Investing at Crossroads

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2024

Climate Change impacting the U.S. stock market
UBS ETFs On Track Research

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UBS ETF – S&P 500 Climate Transition ESG UCITS ETF

At a glance

- Net zero aligned strategy with EU SFDR Article 9(3) classification
- Tracks the S&P 500 Climate Transition Base ESG Index with a tilt towards best-in-class companies based on their carbon intensity, representing approximately over 70% of the entire S&P 500 universe
- The index has an easy-to-understand two-step construction process: (1) norms-based and product-based exclusions on parent index (i.e. S&P 500); (2) achieve sustainability objectives while minimizing weight deviations to parent through "Glass-box" optimization
- Aligned to EU Climate Transition Benchmark ("CTB") requirements, the index methodology includes a 30% initial carbon reduction followed by 7% year-on-year carbon reduction trajectory, making it a viable net zero aligned investment opportunity
- Sustainability improvements achieved with ESG score and Green-to-Brown ratio better than parent index
- Back-tested results demonstrate highly similar risk-return profiles between the S&P 500 and S&P 500 Climate Transition Base ESG Index, while the latter also has the potential to offer a slightly better excess return with relatively modest tracking error
- An ETF solution that has clear climate and decarbonization roadmaps in place. A more market-based approach to achieve Paris-aligned goals, i.e. net zero
- It is the first UCITS ETF tracking Climate Transition index on S&P 500
- Available in unhedged and hedged share classes

Source: S&P Dow Jones, UBS Asset Management. Data as of 31 December 2023.

Why one should consider climate risk in the investment decision?

Climate change is not just an environmental concern, but also an economic one. Today, environmental and in particularly climate topics are already influencing how individuals consume, governments regulate, businesses operate, and – most importantly for investors – how companies are valued.

It's difficult to forecast climate change trends with high confidence levels, i.e. the climate change may worsen more than expected, or, looking at model predictions, market participants may react differently. These diverging outcomes are examples of climate risks and opportunities, climate factors will impact portfolios of companies based on the financial materiality.

Not considering climate risk in the investment decision might appear the cheaper option in the short term, but over a common longer term investment horizon, inaction is in fact the more expensive choice for investors.

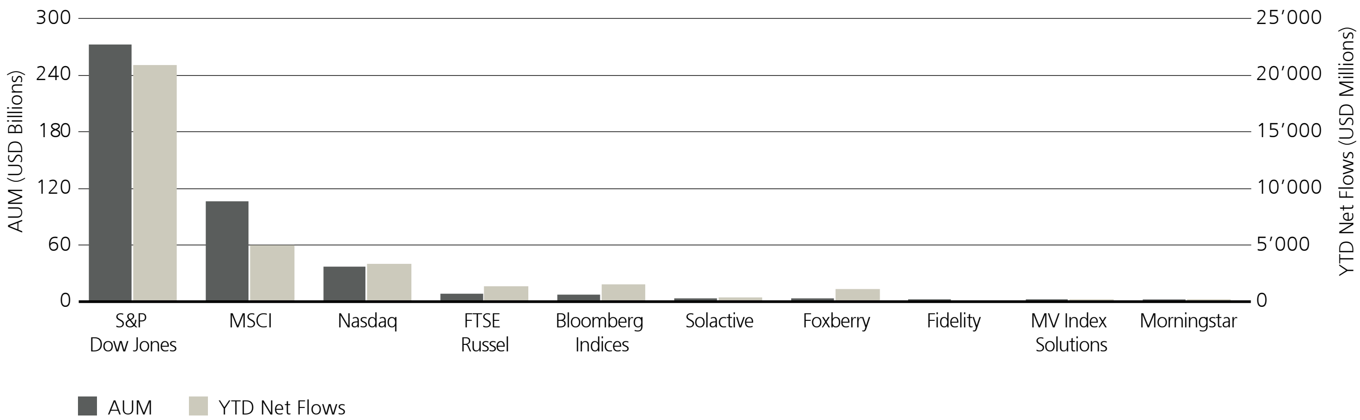
Past performance of investments whether simulated or actual is not necessarily an indicator of future results.

US exposures is an important investment segment

There is no way to invest globally without exposing to US equity. For a long time, the S&P 500 Index has been one of the best-known proxies for the U.S. stock market (Figure 1). To invest in this flagship index, passively managed exchange-traded funds (ETFs) have become popular standard building blocks. Furthermore, flagship investment universes like the S&P 500 are very well researched, making it difficult for active investors to systematically generate risk-adjusted "alpha". Passively managed portfolios tend to be more efficient implementation methods for investors seeking exposure to those well-researched flagship universe.

Figure 1: Market share for core solutions

US Equity ETF – AUM and Flows of Top 10 Benchmark Providers



Source: ETF Book, UBS Asset Management. Data as of 31 December 2023.

Embed climate transition in a representative U.S. stock market index

The S&P 500 Climate Transition Base ESG Index combines a representative US stock market investment with an innovative Net Zero aligned solution that delivers a modest tracking error versus the S&P 500 index. It achieves substantial ESG improvement and implements an effective decarbonization roadmap.

The index excludes companies involved in thermal coal, tobacco, controversial weapons, small arms, military contracting, or oil sands and those that are UNGC non-compliant and is shaped by the best-in-class selection of the highest ESG-rated stocks.

According to back-tested results, in the recent years the S&P 500 Climate Transition Base ESG Index has shown solid returns. Also, during its live-track period, this performance pattern has not changed. The ETF portfolio is intended for investors seeking a best-in-class Climate Transition ESG alternative for US large-cap equities. This exposure can now be achieved through an easy-to-access and cost-efficient portfolio building block with the UBS ETF S&P 500 Climate Transition ESG UCITS ETF.

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Creating the Net Zero Climate Transition Index

The S&P 500 Climate Transition Base ESG Index construction starts with the parent index, S&P 500. The index construction employs a comprehensive two stage process for screening companies that are compatible with the transition to a low-carbon and climate resilient economy:

First step: Define eligible ESG universe through exclusions
Exclusionary criteria are applied to the underlying 500 index constituents based on norms-based exclusions and their involvement in specific business activities. Concretely, for norms-based screens, companies are assessed for compliance with the UNGC principles' four pillars: human rights, labor, environment and anti-corruption. Companies that fail to comply with these standards are excluded from the index. The assessment is conducted based on data from Sustainalytics. The other part of norms-based exclusions pertains to companies subject to controversial activities, which include issues related to corruption, fraud and environmental disasters. The data used for the assessment is sourced from RepRisk, as specialized ESG analytics firm.

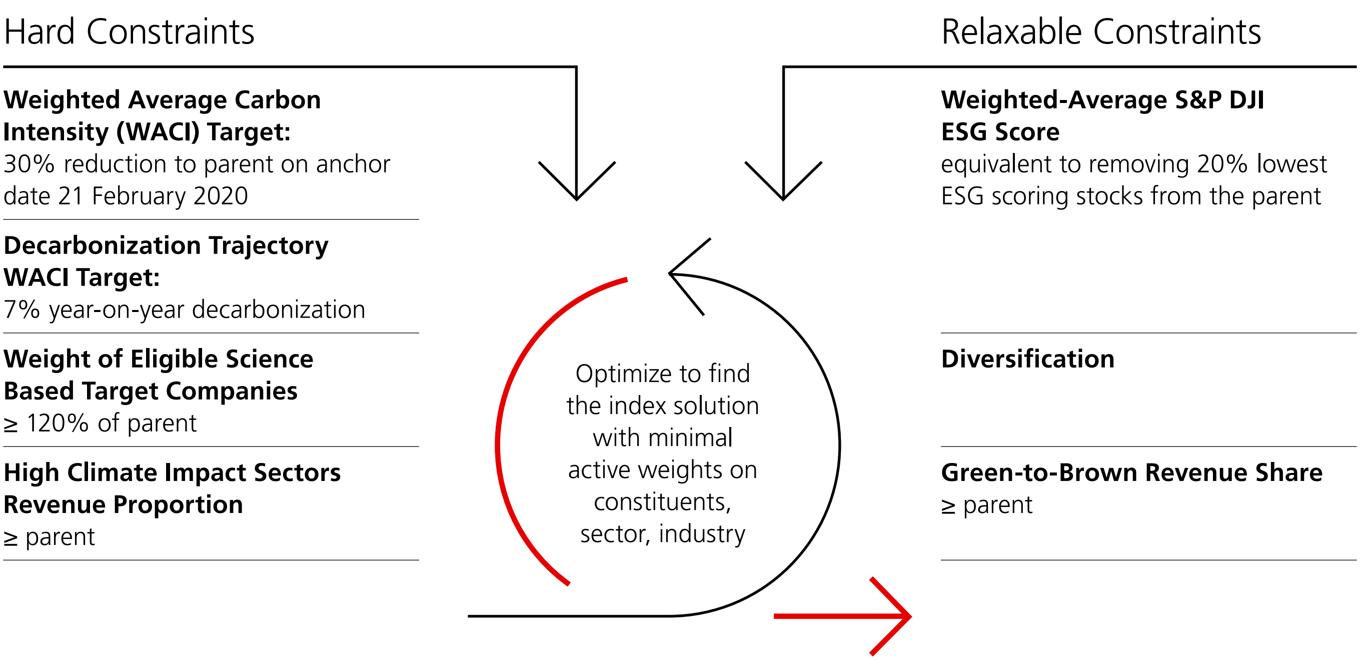
For business activity-based screens (sometimes also referred to as product-based exclusions), companies' involvements in specific business activities are assessed. The index provider defined a set of undesirable business activities namely controversial weapons, military contracting, small arms, tobacco, coal, thermal coal, and oil sands or tar sands.

From the above exclusion criteria, the essential ESG eligible universe is defined. In order to help investors manage transition risk and capture climate change opportunities, climate related factors are incorporated in the second step of the construction.

Second step: Optimization with climate-related and broader ESG constraints
The ultimate goal for the S&P 500 Climate Transition portfolio is to achieve decarbonization targets alongside with minimized active weights to the parent index through the use of optimization.

Defining constraints
There are two types of constraints for the optimization – hard constraints and relaxable constraints. (Figure 2). Hard constraints include the conditions that must be satisfied at all times in order to meet the minimum standards or objectives defined for EU Climate Transition Benchmark regulation. To highlight the key ones: at least a 30% reduction in Scope 1, 2, and 3-based carbon emission intensities versus the parent index is required, followed by a 7% year-on-year decarbonization trajectory. Relaxable constraints are soft constraints to allow the optimization process to find a solution. Each of these soft constraints are relaxed based on a defined hierarchical order.

Figure 2: Constraints for "Glass Box" Optimization



Source: S&P Dow Jones, UBS Asset Management. As of 31 December 2023

“Glass Box” optimizer
S&P employs “Glass Box” optimization to find the index solutions that not only meets the intended climate- and ESG-related objectives, but at the same time also minimizes weight deviations from the parent index in respect of constituents, sector and industry. Glass Box optimization can bring different benefits to portfolio construction:

Transparent relationship between sustainability data and index weights. When looking to minimize the tracking error, Glass Box optimization focuses on integrating sustainability factors rather than evaluating the exposure to different sources of systematic risk, which is the approach of traditional risk model-based optimization. This approach increases transparency because exposure shifts towards companies that could better satisfy the defined sustainability factors, i.e. Low carbon intensity companies and high ESG scoring. In other words, it ensures that sustainability characteristics are the key drivers for the resulting active weights.

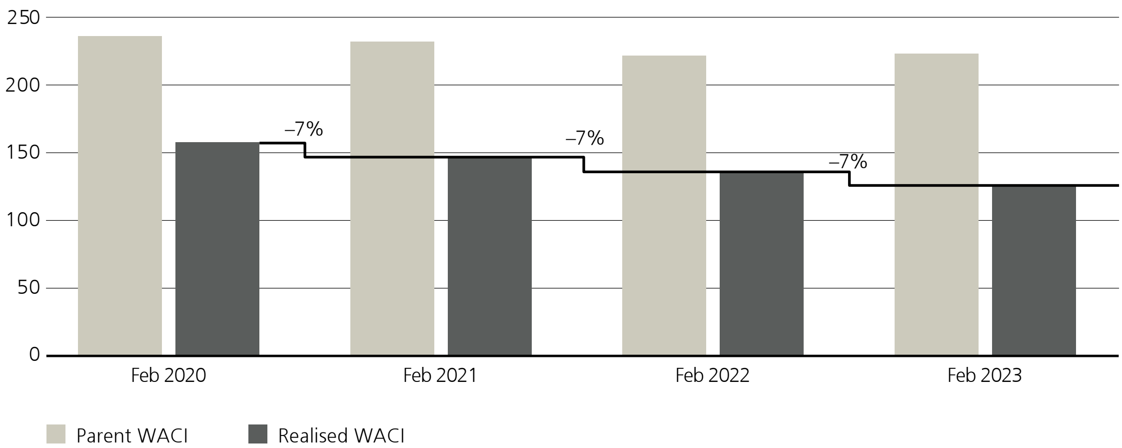
Provides naturally high liquidity and low turnover. Since the active weights are minimized and most closely correspond to a float-adjusted market capitalization weighted index, it naturally benefits from the high liquidity, capacity and low turnover.

Minimized tracking error. Through minimizing and balancing the active stock and sector deviations, the tracking error could be controlled and minimized effectively.

A closer look at the benefits of this climate transition solution

The S&P 500 Climate Transition Base ESG Index delivers a Net Zero aligned solution compatible with a 1.5°C global warming climate scenario. The index methodology includes a 30% initial carbon reduction at anchor date 21 February 2020 reduction followed by 7% year by year carbon reduction trajectory, all based on carbon emissions scope 1, 2 and 3 (Figure 3).

Figure 3: Net zero aligned carbon reduction pathway



Source: S&P Dow Jones, UBS Asset Management. Data as of 31 December 2023.

Low active share delivers the foundation for a low tracking error
The below (Figure 4) summarizes the top 10 constituent weights of the S&P 500 Climate Transition Base ESG Index compared to the S&P 500. We can observe the active constituent weights are fairly limited, most of them are way below 1%, except for overweight of Nvidia Corp. Similar pattern can be seen across the sectors, where the weights of the S&P 500 Climate Transition Base ESG Index are closely aligned with that of S&P 500 for all eligible sectors (Figure 5).

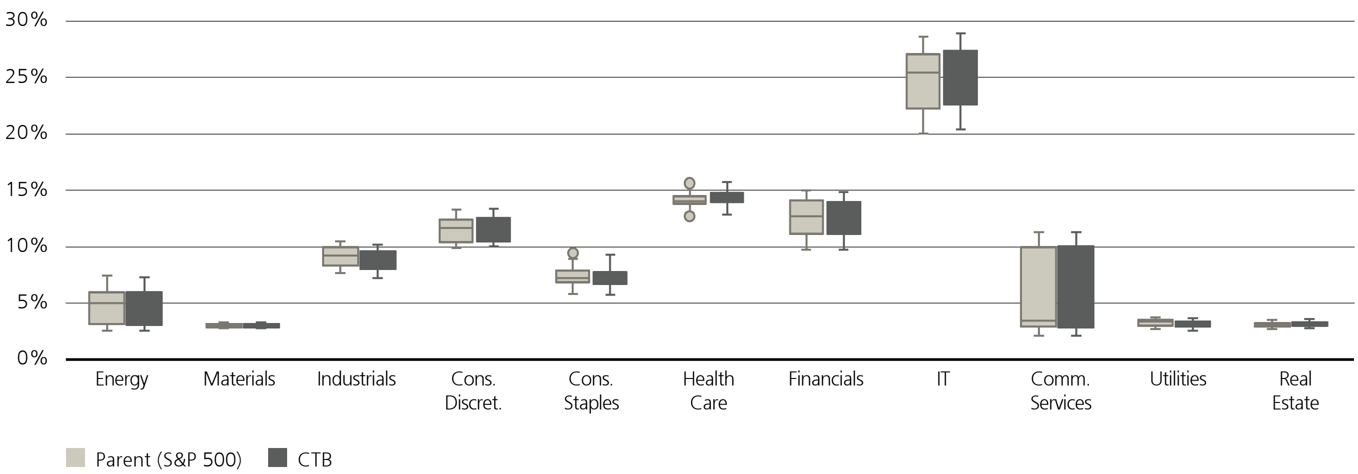
The minimized deviations have paved the way for effectively controlled tracking errors. As shown in the results (Figure 7), the tracking error is 1.14 bps since inception, which is fairly low.

Figure 4: Top ten holdings

#	Company	Sector	S&P 500 CTB ESG Index weight	S&P 500 weight	Active weight
1	Microsoft Corp	Information Technology	7.08%	6.98%	0.10%
2	Apple Inc.	Information Technology	7.06%	7.03%	0.03%
3	Nvidia Corp	Information Technology	5.21%	3.06%	2.15%
4	Amazon.com Inc	Consumer Discretionary	3.66%	3.45%	0.21%
5	Alphabet Inc A	Communication Services	2.76%	2.06%	0.70%
6	Alphabet Inc C	Communication Services	2.37%	1.75%	0.62%
7	Tesla, Inc	Consumer Discretionary	1.94%	1.72%	0.22%
8	Visa Inc A	Financials	1.80%	1.04%	0.76%
9	United Health Group	Health Care	1.64%	1.22%	0.59%
10	Eli Lilly & Co	Health Care	1.61%	1.16%	-0.07%

Source: S&P Dow Jones, UBS Asset Management. Data as of 31 December 2023.

Figure 5: Sector weights Parent vs S&P 500 Net Zero CTB



Source: S&P Dow Jones, UBS Asset Management. Data as of 31 December 2023.

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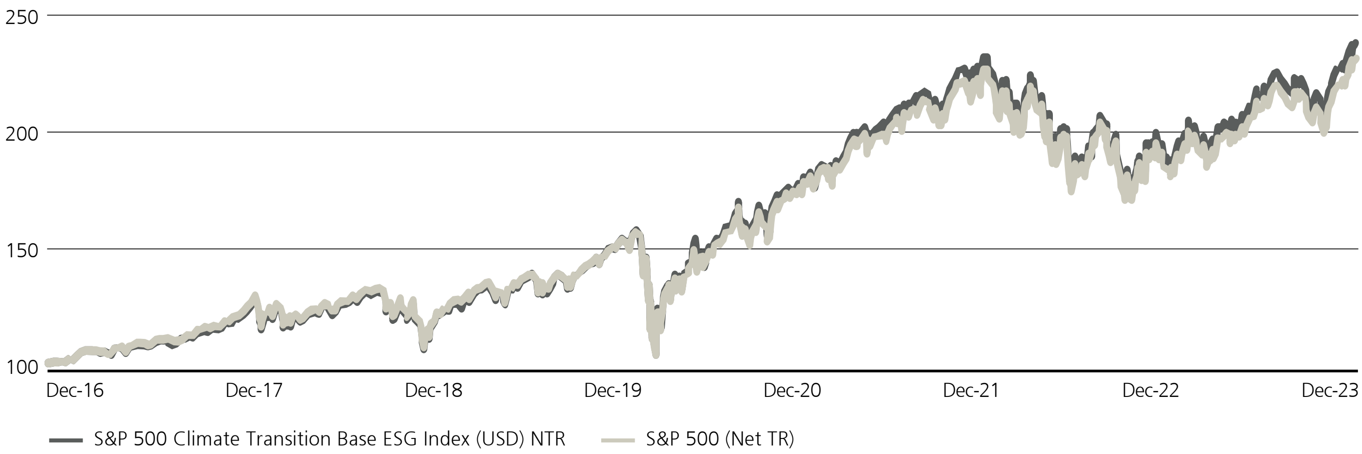
Potential to beat broad-based S&P 500

From a performance perspective we can see that S&P 500 Climate Transition Base ESG index had a slightly better performance compared to the parent S&P 500 over the past 8 years (Figure 6). It is interesting to note that those excess return have been achieved with a very similar volatility to that of S&P 500 (Figure 7), implying a decent overall improvement in the risk-return profile S&P 500 Climate Transition Base ESG index.

This finding is further confirmed when looking at metrics such as the information ratios, with an average level at 0.5 (Figure 7).

Overall, the resulting S&P 500 Climate Transition Base ESG index shows a very high correlation to its parent, the S&P 500. There is a potential to generate excess returns alongside fairly low tracking errors.

Figure 6: Index Levels – Net Total Return (USD)



Source: S&P Dow Jones, UBS Asset Management. Data as of 31 December 2023.

Figure 7: Performance metrics of Parent vs S&P 500 Climate Transition Base ESG Index

Horizon	S&P 500	S&P 500 Net Zero CTB ESG	S&P 500 Net Zero CTB ESG vs S&P 500
	Annualized Return		Excess Return
1y	2.89%	3.68%	0.79%
3y	13.14%	13.72%	0.58%
5y	11.00%	11.75%	0.75%
Inception	12.11%	12.54%	0.43%
	Annualized Volatility		Tracking Error
1y	20.93%	21.26%	1.02%
3y	18.84%	19.09%	1.13%
5y	21.80%	22.23%	1.24%
Inception	19.90%	20.27%	1.14%
	Risk Adjusted Return		Information Ratio
1y	0.14	0.17	0.78
3y	0.7	0.72	0.51
5y	0.5	0.53	0.61
Inception	0.61	0.62	0.37

Source: S&P Dow Jones, UBS Asset Management. Data as of 31 December 2023.

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Sustainability improvement: ESG factors
The S&P 500 Climate Transition Base ESG Index fulfilled the decarbonization targets. It also demonstrated sustainability improvements versus parent S&P 500 index as reflected by various ESG metrics (Figure 8). Overall, the ESG score and Green-to-brown revenue share are better than S&P 500.

Figure 8: Sustainability improvements

+9.7%
DJI ESG Score

+22%
Green-to-Brown Revenue Share

–63%
Weighted average carbon intensity (Metric Tons CO_2e per USD1M invested)

–100%
Controversial Weapons & Tobacco

–100%
UN Global Compact non-compliant companies

Source: S&P Dow Jones, UBS Asset Management. Improvements against S&P 500. Data as of December 2023.

In a Nutshell: S&P 500 Climate Transition ESG UCITS ETF

In summary, the S&P 500 Climate Transition ESG UCITS ETF allows investors to access a portfolio of US exposures with a climate overlay. They can enjoy risk-return characteristics analogous to the broad-based S&P 500, fairly low tracking errors with potential gains compared to S&P 500.

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