Index Rules & Methodology | June 21, 2022

Introducing Corporate Climate Indices

Preston Peacock, Senior Director
ICE Data Services | ICE Data Indices

ICE Index Contact:
New York: +770 999 4501
London: +44 203 948 6501
Email: *ICEIndices@ice.com*

Introducing the Corporate Climate Indices

In response to growing demand for benchmarks that take account of climate factors, ICE Data Indices, LLC (IDI) has added a new set of corporate bond climate indices to its ESG Bond Index Family. This new series includes six climate index variants for each of the 23 standard corporate bond Parent Indices set forth in Appendix 1 of this document ("Parent Indices") – 138 indices in total. This list will grow over time in response to investor requirements.

Six alternative methods for achieving net zero carbon emissions

Each of the six variants is designed to achieve a net zero carbon emissions level by 2050. Two of the variants meet the requirements to be labelled as Paris-Aligned Benchmarks and a further two meet the requirements to be labelled as Climate Transition Benchmarks, under the European Union (EU) and United Kingdom (UK) Benchmarks Regulation ("BMR"). Two other variants follow similar methodology but use a revenue-based carbon intensity metric:

- Two Paris-Aligned variants:
  - Carbon reduction measured in terms of absolute carbon emissions
  - Carbon reduction measured in terms of EVIC-based carbon intensity
- Two Climate Transition variants:
  - Carbon reduction measured in terms of absolute carbon emissions
  - Carbon reduction measured in terms of EVIC-based carbon intensity
- Two Net Zero variants:
  - Both measure carbon reduction in terms of revenue-based carbon intensity
  - One includes additional exclusions for issuers with certain fossil fuel business involvements

Carbon reductions achieved without significant changes in risk structure

Using the ICE BofA Euro Corporate Index as an example, though the exclusionary filters can remove as much as a third of the Parent Index constituents, key risk measures such as duration, ratings distributions and sector allocations are not significantly changed relative to the Parent Index.

Climate indices have closely tracked their Parent

Given the similar risk profiles, performance of the Euro Corporate climate indices in 2021 and 2022 has been relatively close to, but slightly higher than, the Parent Index.

Introducing Corporate Climate Indices

Overview

The UN's Intergovernmental Panel on Climate Change (IPCC) has reported that the earth is warmer, on average, by just over 1°C compared to pre-industrial levels[1]. Without immediate and dramatic reductions in greenhouse gas (GHG) emissions the IPCC estimates that chances of limiting global warming to 1.5°C to 2.0°C are increasingly beyond reach. In the opinion of the IPCC, limiting global warming to 1.5°C, or significantly below 2°C, is the best chance to avoid the worst consequences of climate change. In response, global and regional bodies have established aggressive targets for GHG reduction. With the Paris Agreement[2] 192 countries plus the European Union (EU) signed a legally binding treaty to work towards limiting global warming by reducing GHG emissions. The EU and UK have added to those commitments with additional goals aiming to achieve net zero carbon emissions by 2050[3].

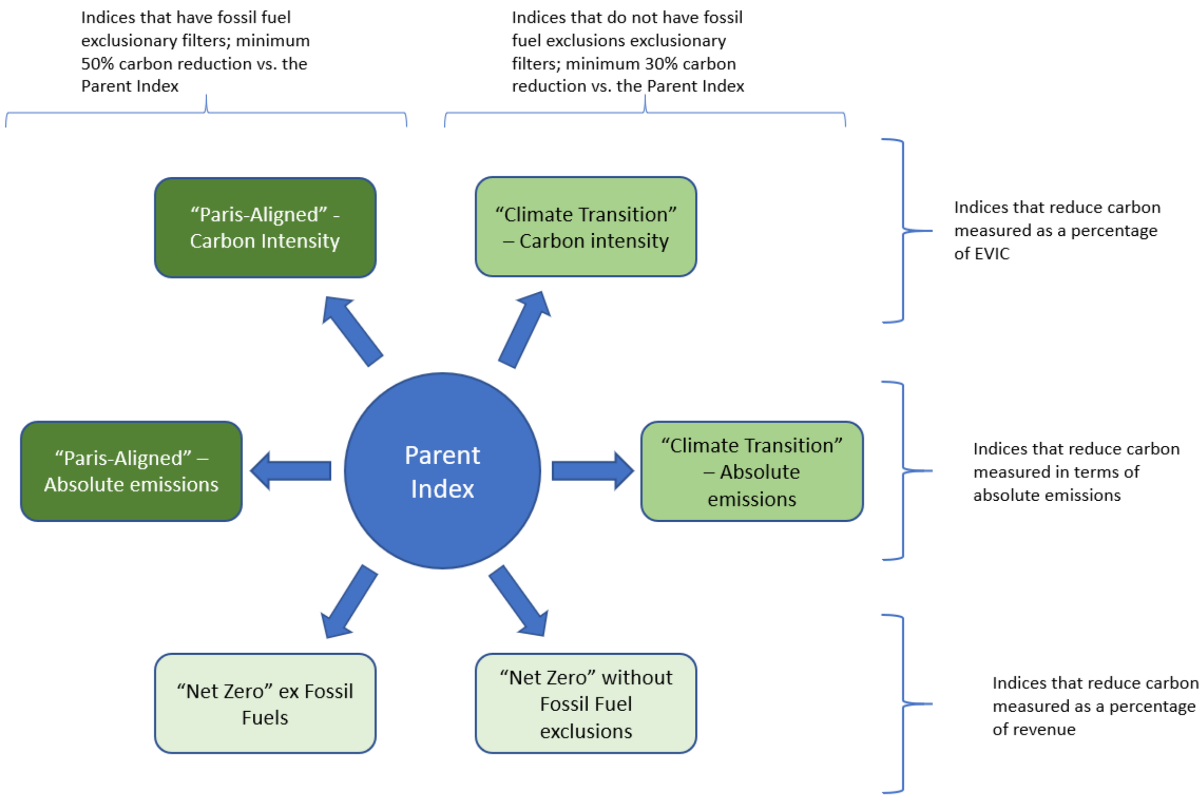
The realization of the importance of controlling GHG emissions, and the financial risks to companies that do not, has contributed to a flow of assets into new funds and portfolios that are benchmarked to, or replicate, indices that achieve measurable reductions in the aggregate carbon footprint of their constituents. Similarly, many long-established funds and portfolios have begun switching their standard benchmarks to new indices that include carbon reduction criteria as part of their objectives – a trend that is expected to gain momentum over the next few years. In response to this trend, ICE has launched a new series of Corporate bond indices that reduce the aggregate carbon exposure of their constituencies on a trajectory toward net zero by the end of 2050. The new series includes variants that meet requirements for Paris-Aligned and Climate Transition labeling under BMR.

As with our previously launched Environmental, Social and Governance ("ESG") Bond Indices, the new climate indices start with an existing "standard" ICE Corporate bond index (the "Parent Index"). For each Parent Index, there are six climate variants designed to meet a varied set of requirements common to many global investors (Exhibit A). (See Appendix 1 for a full list of Parent/Climate Indices.) All six of the Corporate climate index variants have certain common key elements but specific targets and/or exclusionary filters differ from one to the next.

- **Carbon targets:** All six variants seek to achieve net zero carbon emissions by 2050. The two "Paris Aligned" labeled indices, and the Net Zero with Fossil Fuels exclusions index, get a jump start by reducing the carbon level relative to the Parent Index by 50% on their inception dates and maintaining that reduction thereafter. Meanwhile, the two "Climate Transition" labeled indices, and the Net Zero index, only achieve a 30% reduction.
- **Carbon measurement standard:** BMR requires that Paris-Aligned and Climate Transition labeled indices measure carbon reduction in terms of (i) absolute emissions (expressed in metric tonnes of CO_2 equivalent), or (ii) carbon intensity, where intensity is defined as carbon emissions divided by the company's enterprise value including cash ("EVIC"). Consequently, IDI provides an absolute and intensity variant for each. In addition, for IDI's Net Zero indices, IDI uses an alternate measure of intensity that divides a company's absolute emissions by its revenues. (Note: carbon intensity levels are adjusted by an "inflation factor" that adjusts for overall changes in the EVIC/revenue levels of the aggregate index universe.)
- **Exclusionary filters:** All six variants include the same set of basic ESG exclusionary filters. However, three of the variants – the two Paris-Aligned indices and the Net Zero with fossil fuel exclusions index – also include an additional set of exclusionary filters targeting certain fossil fuel related business involvements.

[1] https://www.ipcc.ch/report/sixth-assessment-report-working-group-3/
[2] Paris Agreement (europa.eu)
[3] https://ec.europa.eu/info/strategy/priorities-2019-2024/european-green-deal_en

Exhibit A: Corporate Climate index variants produced for each Corporate Parent Index



Screening Criteria

Parent Index constituents are screened to remove issuers with certain ESG and/or climate-related business involvements. Most of these filters are common to all six variants. The highest-level common filters require that Sustainalytics cover the issuer for both an Overall ESG Risk Rating as well as the relevant carbon metric (i.e., absolute emissions, EVIC-based carbon intensity or revenue-based carbon intensity). Additional common filters are designed to meet the minimum requirements for Climate Transition labeled Indices under BMR. They include filters on companies with involvement in controversial weapons and tobacco, or that are not compliant with the UN Global Compact[4], as well a range of filters for any issuers with significant risks related to a diverse range of environmental and social factors. Beyond these basic exclusions that are applied to all the indices the two Paris-Aligned indices, and the Net Zero 2050 Index excluding Fossil Fuels, have additional exclusions related to fossil fuel business involvements. Details of all exclusionary filters are in the table below.

[4] https://www.unglobalcompact.org/what-is-gc/mission/principles

Exclusionary filters

Sustainalytics data field	Criteria	Applicable Indices
Overall ESG Risk Rating (181110112399)	exclude issuers that are not covered	All
Carbon - Total Emissions Scope 1,2&3 (191111202799), or EVIC Intensity score-USD (191113172799), or Carbon - Carbon Intensity 1,2 &3 (191111222799)	exclude issuers that are not covered	All
Overall Global Compact Compliance Status (231112111799)	exclude "Non-Compliant"	All
Controversial Weapons-Evidence of Activity (211010113499)	exclude "Yes"	All
Tobacco Products Most significant involvement-Category & Level of	exclude TP1, TP2	All
Access to Basic Services-Answer Category (131111112599)	exclude High (4) and Severe (5)	All
Accounting and Taxation-Answer Category (131211112599)	exclude High (4) and Severe (5)	All
Animal Welfare - SC-Answer Category (131312112599)	exclude High (4) and Severe (5)	All
Animal Welfare-Answer Category (131311112599)	exclude High (4) and Severe (5)	All
Anti-Competitive Practices-Answer Category (131411112599)	exclude High (4) and Severe (5)	All
Bribery and Corruption - SC-Answer Category (131512112599)	exclude High (4) and Severe (5)	All
Bribery and Corruption-Answer Category (131511112599)	exclude High (4) and Severe (5)	All
Business Ethics - SC-Answer Category (131612112599)	exclude High (4) and Severe (5)	All
Business Ethics-Answer Category (131611112599)	exclude High (4) and Severe (5)	All
Community Relations-Answer Category (131811112599)	exclude High (4) and Severe (5)	All
Community Relations - SC-Answer Category (131812112599)	exclude High (4) and Severe (5)	All
Corporate Governance-Answer Category (132011112599)	exclude High (4) and Severe (5)	All
Data Privacy and Security-Answer Category (133311112599)	exclude High (4) and Severe (5)	All
Employees - Human Rights - SC-Answer Category (134112112599)	exclude High (4) and Severe (5)	All
Employees - Human Rights-Answer Category (134111112599)	exclude High (4) and Severe (5)	All
Intellectual Property-Answer Category (132611112599)	exclude High (4) and Severe (5)	All
Labour Relations - SC-Answer Category (132712112599)	exclude High (4) and Severe (5)	All
Labour Relations-Answer Category (132711112599)	exclude High (4) and Severe (5)	All
Lobbying and Public Policy-Answer Category (132911112599)	exclude High (4) and Severe (5)	All
Marketing Practices-Answer Category (133011112599)	exclude High (4) and Severe (5)	All
Media Ethics-Answer Category (133111112599)	exclude High (4) and Severe (5)	All
Occupational Health and Safety - SC-Answer Category (133212112599)	exclude High (4) and Severe (5)	All
Occupational Health and Safety-Answer Category (133211112599)	exclude High (4) and Severe (5)	All
Quality and Safety-Answer Category (133411112599)	exclude High (4) and Severe (5)	All
Resilience-Answer Category (133511112599)	exclude High (4) and Severe (5)	All
Sanctions-Answer Category (133611112599)	exclude High (4) and Severe (5)	All
Social impact of products-Answer Category (133711112599)	exclude High (4) and Severe (5)	All
Society - Human Rights - SC-Answer Category (134212112599)	exclude High (4) and Severe (5)	All
Society - Human Rights-Answer Category (134211112599)	exclude High (4) and Severe (5)	All
Weapons-Answer Category (133911112599)	exclude High (4) and Severe (5)	All
Land Use and Biodiversity-Answer category (132811112599)	exclude High (4) and Severe (5)	All
Land Use and Biodiversity - SC-Answer category (132812112599)	exclude High (4) and Severe (5)	All
Water Use-Answer category (133811112599)	exclude High (4) and Severe (5)	All
Water Use - SC-Answer category (133812112599)	exclude High (4) and Severe (5)	All
Emissions, Effluents and Waste-Answer category (132111112599)	exclude High (4) and Severe (5)	All
Emissions, Effluents and Waste - SC-Answer category (132112112599)	exclude High (4) and Severe (5)	All
Energy Use and GHG Emissions-Answer category (132211112599)	exclude High (4) and Severe (5)	All
Energy Use and GHG Emissions - SC-Answer category	exclude High (4) and Severe (5)	All
Environmental Impact of Products-Answer category (132311112599)	exclude High (4) and Severe (5)	All
Carbon Impact of Products-Answer category (134011112599)	exclude High (4) and Severe (5)	All

Sustainalytics data field	Criteria	Applicable Indices
Thermal Coal Extraction-Revenue Percentage (171025111199)	exclude >=1%	Paris-Aligned; Net Zero 2050 Excluding Fossil Fuels
Thermal Coal Power Generation-Revenue Percentage (171025141199)	exclude if combined revenue percentage is >= 50%	Paris-Aligned; Net Zero 2050 Excluding Fossil Fuels
Oil & Gas Generation-Revenue Level of Involvement Id (173316171899)		
Oil & Gas Production-Level of Involvement Id (173311112999)	exclude 10%-24.99% (3), 25%-49.99% (4) and 50%-100% (5)	Paris-Aligned; Net Zero 2050 Excluding Fossil Fuels
Oil & Gas Supporting Products/Services-Level of Involvement Id (173313112999)	exclude 10%-24.99% (3), 25%-49.99% (4) and 50%-100% (5)	Paris-Aligned; Net Zero 2050 Excluding Fossil Fuels

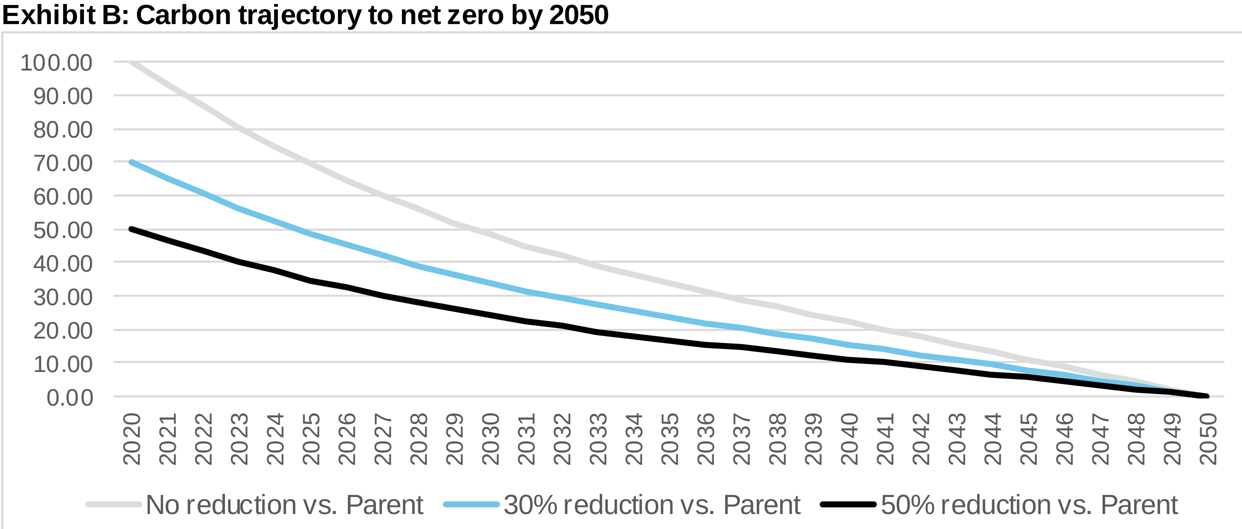
Setting target carbon levels

At each monthly rebalancing a target is established for the climate index carbon level, using the relevant carbon measurement standard for the index. Targets for all six variants meet the following criteria:

- Minimum 7% annualized rate of reduction versus the prior rebalancing
- Reach a zero carbon emissions level in 2050 (Note: a 7% annualized rate of reduction will get close to but never actually reach zero.)

In addition, the Paris-Aligned and Net Zero excluding Fossil Fuels variants must always be at least 50% below the carbon level of their Parent Indices. Likewise, the Climate Transition and Net Zero variants must always be at least 30% below the carbon level of their Parent Indices. Exhibit B illustrates the two trajectories for a hypothetical Parent Index that a has an assumed carbon level of 100 on the 12/31/2020 inception date of its climate variants. Also included for comparative purposes is a base line trajectory that does not impose a minimum reduction relative to the Parent carbon level.

Exhibit B: Carbon trajectory to net zero by 2050



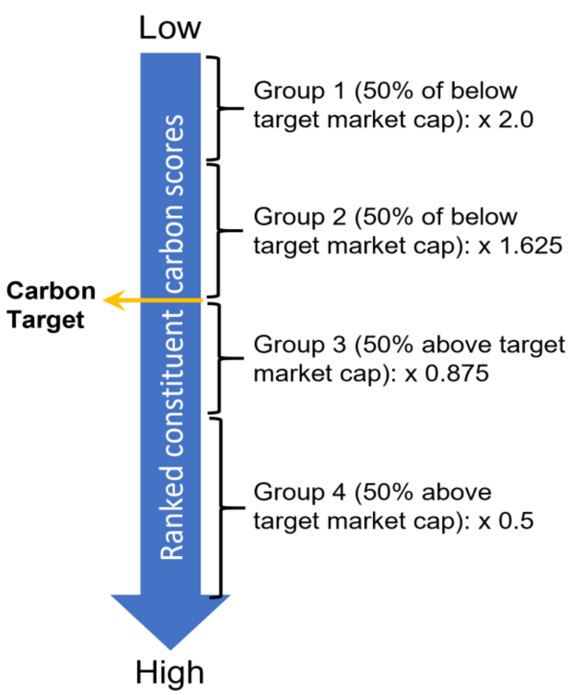
Achieving the carbon target

The index carbon reduction is met by applying weighting tilt factors to constituents ranked based on their relevant carbon metrics (i.e., absolute emissions, EVIC-based carbon intensity, revenue-based carbon intensity). Index qualifying issuers are first segmented by those over and those under the current month Carbon Target. Those two groups are further split into two sub-groups containing the highest and lowest ranked issuers that comprising half of the segment market capitalization. The following tilt factors are then assigned to the market capitalizations of constituents within each of the four groups:

- Group 1: 2.0 x actual market cap
- Group 2: 1.625 x actual market cap
- Group 3: 0.875 x actual market cap
- Group 4: 0.5 x actual market cap

If necessary, the above factors are increased/decreased in 0.05 increments until the Carbon Target is reached, subject to not breaching a 0.1 and 2.5 floor/ceiling.

Exhibit C: Carbon tilting factors

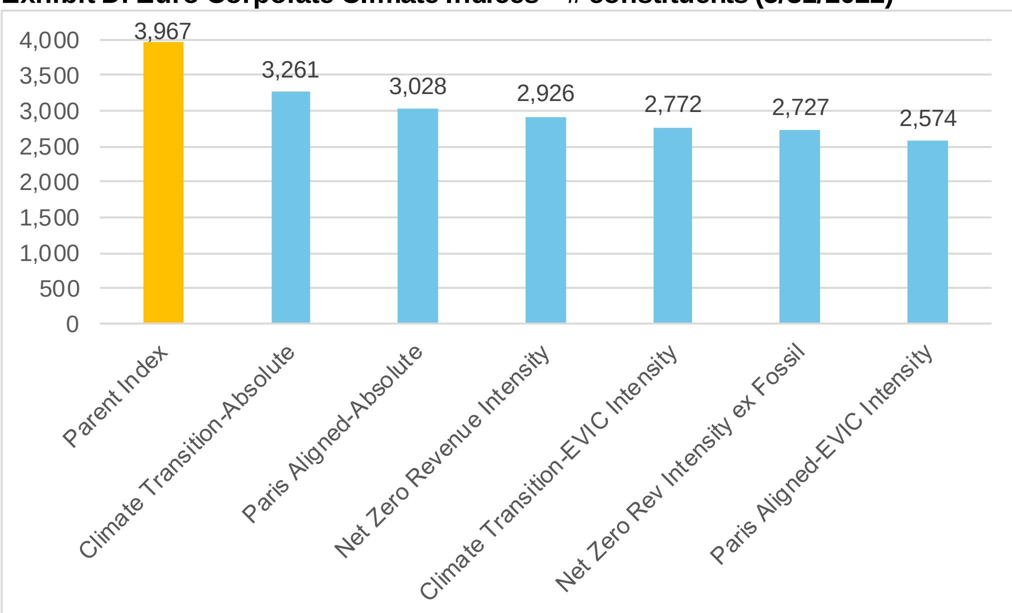


Impact of alternate approaches on index structure

It is reasonable to question the degree to which various exclusionary filters, and modifications applied to achieve the carbon reduction targets, affect the risk structure of the Parent Index starting point. This is of particular relevance to an established fund or portfolio that is contemplating a change from a standard index to one that overlays these types of climate criteria. A good place to start answering that question is to look at how the filters affect bond counts across the six variants. As an example, IDI compared the constituent counts of the ICE BofA Euro Corporate Index (ER00) with its six climate variants (Exhibit D). This comparison is purely indicative, and the results may differ for other Parent Indices or measurement dates.

In this particular case, the largest gap is between the Parent Index and the Paris Aligned variant based on EVIC carbon intensity, which has 35% fewer constituents. The reasons are twofold: (i) the Paris Aligned indices include the additional fossil fuel filters, which trigger the removal of almost 200 constituents, and (ii) Sustainalytics coverage of intensity metrics is lower than its coverage of absolute carbon emission, with EVIC-based intensity coverage coming slightly lower than revenue-based intensity coverage. The impact of the latter is highlighted by the fact that the Paris Aligned variant based on absolute emissions has the second highest constituent count among the six variants, with 454 more constituents than the Paris Aligned variant using EVIC-based carbon intensity. The Climate Transition variant using absolute emissions and without the fossil fuel exclusion, has the highest constituent count of the six. For additional information on the carbon metrics used in the Corporate Climate Indices please see the “ESG and climate-related methodologies” section of the ICE Bond Index Methodologies document, which can be found under the Methodologies>Fixed Income>Bond Index Methodologies menu on the ICE Index Platform (https://indices.theice.com).

Exhibit D: Euro Corporate Climate Indices – # constituents (5/31/2022)



The removal of up to a third of the Parent Index constituents would seem to imply that climate index variants have significantly different risk exposures than those of their Parent Indices. However, a comparison of the key risk attributes of the ICE BofA Euro Corporate Index (ER00) and its climate variants suggests otherwise. First, durations of the Parent Index and its six climate variants are all within about a tenth of a year of each other, with the two Climate Transition Indices and the Paris Aligned EVIC-based Intensity Index all within less than 0.05 years of the Parent Index. The largest difference is the Net Zero variant with Fossil Fuel exclusions which is 0.11 years shorter than the Parent (4.91 years vs. 5.02 years).

Second, IDI compared the rating distributions of the six climate variants versus the Euro Corporate Parent (Exhibit E). Most of the rating allocations are well inside of +/-1% of the Parent Index allocation. Notably, the AA3 bucket for all six variants is a little more than 1% shy of the Parent Index allocation. On the flip side, the BBB1 allocations are all 1% of more than the Parent Index allocation, with the Climate Transition variant using EVIC-based carbon intensity a little more than 2% above the Parent, and the Paris Aligned variant using EVIC-based carbon intensity almost 3% higher.

Sector allocation variances are a little higher than the rating variances, though here too the majority are inside +/-1% versus the Parent Index (Exhibit F). The notable outliers mostly fall in the Energy sector, where the three variants that have fossil fuel exclusions are roughly 5% shy of the Parent Index allocation to that sector. The largest offsets to those underweight positions are found in the Bank, Real Estate and Telecom sectors.

Exhibit E: Euro Corporate Climate Indices – rating over/under weight vs Parent Index (ER00)

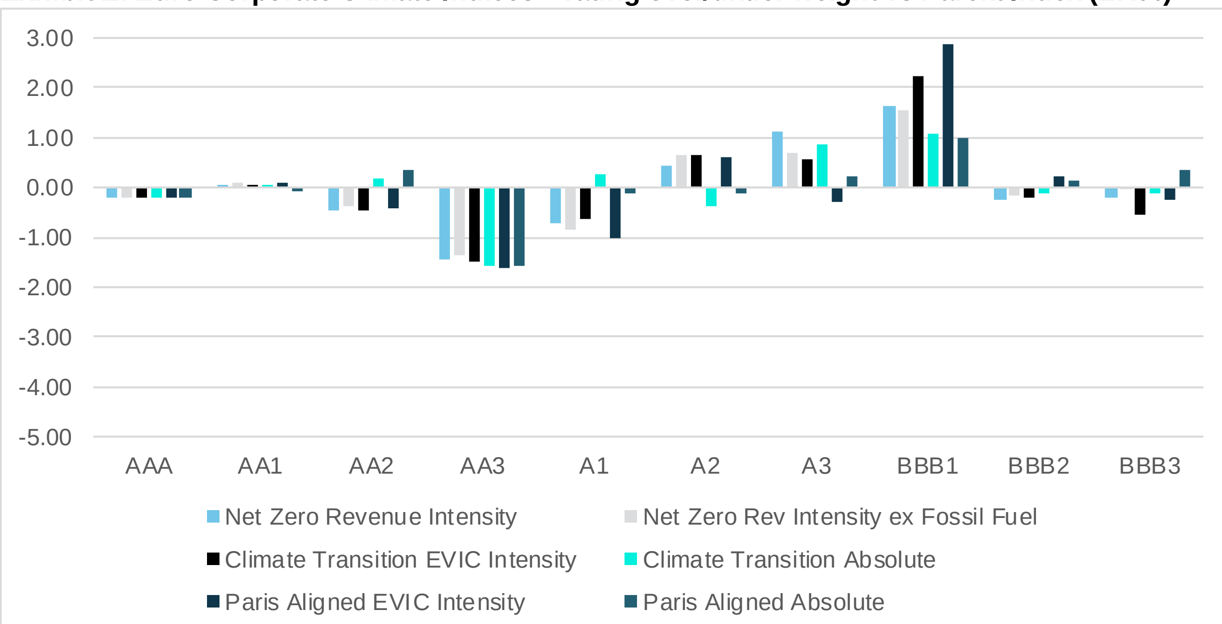
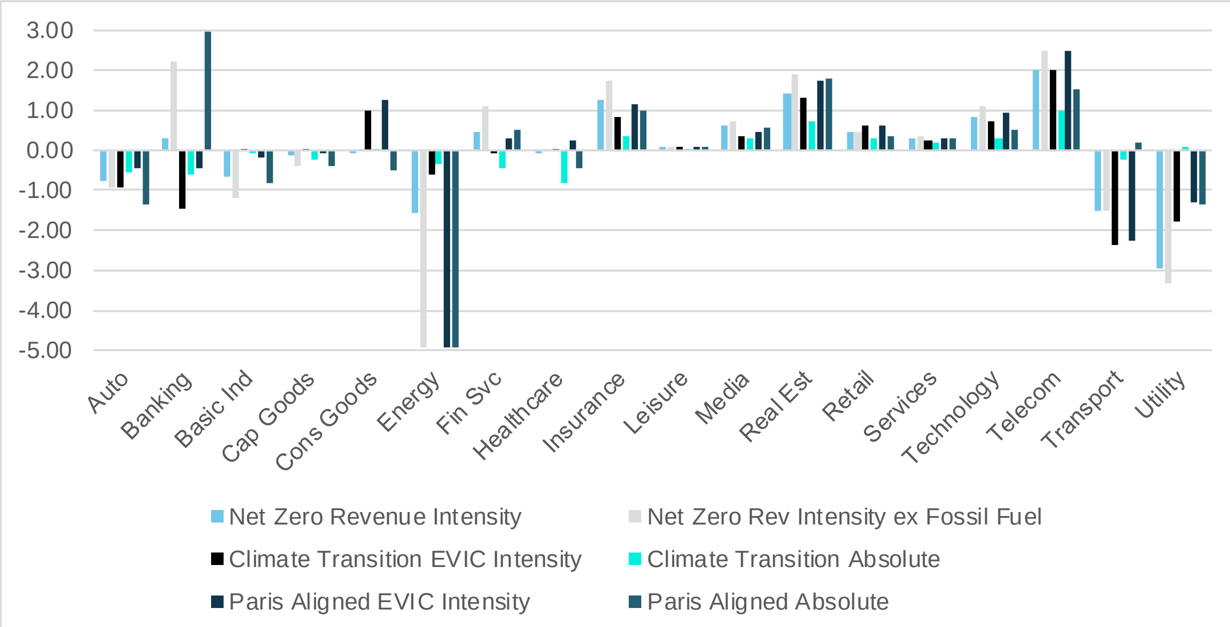


Exhibit F: Euro Corporate Climate Indices – sector over/under weight vs Parent Index (ER00)

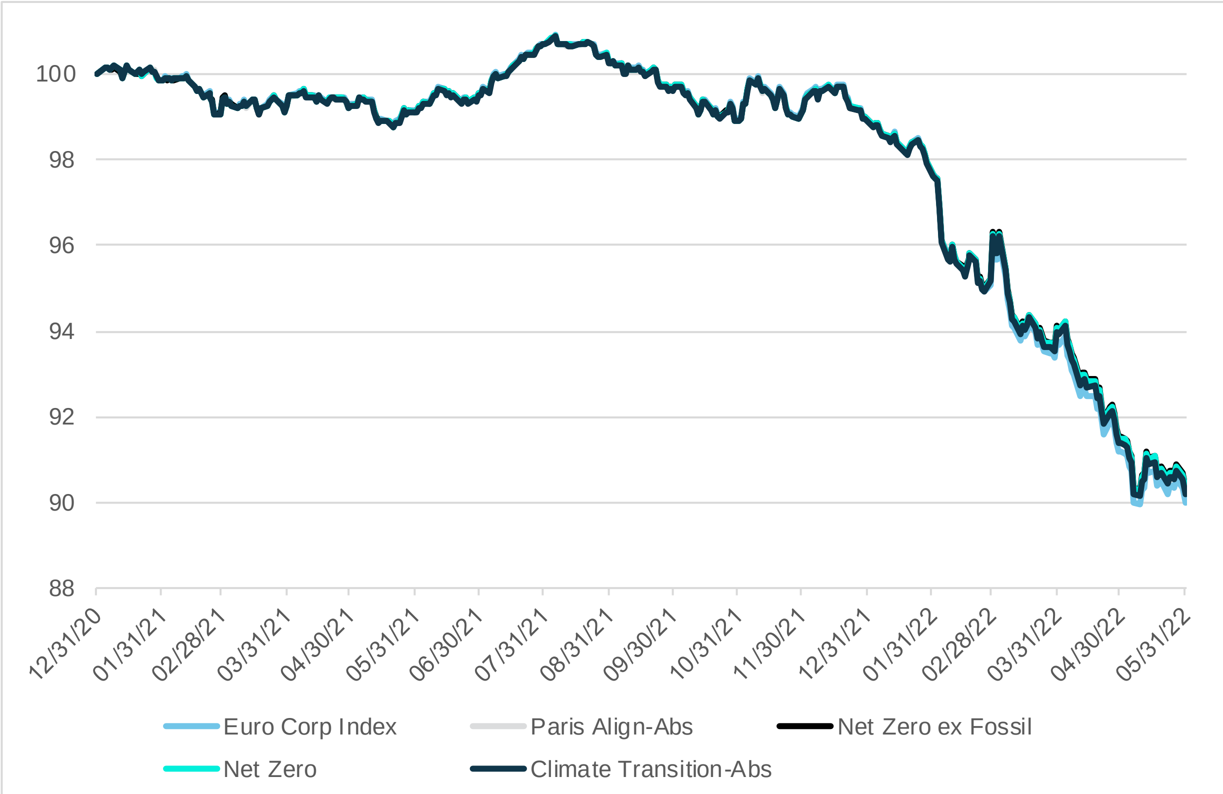


Impact of alternate approaches on index structure

Finally, and most importantly, IDI compared the performance of the climate variants versus their Euro Corporate Parent Index. Historical performance comparisons are limited since the inception dates of the two absolute emissions and two revenue-based carbon intensity variants is 12/31/2020, and the inception date of the two EVIC-based carbon intensity variants is 12/31/2021. Nonetheless, that brief performance period represents a particularly volatile market environment and would presumably surface any noteworthy performance biases.

For the four indices that have data going back to 12/31/2020, the tracking throughout that period – one in which the Parent Index lost exactly 10% – is remarkable (Exhibit G). It is worth mentioning that all four of the variants outperformed the Parent Index annualized return, with the Net Zero variant doing best at +0.26%. A comparison of the 2022 YTD total returns of all six variants versus the Parent Index again shows all of them outperforming, in this case by anywhere from 0.22% (Climate Transition using absolute emissions) to 0.37% (Net Zero ex Fossil Fuels).

Exhibit G: Euro Corporate Climate Indices – comparative performance (all values scaled to 100 on 12/31/2020)



Appendix 1: Initial list of Parent Indices

At the time of this publication, IDI is publishing six climate variants for each of the Parent Indices listed in the table below. Individual index rules can be easily accessed by typing the ticker in the Index Snapshot tool on the home page of the ICE Index Platform (https://indices.theice.com).

Parent/Climate indices and reference tickers

		Climate index tickers					
Parent Ticker	Parent index name	Paris Aligned (Absolute Emissions)	Paris Aligned (EVIC Intensity)	Climate Transition (Absolute Emissions)	Climate Transition EVIC Intensity	Net Zero (revenue intensity) ex Fossil Fuels	Net Zero (revenue intensity)
ER00	ICE BofA Euro Corporate Index	ER00PABA	ER00PAB	ER00CTBA	ER00CTB	ER00CNZX	ER00CNZ
C0A0	ICE BofA US Corporate Index	C0A0PABA	C0A0PAB	C0A0CTBA	C0A0CTB	C0A0CNZX	C0A0CNZ
H0A0	ICE BofA US High Yield Index	H0A0PABA	H0A0PAB	H0A0CTBA	H0A0CTB	H0A0CNZX	H0A0CNZ
HE00	ICE BofA Euro High Yield Index	HE00PABA	HE00PAB	HE00CTBA	HE00CTB	HE00CNZX	HE00CNZ
HW00	ICE BofA Global High Yield Index	HW00PABA	HW00PAB	HW00CTBA	HW00CTB	HW00CNZX	HW00CNZ
ACOR	ICE BofA Asian Dollar Corporate Index	ACORPABA	ACORPAB	ACORCTBA	ACORCTB	ACORCNZX	ACORCNZ
EMCB	ICE BofA Emerging Markets Corporate Plus Index	EMCBPABA	EMCBPAB	EMCBCTBA	EMCBCTB	EMCBCNZX	EMCBCNZ
EN00	ICE BofA Euro Non-Financial Index	EN00PABA	EN00PAB	EN00CTBA	EN00CTB	EN00CNZX	EN00CNZ
AUC0	ICE BofA Australia Corporate Index	AUC0PABA	AUC0PAB	AUC0CTBA	AUC0CTB	AUC0CNZX	AUC0CNZ
G0BC	ICE BofA Global Corporate Index	G0BCPABA	G0BCPAB	G0BCCTBA	G0BCCTB	G0BCCNZX	G0BCCNZ
HYDM	ICE BofA Developed Markets High Yield Index	HYDMPABA	HYDMPAB	HYDMCTBA	HYDMCTB	HYDMCNZX	HYDMCNZ
C5A0	ICE BofA 1-10 Year US Corporate Index	C5A0PABA	C5A0PAB	C5A0CTBA	C5A0CTB	C5A0CNZX	C5A0CNZ
C9A0	ICE BofA 10+ Year US Corporate Index	C9A0PABA	C9A0PAB	C9A0CTBA	C9A0CTB	C9A0CNZX	C9A0CNZ
ERL0	ICE BofA Euro Large Cap Corporate Index	ERL0PABA	ERL0PAB	ERL0CTBA	ERL0CTB	ERL0CNZX	ERL0CNZ
ERL1	ICE BofA 1-3 Year Euro Large Cap Corporate Index	ERL1PABA	ERL1PAB	ERL1CTBA	ERL1CTB	ERL1CNZX	ERL1CNZ
ERL5	ICE BofA 1-10 Year Euro Large Cap Corporate Index	ERL5PABA	ERL5PAB	ERL5CTBA	ERL5CTB	ERL5CNZX	ERL5CNZ
ERLV	ICE BofA 1-5 Year Euro Large Cap Corporate Index	ERLVPABA	ERLVPAB	ERLVCTBA	ERLVCTB	ERLVCNZX	ERLVCNZ
HP00	ICE BofA European Currency High Yield Index	HP00PABA	HP00PAB	HP00CTBA	HP00CTB	HP00CNZX	HP00CNZ
JC00	ICE BofA Japan Corporate Index	JC00PABA	JC00PAB	JC00CTBA	JC00CTB	JC00CNZX	JC00CNZ
P0P1	ICE BofA Fixed Rate Preferred Securities Index	P0P1PABA	P0P1PAB	P0P1CTBA	P0P1CTB	P0P1CNZX	P0P1CNZ
P0P4	ICE BofA Core Plus Fixed Rate Preferred Securities Index	P0P4PABA	P0P4PAB	P0P4CTBA	P0P4CTB	P0P4CNZX	P0P4CNZ
UR00	ICE BofA Sterling Corporate Index	UR00PABA	UR00PAB	UR00CTBA	UR00CTB	UR00CNZX	UR00CNZ
GI00	ICE BofA Global Corporate & High Yield Index	GI00PABA	GI00PAB	GI00CTBA	GI00CTB	GI00CNZX	GI00CNZ

Disclosures

Source: ICE Data Services.

This document is not to be published, reproduced, copied, disclosed or used without the express written consent of Intercontinental Exchange, Inc. ("ICE"). This document is provided for informational purposes only. The information contained herein is subject to change without notice and does not constitute any form of warranty, representation, or undertaking. Nothing herein should in any way be deemed to alter the legal rights and obligations contained in agreements between ICE, ICE Data Indices, LLC ("IDI") and/or any of their affiliates and their respective clients relating to any of the products or services described herein. This document may include observations made by IDI of general market movements and trends, but nothing herein is intended to be a solicitation or a recommendation to buy, sell or hold securities. IDI does not provide legal, tax, accounting, investment or other professional advice. Clients should consult with an attorney, tax, or accounting professional regarding any specific legal, tax, or accounting situation. Each index provides a general investment strategy, does not take into account any of the specific needs or financial circumstances of any person, entity or group of persons and should not be considered investment advice. All information provided by IDI, including without limitation, any materials that describe any Index, is of general nature only.

Unless otherwise indicated, these materials have been prepared solely for informational purposes based upon information generally available to the public from source(s) believed to be reliable and are subject to change without notice. No content contained in this document (including index data, ratings, credit-related analyses and data, model, software or other application or output therefrom) or any part thereof ("**Content"**) may be modified, reverse-engineered, reproduced or distributed in any form by any means, or stored in a database or retrieval system, without the prior written permission of IDI. The Content shall not be used for any unlawful or unauthorized purposes. In no event shall IDI have any liability (whether in negligence or otherwise) to any person in connection with such person's unauthorized use of any Index or Content. THE CONTENT IS PROVIDED ON AN "AS IS" BASIS. ICE, IDI AND/OR ANY OF THEIR AFFILIATES AND THEIR RESPECTIVE THIRD PARTY SUPPLIERS PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES AND CONDITIONS, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR ANY OTHER MATTER. Without limiting the foregoing, ICE and its affiliates, including IDI or any of its affiliates make no representation or warranty that any data or information (including but not limited to evaluated pricing) supplied to or by it are complete or free from errors, omissions, or defects. In no event shall ICE, IDI and/or any of their affiliates be liable to any party for any direct, indirect, incidental, exemplary, compensatory, punitive, special or consequential damages, costs, expenses, legal fees, or losses (including, without limitation, lost income or lost profits and opportunity costs) in connection with any use of the Content even if advised of the possibility of such damages.

The IDI Governance Committee reserves the right to treat individual indices differently in accordance with the stated objectives in the relevant index methodologies. In addition, IDI reserves the right to re-evaluate and modify the removal price of any security, subject to market accessibility and availability of pricing. Please note that users of IDI's indices are solely responsible for ensuring such users' compliance with all applicable law (including, without limitation, sanctions laws and any other rules, regulations or prohibitions) in connection with such use (including, without limitation, trading, investment or other use).

Any available index returns are hypothetical and do not represent the results of actual trading of Investable Products, and as such, do not represent actual past performance and are not indicative of any specific investment. The Content (including any of the output derived from any analytic tools or models) is not intended to predict actual results, which may differ substantially from those reflected. Past performance is not necessarily indicative of future results.

Historical returns and weights before the launch date of an Index are based upon backtested data. For the period prior to the launch date of an Index, simulated performance data has been provided as an illustration of how the Index would have performed during the relevant period had the Index been calculated by IDI using the current Index methodology. Such simulated performance data has inherent limitations, as the simulated data is produced by the retroactive application of the methodology. Simulated performance data is based on criteria applied retroactively with the benefit of hindsight and knowledge of factors that may have positively affected its performance and may reflect a bias toward strategies that have performed well in the past.

ICE, the ultimate parent company of IDI, keeps certain activities of its business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain business units of ICE may have information that is not available to other business units. IDI has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process. There is no obligation on IDI to disclose information held by it in relation to any Index to other parties.

The various businesses of ICE provide a wide range of products and services to a diverse group of clients and, as such, ICE faces potential conflicts of interest in the ordinary course of its business. ICE may be acting in a number of capacities in connection with Investable Products or other transactions entered into in relation to IDI. ICE, acting in such capacities in connection with such transactions, shall have only the duties and responsibilities expressly agreed to by it in its relevant capacity and shall not, by virtue of its acting in any other capacity, be deemed to have other duties or responsibilities or be deemed to hold a standard of care other than as expressly provided with respect to each such capacity. IDI has established policies and procedures designed to identify and address conflicts of interest.

In addition, ICE provides a wide range of services to, or relating to, many organizations, including issuers of securities, investment advisers, broker-dealers, investment banks, other financial institutions and financial intermediaries, and accordingly may receive fees or other economic benefits from those organizations, including organizations whose securities may form part of any index or other evaluation IDI carries out.

ABOUT INTERCONTINENTAL EXCHANGE: Intercontinental Exchange, Inc. (NYSE: ICE) is a Fortune 500 company formed in the year 2000 to modernize markets. ICE serves customers by operating the exchanges, clearing houses and information services they rely upon to invest, trade and manage risk across global financial and commodity markets. ICE Data Services serves the information and connectivity needs across virtually all asset classes. As the parent company of the New York Stock Exchange, the company is the premier venue for raising capital in the world, driving economic growth and transforming markets.

ABOUT ICE DATA SERVICES: ICE Data Services is part of Intercontinental Exchange, Inc. (NYSE: ICE) and offers end-to-end solutions for information, analytics index services and connectivity, with a range of proprietary data and tools for global markets across fixed income, equities, commodities, FX and options. ICE Data Services refers to a group of products and services offered by certain ICE companies and is the marketing name used for ICE Data Services, Inc. and its subsidiaries globally, including ICE Data Pricing & Reference Data, LLC, ICE Data Services Europe Limited and ICE Data Services Australia Pty Ltd. ICE Data Services is also the marketing name used for IDI and ICE Data Derivatives Inc. and its subsidiaries globally and certain other data products and services offered by other ICE affiliates.

Trademarks of ICE and/or its affiliates include: Intercontinental Exchange, ICE, ICE block design, NYSE, ICE Data Services, New York Stock Exchange, Intellidex, StrataQuant and Interactive Data. Information regarding additional trademarks and intellectual property rights of ICE and/or its affiliates is located at *www.intercontinentalexchange.com/terms-of-use*. BofA® is a registered trademark of Bank of America Corporation licensed by Bank of America Corporation and its affiliates ("BofA") and may not be used without BofA's prior written approval. Other products, services or company names mentioned herein are the property of, and may be the service mark or trademark of, their respective owners.
Sustainalytics US Inc. is an ESG research provider of ICE Data Indices, LLC. The information included herein may be based, in part, on Sustainalytics proprietary information. The information is provided "as is" and, therefore Sustainalytics assumes no responsibility for errors or omissions. Sustainalytics cannot be held liable for damage arising from the use of this document or information contained herein in any manner whatsoever. Nothing contained herein shall be construed as to make a representation or warranty, express or implied, regarding the advisability to invest in or include companies in investable universes and/or portfolios.