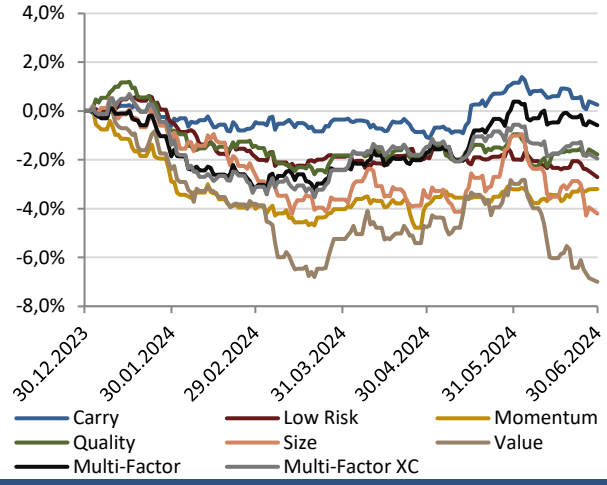
Performance and Volatility Breakdown

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	1,7%	9,1%	14,5%	100,0%	13,5%	13,2%
Low Risk	ISERRER Index	0,4%	6,2%	9,6%	93,8%	12,6%	12,3%
Momentum	ISEMFER Index	2,0%	5,7%	11,8%	75,8%	13,4%	13,2%
Quality	ISEQFER Index	1,2%	7,1%	15,5%	84,3%	13,3%	13,0%
Size	ISEZFER Index	0,6%	4,7%	9,5%	62,4%	13,3%	13,0%
Value	ISEVFER Index	-0,5%	1,9%	9,1%	17,7%	14,5%	14,2%
Multi-Factor	ISEXFER Index	2,9%	8,3%	14,5%	74,3%	12,8%	12,5%
Multi-Factor XC	ISEXFCR Index	1,6%	6,9%	11,5%	73,7%	12,9%	12,6%
Benchmark	SXXR Index	1,1%	8,9%	13,7%	91,5%	13,6%	13,3%

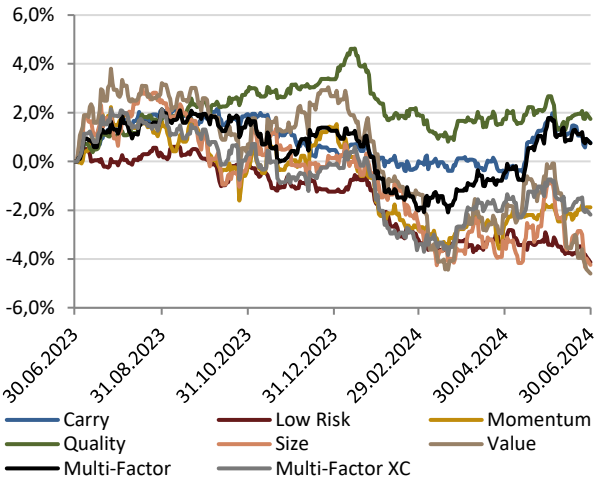
Excess Return 3 Months



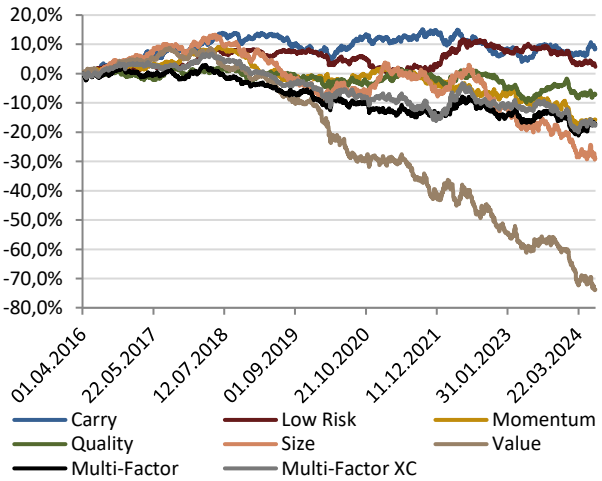
Excess Return 6 Months



Excess Return 12 Months



Excess Return since going Live (1.4.2016)



This document is provided for your information only and does not represent an offer nor a solicitation to make an offer for purchase or sale of certain products. The validity of information and recommendations is limited to the time of creation of these documents and can be subject to changes depending on the market situation and your objectives. We recommend consulting your tax consultant or legal advisor before investing.

This document contains information obtained from public sources, which we deem to be reliable. However, we cannot guarantee the accuracy of such information.

Past performance cannot be regarded as an indicator of future performance. It should also be considered that the products presented under certain circumstances are not adequate in regard to the individual investment objectives, portfolio and risk structure for the respective investor.

Legal and tax subjects that may be resulting from these documents have to be regarded as non-binding advice without exception which cannot replace a detailed counseling by your lawyer, tax consultant and/or auditor.

Please note that these documents are not directed to citizens of the United States of America and are not to be distributed in the United States of America.