S&P ESG Global Macro Indices

Methodology

May 2020
Table of Contents

Introduction 2
   Index Objective 2
   Index Family 2
   Supporting Documents 2

Eligibility Criteria 3
   Index Eligibility 3

Index Construction 4
   Signals and Market Phase Determination 4
   Base Weights Allocation Matrix 5
   S&P ESG Global Macro (with Commodity) Index 5
   S&P ESG Global Macro Index 5
   Risk Control Overlay 5
   Index Calculation 6

Index Maintenance 7
   Rebalancing 7
   Currency of Calculation and Additional Index Return Series 7
   Base Date and History Availability 7

Index Governance 8
   Index Committee 8

Index Policy 9
   Holiday Schedule 9
   Rebalancing 9
   Unexpected Exchange Closures 9
   Recalculation Policy 9
   Contact Information 9

Index Dissemination 10
   Tickers 10
   Index Data 10
   Web site 10

Appendix I 11

Disclaimer 12
Introduction

Index Objective

The S&P ESG Global Macro Indices are weighted return indices that measure the performance of a multi-asset class strategy with ESG equity sub-indices and a risk control overlay. The indices employ economic and market trend signals to determine allocations across sub-indices representing different asset classes.

Index Family

The S&P ESG Global Macro Indices currently include:

- S&P ESG Global Macro (with Commodity) Index
- S&P ESG Global Macro Index

Supporting Documents

This methodology is meant to be read in conjunction with supporting documents providing greater detail with respect to the policies, procedures and calculations described herein. References throughout the methodology direct the reader to the relevant supporting document for further information on a specific topic. The list of the main supplemental documents for this methodology and the hyperlinks to those documents is as follows:

<table>
<thead>
<tr>
<th>Supporting Document</th>
<th>URL</th>
</tr>
</thead>
<tbody>
<tr>
<td>S&amp;P Dow Jones Indices’ Index Mathematics Methodology</td>
<td>Index Mathematics Methodology</td>
</tr>
</tbody>
</table>

This methodology was created by S&P Dow Jones Indices to achieve the aforementioned objective of measuring the underlying interest of each index governed by this methodology document. Any changes to or deviations from this methodology are made in the sole judgment and discretion of S&P Dow Jones Indices so that the index continues to achieve its objective.
Eligibility Criteria

Index Eligibility

The universe of eligible asset classes, and the sub-indices used to represent each, are:

<table>
<thead>
<tr>
<th>Asset Class</th>
<th>Region</th>
<th>Index</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equities</td>
<td>U.S. Equities</td>
<td>S&amp;P 500 ESG Excess Return Index</td>
</tr>
<tr>
<td></td>
<td>Europe Equities</td>
<td>S&amp;P Europe 350 ESG Excess Return Index (USD)¹</td>
</tr>
<tr>
<td></td>
<td>Japanese Equities</td>
<td>S&amp;P Japan 500 ESG Excess Return Index (USD)²</td>
</tr>
<tr>
<td>Fixed Income</td>
<td>U.S. Fixed Income</td>
<td>S&amp;P 10-Year U.S. Treasury Note Futures Excess Return Index</td>
</tr>
<tr>
<td></td>
<td>Europe Fixed Income</td>
<td>S&amp;P Euro-Bund Futures Excess Return Index (USD)³</td>
</tr>
<tr>
<td></td>
<td>Japanese Fixed Income</td>
<td>S&amp;P 10-Year JGB Futures Excess Return Index (USD)⁴</td>
</tr>
<tr>
<td>Commodity</td>
<td>Global Commodities</td>
<td>S&amp;P GSCI Light Energy 3 Month Forward ER</td>
</tr>
</tbody>
</table>

The excess return versions of the S&P 500 ESG, S&P Europe 350 ESG, and S&P Japan 500 ESG Indices calculate in local currency before conversion into the USD versions. Local cash rates are used to calculate the excess return indices.

<table>
<thead>
<tr>
<th>Sub-index</th>
<th>Asset Class</th>
<th>Sub-Components</th>
<th>Ticker</th>
</tr>
</thead>
<tbody>
<tr>
<td>S&amp;P 500 ESG Excess Return Index (USD)</td>
<td>Equity</td>
<td>S&amp;P 500 ESG Index (USD)</td>
<td>SPXESUP</td>
</tr>
<tr>
<td></td>
<td>Cash¹</td>
<td>2 Month US Dollar LIBOR interest rate</td>
<td>USD2MFSR=</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 Month US Dollar LIBOR interest rate</td>
<td>USD3MFSR=</td>
</tr>
<tr>
<td>S&amp;P Europe 350 ESG Excess Return Index (USD)</td>
<td>Equity</td>
<td>S&amp;P Europe 350 ESG Index (EUR)</td>
<td>SPEESEP</td>
</tr>
<tr>
<td></td>
<td>Cash¹</td>
<td>2 Month ICE LIBOR EUR interest rate</td>
<td>EUR2MFSR=</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 Month ICE LIBOR EUR interest rate</td>
<td>EUR3MFSR=</td>
</tr>
<tr>
<td></td>
<td>Exchange Rate</td>
<td>DIRECT US Dollar TO Euro currency (WM Spot)</td>
<td>USDEURFIXM=WM</td>
</tr>
<tr>
<td>S&amp;P Japan 500 ESG Excess Return Index (USD)</td>
<td>Equity</td>
<td>S&amp;P Japan 500 ESG Index (JPY)</td>
<td>SPJESGJP</td>
</tr>
<tr>
<td></td>
<td>Cash¹</td>
<td>2 Month ICE LIBOR JPY interest rate</td>
<td>JPY2MFSR=</td>
</tr>
<tr>
<td></td>
<td></td>
<td>3 Month ICE LIBOR JPY interest rate</td>
<td>JPY3MFSR=</td>
</tr>
<tr>
<td></td>
<td>Exchange Rate</td>
<td>DIRECT Japanese Yen TO US Dollar (WM Spot)</td>
<td>USDJPYFX=WM</td>
</tr>
</tbody>
</table>

For information on the sub-component indices, please refer to the S&P ESG Index Series Methodology, S&P Global Bond Futures Index Series Methodology, and S&P GSCI Methodology, respectively. In addition, please refer to S&P Dow Jones Indices' Index Mathematics Methodology for details on excess return index calculations. These documents are available at www.spdji.com.

¹ The S&P Europe 350 ESG Excess Return Index (USD) is the principal hedged USD version of the S&P Europe 350 ESG Excess Return Index based on price return. Please see Appendix I for the calculation of principal hedged currency index levels.
² The S&P Japan 500 ESG Excess Return Index (USD) is the principal hedged USD version of the S&P Japan 500 ESG Excess Return Index based on price return. Please see Appendix I for the calculation of principal hedged currency index levels.
³ The S&P Euro-Bund Futures Excess Return Index (USD) is the principal hedged USD version of the S&P Euro-Bund Futures Excess Return Index. Please see Appendix I for the calculation of principal hedged currency index levels.
⁴ The S&P 10-Year JGB Futures Excess Return Index (USD) is the principal hedged USD version of the S&P 10-Year JGB Futures Excess Return Index. Please see Appendix I for the calculation of principal hedged currency index levels.
⁵ The S&P ESG Global Macro Index does not include the commodity component.
⁶ Cash items are used in calculating the excess return; the indices do not hold cash.
Index Construction

Signals and Market Phase Determination

The S&P ESG Global Macro Indices determine their sub-index representation based on the combination of economic and market trend signals as shown in the below table.

<table>
<thead>
<tr>
<th>Signal</th>
<th>Indicator/Equity Benchmark</th>
</tr>
</thead>
<tbody>
<tr>
<td>Economic Signal</td>
<td>OECD Total Composite Leading Indicator</td>
</tr>
<tr>
<td>Market Trend Signal: Number of equity</td>
<td>S&amp;P 500 Index (USD)</td>
</tr>
<tr>
<td>benchmark indices with positive 63-Day Price Return</td>
<td>S&amp;P Europe 350 (EUR)</td>
</tr>
<tr>
<td>Price Return</td>
<td>S&amp;P Japan 500 (JPY)</td>
</tr>
</tbody>
</table>

OECD Total Composite Leading Indicator ("CLI") is designed to provide early signals of turning points in business cycles showing fluctuation of the economic activity globally around its long-term potential level. The OECD aims for the turning points of the CLI to consistently precede those of the business cycle, typically by 6-9 months (lead time varies).

CLIs show short-term economic movements in qualitative rather than quantitative terms. The long-term average of the amplitude adjusted CLI is 100 which represents the trend of economic activity. The OECD CLIs are compiled and published on a monthly basis. The input data for a given month "t" is available in month "t+2" and is available at the OECD Data website at https://stats.oecd.org/index.aspx?queryid=57153#.

The global market phase is determined once a month, based on the latest available value of OECD Total CLI and the 63-day price returns of the above equity benchmarks as of the second last business day of each month (reference date). The market phase identified is then used to determine the base weight assigned to each of the asset classes and sub-indices in the following month, starting from the first business day of the following month after market close.

<table>
<thead>
<tr>
<th>Market Phase Determination</th>
<th>OECD Total CLI</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of equity benchmarks with positive 63-day price return</td>
<td>&gt;100</td>
</tr>
<tr>
<td>&gt;= 2</td>
<td>Phase 1</td>
</tr>
<tr>
<td>&lt; 2</td>
<td>Phase 3</td>
</tr>
</tbody>
</table>

For more information on the equity indices used for market trend signals, please refer to the respective methodology documents located on our Web site, www spdji.com.
Base Weights Allocation Matrix

Based on the market phase determined at the reference date, a base weight is assigned to each sub-index for the following month according to the below allocation matrix. The allocation across three regions within equities and fixed income follows the ratio of 3:2:1 for U.S., Europe, and Japan respectively.

S&P ESG Global Macro (with Commodity) Index

<table>
<thead>
<tr>
<th>Market Phase</th>
<th>Equities</th>
<th>Fixed Income</th>
<th>Commodities</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>72%</td>
<td>20%</td>
<td>8%</td>
</tr>
<tr>
<td>Phase 2</td>
<td>49.5%</td>
<td>45.0%</td>
<td>5.5%</td>
</tr>
<tr>
<td>Phase 3</td>
<td>22.5%</td>
<td>75.0%</td>
<td>2.5%</td>
</tr>
<tr>
<td>Phase 4</td>
<td>0%</td>
<td>100%</td>
<td>0%</td>
</tr>
</tbody>
</table>

S&P ESG Global Macro Index

<table>
<thead>
<tr>
<th>Market Phase</th>
<th>Equities</th>
<th>Fixed Income</th>
</tr>
</thead>
<tbody>
<tr>
<td>Phase 1</td>
<td>80%</td>
<td>20%</td>
</tr>
<tr>
<td>Phase 2</td>
<td>55%</td>
<td>45%</td>
</tr>
<tr>
<td>Phase 3</td>
<td>25%</td>
<td>75%</td>
</tr>
<tr>
<td>Phase 4</td>
<td>0%</td>
<td>100%</td>
</tr>
</tbody>
</table>

The assigned monthly base weights are then applied to each business day of the following month for the calculation of the leverage factor needed each day to achieve the target portfolio volatility of 5%.

Risk Control Overlay

On each business day of the following month, the prior 60-day and 20-day volatilities of the S&P ESG Global Macro Indices calculate based on the monthly base weights assigned to sub-indices in that month and the covariance matrix as of two business days prior. The maximum of the two volatility values is chosen to determine the leverage factor needed to achieve the target volatility of 5%. The leverage factor is capped at 200%. Base weights assigned to sub-indices are then adjusted by the leverage factor.

\[
\text{Leverage Factor} = \text{Min} [200\%, \frac{5\%}{\text{Max}(VOL_{t-20D}, VOL_{t-60D})}] 
\]

Adjusted Base Weights = Base Weights * Leverage Factor

Please note: The number of units invested in a sub-index at day \( t \) after market close is pre-determined based on the index level of the S&P ESG Global Macro Indices, the index level, and adjusted base weight of this sub-index as of day \( t-2 \). Therefore, the effective weight allocated to this sub-index at day \( t \) is slightly different from its adjusted base weight determined at day \( t-2 \).
Index Calculation

The S&P ESG Global Macro Indices are calculated as follows:

$$IndexDailyReturn_t = \sum_{i=1}^{n} W_t^i \left( \frac{Subindex_t^i}{Subindex_{t-1}^i} - 1 \right)$$

where:

- $W_t^i$ = the effective weight of Subindex i assigned for time $t$
- $Subindex_t^i$ = the index level of Subindex i at time $t$

$$IndexValue_t = IndexValue_{t-1} \times (1 + IndexDailyReturns_t)$$
Index Maintenance

Rebalancing

The monthly base weights assigned to sub-indices are determined once a month at the second last business day of the prior month. However, the leverage factor and adjusted base weights are calibrated daily based on the covariance matrix two days prior. The indices rebalance daily, based on the adjusted base weights and index levels of the index and sub-indices as of two business days prior.

Currency of Calculation and Additional Index Return Series

The indices are calculated in U.S. dollars.

In addition to the indices detailed in this methodology, additional return series versions of the indices may be available, including, but not limited to: currency, currency hedged, decrement, fair value, inverse, leveraged, and risk control versions. For a list of available indices, please refer to S&P DJI's All Indices by Methodology Report.

For information on the calculation of different types of indices, please refer to S&P Dow Jones Indices’ Index Mathematics Methodology.

For the inputs necessary to calculate certain types of indices, including decrement, dynamic hedged, fair value, and risk control indices, please refer to the Parameters documents available at www.spdji.com.

Base Date and History Availability

Index history availability, base date, and base value, are in the table below.

<table>
<thead>
<tr>
<th>Index</th>
<th>Launch Date</th>
<th>First Value Date</th>
<th>Base Date</th>
<th>Base Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>S&amp;P ESG Global Macro (with Commodity) Index</td>
<td>10/04/2019</td>
<td>08/31/2010</td>
<td>8/31/2010</td>
<td>100</td>
</tr>
<tr>
<td>S&amp;P ESG Global Macro Index</td>
<td>10/04/2019</td>
<td>08/31/2010</td>
<td>8/31/2010</td>
<td>100</td>
</tr>
</tbody>
</table>
Index Governance

Index Committee

The indices are maintained by the S&P Dow Jones Indices’ Factor Indices Index Committee. All committee members are full-time professional members of S&P Dow Jones Indices’ staff. The Committee meets regularly. At each meeting, the Committee reviews pending corporate actions that may affect index constituents, statistics comparing the composition of the index to the market, companies that are being considered as candidates for addition to the index, and any significant market events. In addition, the Committee may revise index policy covering rules for selecting companies, treatment of dividends, share counts or other matters.

S&P Dow Jones Indices considers information about changes to its indices and related matters to be potentially market moving and material. Therefore, all Committee discussions are confidential.

S&P Dow Jones Indices’ Index Committees reserve the right to make exceptions when applying the methodology if the need arises. In any scenario where the treatment differs from the general rules stated in this document or supplemental documents, clients will receive sufficient notice, whenever possible.

In addition to the daily governance of indices and maintenance of index methodologies, at least once within any 12-month period, the Index Committee reviews the methodology to ensure the indices continue to achieve the stated objectives, and that the data and methodology remain effective. In certain instances, S&P Dow Jones Indices may publish a consultation inviting comments from external parties.

For information on Quality Assurance and Internal Reviews of Methodology, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.
Index Policy

Holiday Schedule

The indices are calculated when the U.S., Europe, and Japan equity markets, and the relevant bond futures and commodities markets, are open.

A complete holiday schedule for the year is available at wwwspdji.com.

Rebalancing

The Index Committee may change the date of a given rebalancing for reasons including market holidays occurring on the scheduled rebalancing date. Any such change will be announced with proper advance notice where possible.

Unexpected Exchange Closures

For information on Unexpected Exchange Closures, please refer to S&P Dow Jones Indices’ Equity Indices Policies & Practices Methodology.

Recalculation Policy

For information on the recalculation policy, please refer to S&P Dow Jones Indices’ Equity Indices Policies & Practices Methodology.

For information on Calculations and Pricing Disruptions, Expert Judgment and Data Hierarchy, please refer to S&P Dow Jones Indices’ Equity Indices Policies & Practices Methodology.

Contact Information

For questions regarding an index, please contact: index_services@spglobal.com.
Index Dissemination

Index levels are available through S&P Dow Jones Indices’ Web site at www.spdji.com, major quote vendors (see codes below), numerous investment-oriented Web sites, and various print and electronic media.

Tickers

The table below lists headline indices covered by this document. All versions of the below indices that may exist are also covered by this document. Please refer to S&P DJI's All Indices by Methodology Report for a complete list of indices covered by this document.

<table>
<thead>
<tr>
<th>Index</th>
<th>Return Type</th>
<th>BBG</th>
<th>Reuters</th>
</tr>
</thead>
<tbody>
<tr>
<td>S&amp;P ESG Global Macro (with Commodity) Index</td>
<td>Excess Return</td>
<td>SPEGMAUP</td>
<td>---</td>
</tr>
<tr>
<td>S&amp;P ESG Global Macro Index</td>
<td>Excess Return</td>
<td>SPEGMXUP</td>
<td>---</td>
</tr>
</tbody>
</table>

Index Data

Daily constituent and index level data are available via subscription.

For product information, please contact S&P Dow Jones Indices, www.spdji.com/contact-us.

Web site

For further information, please refer to S&P Dow Jones Indices’ Web site at www.spdji.com.
Appendix I

The USD versions of the S&P Europe 350 ESG Excess Return Index, S&P Japan 500 ESG Excess Return Index, S&P Euro-Bund Futures Excess Return Index, and S&P 10-Year JGB Futures Excess Return Index are calculated on a principal hedged basis. The calculation is:

\[ \text{IndexDailyReturn(USD)}_t = \left( \frac{\text{IndexValue(LOC)}_t}{\text{IndexValue(LOC)}_{t-1}} - 1 \right) \times \left( \frac{\text{ExchangeRate(USD/LOC)}_t}{\text{ExchangeRate(USD/LOC)}_{t-1}} \right) \]

where:

- \(\text{ExchangeRate(USD/LOC)}_t\) = U.S. dollars per local currency at time \(t\)
- \(\text{IndexValue(LOC)}_t\) = The index level in local currency at time \(t\)
- \(\text{IndexValue(USD)}_t = \text{IndexValue(USD)}_{t-1} \times (1 + \text{IndexDailyReturns(USD)}_t)\)

For information on excess return index calculations, please refer to S&P Dow Jones Indices’ Index Mathematics Methodology.
Disclaimer

Copyright © 2020 S&P Dow Jones Indices LLC. All rights reserved. STANDARD & POOR’S, S&P, S&P 500, S&P 500 LOW VOLATILITY INDEX, S&P 100, S&P COMPOSITE 1500, S&P MIDCAP 400, S&P SMALLCAP 600, S&P GIVI, GLOBAL TITANS, DIVIDEND ARISTOCRATS, S&P TARGET DATE INDICES, GICS, SPIVA, SPDR and INDEXOLOGY are registered trademarks of Standard & Poor’s Financial Services LLC (“S&P”). DOW JONES, DJ, DJIA and DOW JONES INDUSTRIAL AVERAGE are registered trademarks of Dow Jones Trademark Holdings LLC (“Dow Jones”). These trademarks together with others have been licensed to S&P Dow Jones Indices LLC. Redistribution or reproduction in whole or in part are prohibited without written permission of S&P Dow Jones Indices LLC. This document does not constitute an offer of services in jurisdictions where S&P Dow Jones Indices LLC, S&P, Dow Jones or their respective affiliates (collectively “S&P Dow Jones Indices”) do not have the necessary licenses. Except for certain custom index calculation services, all information provided by S&P Dow Jones Indices is impersonal and not tailored to the needs of any person, entity or group of persons. S&P Dow Jones Indices receives compensation in connection with licensing its indices to third parties and providing custom calculation services. Past performance of an index is not an indication or guarantee of future results.

It is not possible to invest directly in an index. Exposure to an asset class represented by an index may be available through investable instruments based on that index. S&P Dow Jones Indices does not sponsor, endorse, sell, promote or manage any investment fund or other investment vehicle that is offered by third parties and that seeks to provide an investment return based on the performance of any index. S&P Dow Jones Indices makes no assurance that investment products based on the index will accurately track index performance or provide positive investment returns. S&P Dow Jones Indices LLC is not an investment advisor, and S&P Dow Jones Indices makes no representation regarding the advisability of investing in any such investment fund or other investment vehicle. A decision to invest in any such investment fund or other investment vehicle should not be made in reliance on any of the statements set forth in this document. Prospective investors are advised to make an investment in any such fund or other vehicle only after carefully considering the risks associated with investing in such funds, as detailed in an offering memorandum or similar document that is prepared by or on behalf of the issuer of the investment fund or other investment product or vehicle. S&P Dow Jones Indices LLC is not a tax advisor. A tax advisor should be consulted to evaluate the impact of any tax-exempt securities on portfolios and the tax consequences of making any particular investment decision. Inclusion of a security within an index is not a recommendation by S&P Dow Jones Indices to buy, sell, or hold such security, nor is it considered to be investment advice.

These materials have been prepared solely for informational purposes based upon information generally available to the public and from sources believed to be reliable. No content contained in these materials (including index data, ratings, credit-related analyses and data, research, valuations, model, software or other application or output therefrom) or any part thereof (“Content”) may be modified, reverse-engineered, reproduced or distributed in any form or by any means, or stored in a database or retrieval system, without the prior written permission of S&P Dow Jones Indices. The Content shall not be used for any unlawful or unauthorized purposes. S&P Dow Jones Indices and its third-party data providers and licensors (collectively “S&P Dow Jones Indices Parties”) do not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Dow Jones Indices Parties are not responsible for any errors or omissions, regardless of the cause, for the results obtained from the use of the Content. THE CONTENT IS PROVIDED ON AN “AS IS” BASIS. S&P DOW JONES INDICES PARTIES DISCLAIM ANY AND ALL EXPRESS OR IMPLIED WARRANTIES, INCLUDING, BUT NOT LIMITED TO, ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE OR USE, FREEDOM FROM BUGS, SOFTWARE ERRORS OR DEFECTS, THAT THE CONTENT’S FUNCTIONING WILL BE UNINTERRUPTED OR THAT THE CONTENT WILL OPERATE WITH ANY SOFTWARE OR HARDWARE CONFIGURATION. In no event shall S&P Dow Jones Indices Parties 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.

S&P Global keeps certain activities of its various divisions and business units separate from each other in order to preserve the independence and objectivity of their respective activities. As a result, certain divisions and business units of S&P Global may have information that is not available to other business units. S&P Global has established policies and procedures to maintain the confidentiality of certain non-public information received in connection with each analytical process.

In addition, S&P Dow Jones Indices 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 or services they may recommend, rate, include in model portfolios, evaluate or otherwise address.