

**S&P Dow Jones
Indices**

A Division of **S&P Global**

**S&P Quality, Value & Momentum
Multi-factor Indices
*Methodology***

August 2022

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Introduction

Index Objective and Highlights

The S&P Quality, Value & Momentum Multi-factor Indices measure the performance of stocks characterized as having the highest quality, value, and momentum multi-factor score. Index constituents are weighted by the product of market capitalization and multi-factor score, subject to the constraints defined in *Constituent Weightings*.

The S&P Quality, Value & Momentum Top 90% Multi-factor Indices measure the performance of stocks after excluding those with the lowest quality, value, and momentum multi-factor score. Index constituents are weighted by float-adjusted market capitalization (FMC), subject to the constraints defined in *Constituent Weightings*.

Please refer to *Index Construction* for details on score calculation.

Index Family

The S&P Quality, Value & Momentum Multi-factor Indices consist of the following:

- S&P 500 Quality, Value & Momentum Multi-factor Index
- S&P Europe 350 Quality, Value & Momentum Multi-factor Index
- S&P South Africa Composite Quality, Value & Momentum Multi-factor Index
- S&P GCC Composite Quality, Value & Momentum Multi-factor Index
- S&P Saudi Arabia Quality, Value & Momentum Multi-factor Index
- S&P Saudi Arabia Shariah Quality, Value & Momentum Multi-factor Index
- S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-factor Index
- S&P GCC Composite Quality, Value & Momentum Multi-Factor Shariah Index
- S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-Factor Shariah Index

The S&P Quality, Value & Momentum Top 90% Multi-Factor Indices consist of the following:

- S&P 500 Quality, Value & Momentum Top 90% Multi-Factor Index
- S&P MidCap 400 Quality, Value & Momentum Top 90% Multi-Factor Index
- S&P SmallCap 600 Quality, Value & Momentum Top 90% Multi-Factor 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:

| Supporting Document | URL |
|-----------------------------------------------------------------------------------|---------------------------------------------------------|
| S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology | Equity Indices Policies & Practices |
| S&P Dow Jones Indices' Index Mathematics Methodology | Index Mathematics Methodology |
| S&P Dow Jones Indices' Float Adjustment Methodology | Float Adjustment Methodology |
| S&P Dow Jones Indices' Global Industry Classification Standard (GICS) Methodology | GICS Methodology |

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 indices are constructed from the constituents of their respective underlying index universe as detailed below:

| Index | Underlying Index Universe |
|-----------------------------------------------------------------------------------------|--------------------------------------------|
| S&P 500 Quality, Value & Momentum Multi-factor Index | S&P 500 |
| S&P Europe 350 Quality, Value & Momentum Multi-factor Index | S&P Europe 350 |
| S&P South Africa Composite Quality, Value & Momentum Multi-factor Index | S&P South Africa Composite |
| S&P GCC Composite Quality, Value & Momentum Multi-factor Index | S&P GCC Composite |
| S&P Saudi Arabia Quality, Value & Momentum Multi-factor Index | S&P Saudi Arabia |
| S&P Saudi Arabia Shariah Quality, Value & Momentum Multi-factor Index | S&P Saudi Arabia Shariah |
| S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-factor Index | S&P Pan Arab Composite LargeMidCap |
| S&P 500 Quality, Value & Momentum Top 90% Multi-factor Index | S&P 500 |
| S&P MidCap 400 Quality, Value & Momentum Top 90% Multi-factor Index | S&P MidCap 400 |
| S&P SmallCap 600 Quality, Value & Momentum Top 90% Multi-factor Index | S&P SmallCap 600 |
| S&P GCC Composite Quality, Value & Momentum Multi-Factor Shariah Index | S&P GCC Composite Shariah |
| S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-Factor Shariah Index | S&P Pan Arab Composite LargeMidCap Shariah |

For a security to be eligible for consideration for the indices, a stock must first, on the rebalancing reference date:

- Be an existing member of its respective underlying index universe.
- Have the necessary data in order to compute all underlying Quality, Value, and Momentum z-scores as described in the *S&P Quality Indices*, *S&P Enhanced Value Indices*, and *S&P Momentum Indices Methodologies*, for the S&P Quality, Value & Momentum Multi-factor Indices.

The S&P Quality, Value & Momentum Top 90% Multi-factor Indices have no score availability requirement.

- Meet additional liquidity criteria set out in the following table (if any).

| Index | Additional Liquidity Criteria (Three-Month Median Daily Value Traded) | Buffer for Current Constituents ¹ |
|-------------------------------------------------------------------------|--------------------------------------------------------------------------|-------------------------------------------------|
| S&P 500 Quality, Value & Momentum Multi-factor Index | -- | -- |
| S&P Europe 350 Quality, Value & Momentum Multi-factor Index | EUR €5 million | EUR €4 million |
| S&P South Africa Composite Quality, Value & Momentum Multi-factor Index | ZAR 5 million | ZAR 4 million |
| S&P 500 Quality, Value & Momentum Top 90% Multi-factor Index | -- | -- |
| S&P MidCap 400 Quality, Value & Momentum Top 90% Multi-factor Index | -- | -- |
| S&P SmallCap 600 Quality, Value & Momentum Top 90% Multi-factor Index | -- | -- |

¹ For history prior to launch no liquidity buffer was applied to the indices.

For the S&P GCC Composite Quality, Value & Momentum Multi-factor Index, S&P Saudi Arabia Quality, Value & Momentum Multi-factor Index, S&P Saudi Arabia Shariah Quality, Value & Momentum Multi-factor Index, S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-factor Index, S&P GCC Composite Shariah Quality, Value & Momentum Multi-Factor Index, and S&P Pan Arab Composite Shariah LargeMidCap Quality, Value & Momentum Multi-factor Index, the following liquidity criteria are set:

| Index | Additional Liquidity Criteria (Six-Month Median Daily Value Traded) | Buffer for Current Constituents |
|-----------------------------------------------------------------------------------------|------------------------------------------------------------------------|------------------------------------|
| S&P GCC Composite Quality, Value & Momentum Multi-factor Index | US\$ 1 million | US\$ 500,000 |
| S&P Saudi Arabia Quality, Value & Momentum Multi-factor Index | | |
| S&P Saudi Arabia Shariah Quality, Value & Momentum Multi-factor Index | | |
| S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-factor Index | | |
| S&P GCC Composite Shariah Quality, Value & Momentum Multi-factor Index | | |
| S&P Pan Arab Composite Shariah LargeMidCap Quality, Value & Momentum Multi-factor Index | | |

Eligibility Factors

Multiple Share Classes and Dual Listed Companies. Each company is represented once by the Designated Listing. For more information regarding the treatment of multiple share classes, please refer to Approach B within the Multiple Share Classes section of the S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

Index Construction

There are several steps in the construction of the indices:

- First, the index constituents are selected within each component region.
- Second, the index constituents' weights are calculated within each component region.
- Third, for indices with multiple regions, the asset allocations between the regional components are derived from their respective regional weights in the underlying index universe.

Constituent Selection

The selection of the index constituents within each component region is done as follows:

1. Quality, value, and momentum z-scores are computed independently in each component region for each of the stocks that satisfy the criteria as detailed in the *Eligibility Criteria*.

If the underlying earnings per share (EPS) or book value per share (BVPS) for a given stock's return on equity (ROE) is negative, a quality z-score will be calculated but the stock will be ineligible for index inclusion. For the S&P Quality, Value & Momentum Top 90% Multi-Factor Indices, if the underlying EPS or BVPS for a given stock's ROE is negative, a quality z-score will be calculated, and it will be eligible for index inclusion.

For more information on the calculation of the quality, value, and momentum z-scores, please refer to the S&P Quality Indices, S&P Enhanced Value Indices, and S&P Momentum Indices Methodologies, respectively, available at www.spglobal.com/spdji.

2. For each set of z-scores (quality, value, and momentum), percentile scores are calculated within each component region as follows²:

$$P_i = \frac{R_i}{N+1}$$

where:

P_i = Constituent percentile score

R_i = Constituent fractional rank

N = Number of constituents

Note that higher ranking constituents (R_i) are the constituents with stronger underlying z-scores and are given higher percentile scores.

3. Each set of percentile scores are then transformed into a new set of Z-scores (Z') using the inverse of the normal cumulative distribution function with a mean of zero and a standard deviation of 1.
4. A multi-factor z-score ($Z'_{i_{MF}}$) is calculated for each constituent by taking the average of the underlying quality, value, and momentum z-scores which have been derived from the percentile scores in step 3.

$$Z'_{i_{MF}} = (Z'_{i_Q} + Z'_{i_V} + Z'_{i_M})/3$$

where:

$Z'_{i_{MF}}$ = Constituent multi-factor z-score

² Note that the quality and value z-scores used in calculating percentiles are average z-scores (i.e., non-winsorized) according to the *S&P Quality Indices* and *S&P Enhanced Value Indices Methodologies*, respectively. With respect to Momentum, z-scores are not based on an average as this score is derived from one underlying factor. The momentum Z-score is non-winsorized.

Z'_{i_Q} = Constituent quality Z-score

Z'_{i_V} = Constituent value Z-score

Z'_{i_M} = Constituent momentum Z-score

For the S&P Quality, Value & Momentum Top 90% Multi-factor Indices, if a company is missing any of the underlying Quality, Value or Momentum Z-scores (Z'), it will be assigned a corresponding single-factor Z-score (Z') equal to the weighted average Z-score (Z') from the companies with available single-factor Z-scores (Z').

$$Z'_{Assigned} = \frac{\sum \text{Universe Weight} * Z'_{Available}, \text{for constituents with available single factor } Z'}{\sum \text{Universe Weight}, \text{for constituents with available single factor } Z'}$$

5. Finally, a regional multi-factor score (S_i) is calculated as follows:

If $Z'_{i_{MF}} > 0$, $S_i = 1 + Z'_{i_{MF}}$

If $Z'_{i_{MF}} < 0$, $S_i = 1/(1 - Z'_{i_{MF}})$

If $Z'_{i_{MF}} = 0$, $S_i = 1$

6. Within each component region, the number of constituents selected with the highest regional multi-factor score (S_i) is as detailed below:

| Component Regions | Regional Target Stock Counts | Buffer Rank for Current Constituents |
|----------------------------|------------------------------|--------------------------------------|
| S&P 500 | 100 | 120 |
| S&P Europe 350 | 70 | 84 |
| S&P South Africa Composite | 40 | 48 |
| S&P 500 Top 90% | 450 | 460 |
| S&P MidCap 400 Top 90% | 360 | 368 |
| S&P SmallCap 600 Top 90% | 540 | 552 |

or,

For the below indices, within each component region, the number of constituents excluded with the lowest regional multi-factor score (S_i) is as detailed below:

| Component Region | Exclusion Stock Count | Buffer Interval From Bottom | Buffer Interval From Top | Target Stock Count |
|--------------------------|-----------------------|-----------------------------|--------------------------|--------------------|
| S&P 500 Top 90% | 50 | [60, 40] | [440, 460] | 450 |
| S&P MidCap 400 Top 90% | 40 | [48, 32] | [352, 368] | 360 |
| S&P SmallCap 600 Top 90% | 60 | [72, 48] | [528, 552] | 540 |

The target stock count for the S&P Saudi Arabia Quality, Value & Momentum Multi-Factor and S&P Saudi Arabia Shariah Quality, Value & Momentum Multi-Factor indices is determined as the maximum of the following:

- 30,
- 20% of the number of constituents in the universe,
- the number of stocks (ranked by multi-factor score) such that the sum of their FMC is at least 50% of the FMC of the underlying universe.

For the S&P GCC Composite Quality, Value & Momentum Multi-Factor, S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-factor, S&P GCC Composite Shariah Quality, Value & Momentum Multi-Factor, and S&P Pan Arab Composite Shariah LargeMidCap Quality, Value & Momentum Multi-factor Indices, the target stock count is determined as the maximum of the following:

- 30,
- 20% of the number of constituents in the universe,

- sum of the FMC of the selected stocks in each country must make up 50% of the FMC of the underlying universe within the country.

If the target stock count results in a fractional company amount, the number of companies selected is rounded to the nearest integer.

Buffer Rule

For the S&P Quality, Value & Momentum Multi-factor Indices, a 20% buffer is applied to stocks already in the index in order to reduce portfolio turnover and is implemented as follows:

1. Stocks are ranked within each component region based on their regional multi-factor scores and those ranked within the top 80% of their respective regional target stock count are automatically chosen for index inclusion.
2. Stocks which are current constituents that fall within the top 120% of their respective regional target stock count are then chosen for index inclusion in order of their regional multi-factor score.
3. If at this point the regional target stock count has still not been met, the remaining stocks are chosen based on their regional multi-factor score. Additionally, for the S&P GCC Composite Quality, Value & Momentum Multi-Factor, S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-factor Indices, S&P Saudi Arabia Quality, Value & Momentum Multi-factor, S&P Saudi Arabia Shariah Quality, Value & Momentum Multi-factor, S&P GCC Composite Shariah Quality, Value & Momentum Multi-Factor, and S&P Pan Arab Composite Shariah LargeMidCap Quality, Value & Momentum Multi-factor indices, if the target of 50% of the FMC of the underlying universe has not been reached, the remaining stocks are selected by order of rank until the target has been reached.

For the S&P Quality, Value & Momentum Top 90% Multi-factor Indices, a 20% buffer is applied to stocks already in the index in order to reduce portfolio turnover and is implemented as follows:

- Stocks are ranked within each component region based on their regional multi-factor scores and those ranked outside the bottom 120% of their respective regional exclusion stock count are automatically chosen for index inclusion.
- Current constituents ranked outside the bottom 80% of their respective regional exclusion stock count are then chosen for index inclusion in order of their regional multi-factor score.

Constituent Weightings

Region-Specific Weightings. For a given rebalancing, a region-specific weight for all the securities eligible for inclusion within each regional component of an S&P Quality, Value, & Momentum Multi-factor Index is determined by the product of their market capitalization in the underlying index universe and their regional multi-factor score, subject to security and sector constraints. This is done by using an optimization procedure such that the maximum region-specific weight of each security is the lower of 5% and 20 times its market capitalization weight in the underlying index universe, the maximum region-specific weight of any given GICS sector is 40% and the maximum region-specific weight of any given country, as defined by a stock's country of domicile, in regional indices that include multiple countries is 40%. Furthermore, each stock's region-specific weight is floored at 0.05%. Note that the capping algorithm used redistributes the excess weight to the other stocks within the same region in proportion to their regional multi-factor weights (pre-optimization weights).

Where the optimization procedure fails for a period, the constraints are relaxed in the following order: the maximum weight of the security, then the maximum weight of the sector. In the event that the optimization procedure still fails for a period, then the maximum weight constraint for all countries within that region is ignored.

For the S&P South Africa Composite Quality, Value & Momentum Multi-factor Index, the maximum weight of each security is set at 10%. There is no separate capping rule based on each stock's market capitalization weight. The rest of the procedure follows the same as described above.

S&P Saudi Arabia Quality, Value & Momentum Multi-factor Index and S&P Saudi Arabia Shariah Quality, Value & Momentum Multi-factor Index

| Weighting Method | Optimization Procedure | Maximum Weight of Security Constraint | Maximum GICS Sector Weight Constraint | Weight Cap | Floored Stock Weight |
|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------|
| Product of the securities market capitalization in the eligible index universe and the quality score, subject to security and sector constraints. | Final weights are chosen in a way as to minimize the sum of the squared differences of capped weight and uncapped weight, divided by uncapped weight for each stock. | 8% or the stocks weight in the universe whichever is greater. Maximum weight should not exceed a multiple of four times its liquidity weight. | 40% | 20 times the market capitalization weight of the security in the underlying index universe. | 0.05% |

S&P GCC Composite Quality, Value & Momentum Multi-factor Index, and S&P GCC Composite Quality, Value & Momentum Multi-Factor Shariah Index

| Weighting Method | Optimization Procedure | Maximum Security Weight Constraint | Maximum GICS Sector Weight Constraint | Maximum Country Weight Constraint | Weight Cap | Floored Stock Weight |
|---------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------|
| Product of the securities market capitalization in the eligible index universe and the quality score, subject to security and sector constraints. | Final weights are chosen in a way as to minimize the sum of the squared differences of capped weight and uncapped weight, divided by uncapped weight for each stock. | The greater of 5% or the stocks weight in the universe. Maximum weight should not exceed a multiple of four times its liquidity weight. | 40% | 60% | 20 times the market capitalization weight of the security in the underlying index universe. | 0.05% |

S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-factor Index, and S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-Factor Shariah Index

| Weighting Method | Optimization Procedure | Maximum Security Weight Constraint | Maximum GICS Sector Weight Constraint | Maximum Country Weight Constraint | Weight Cap | Floored Stock Weight |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------|------------------------------------------|---------------------------------------------------------------------------------------------|-----------------------------|
| Product of the securities market capitalization in the eligible index universe and the quality score, subject to security, sector, and country constraints. | Final weights are chosen in a way as to minimize the sum of the squared differences of capped weight and uncapped weight, divided by uncapped weight for each stock. | The greater of 5% or the stocks weight in the universe. Maximum weight should not exceed a multiple of four times its liquidity weight. | 50% | 60% | 20 times the market capitalization weight of the security in the underlying index universe. | 0.05% |

Furthermore, for the S&P Saudi Arabia, S&P GCC Composite, and S&P Pan Arab Indices, the above optimization process includes one additional constraint; the maximum weight of each security should not exceed a multiple of four times its liquidity weight (see *Appendix I*). Where the optimization procedure fails for a given period, the constraints are then relaxed in the following order: the maximum weight of the security, then the maximum weight of the sector, then the maximum weight of the country (if applicable), then 20 times its market capitalization weight and finally, four times its liquidity weight.

For a given rebalancing, a region-specific weight for all the securities eligible for inclusion within each regional component of an S&P Quality, Value, & Momentum Top 90% Multi-factor Index is determined by the FMC in the underlying index universe.

Index Calculations

The index is calculated by means of the divisor methodology used in most S&P Dow Jones Indices equity indices.

For more information on the index calculation methodology, please refer to the Non-Market Capitalization Weighted Indices section of S&P Dow Jones Indices' Index Mathematics Methodology.

Index Maintenance

Rebalancing

The S&P Quality, Value & Momentum Multi-factor Indices, with the exception of the S&P GCC Composite Quality, Value & Momentum Multi-factor Index, S&P Saudi Arabia Quality, Value & Momentum Multi-factor Index, S&P Saudi Arabia Shariah Quality, Value & Momentum Multi-factor Index, S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-factor Index, S&P GCC Composite Quality, Value & Momentum Multi-Factor Shariah Index, and S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-Factor Shariah Index, are rebalanced semi-annually, effective after the close on the third Friday of June and December.

The S&P GCC Composite Quality, Value & Momentum Multi-factor Index, the S&P Saudi Arabia Quality, Value & Momentum Multi-factor Index, the S&P Saudi Arabia Shariah Quality, Value & Momentum Multi-factor Index, the S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-factor Index, the S&P GCC Composite Shariah Quality, Value & Momentum Multi-Factor Index, and the S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-Factor Shariah Index, are rebalanced after the close of the Sunday following the third Friday of June and December.

The fundamental data (for quality and value) reference date is five weeks prior to the rebalancing date. The rebalancing reference dates are the last business day of May and November, respectively. Weights calculated as a result of the reference date data are implemented in the indices using closing prices as of the Wednesday prior to the second Friday of June and December.

The S&P Quality, Value & Momentum Top 90% Multi-factor Indices rebalance quarterly, effective after the close on the third Friday of March, June, September, and December, with a reference date of the last business day of February, May, August, and November, respectively. The fundamental data reference date is five weeks prior to the rebalancing date. Weights calculated as a result of the reference date data are implemented in the indices using closing prices as of the Wednesday prior to the second Friday of March, June, September, and December.

Additions. Except for spin-offs, no additions are made to the indices between the semi-annual rebalancings.

Spin-offs. A spin-off company is added to all the indices of which the parent is a constituent, at a zero price at the market close of the day before the ex-date (with no divisor adjustment). The spin-off company is removed after at least one day of regular way trading (with a divisor adjustment).

Deletions. Index constituents removed from the underlying index universes and their associated component regions are removed from the indices simultaneously.

Corporate Actions

For information on other corporate actions, please refer to the Non-Market Capitalization Indices section of S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

Currency of Calculation and Additional Index Return Series

The indices calculate in U.S. dollars.

WM/Refinitiv foreign exchange rates are taken daily at 4:00 PM London time and used in the calculation of the indices. These mid-market fixings are calculated by the WM Company based on Refinitiv data and appear on Refinitiv pages WMRA.

In addition to the indices detailed in this methodology, additional return series versions of the indices may be available, including, but not limited to the following: currency, currency hedged, decrement, fair value, inverse, leveraged, and risk control versions. For a list of available indices, please refer to the [S&P DJI Methodology & Regulatory Status Database](#).

For information on various index calculations, 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.spglobal.com/spdji.

Base Date and History Availability

The index history availability, base dates, and base values are shown in the table below.

| Index | Launch Date | First Value Date | Base Date | Base Value |
|-----------------------------------------------------------------------------------------|-------------|------------------|------------|------------|
| S&P 500 Quality, Value, & Momentum Multi-Factor Index | 01/30/2017 | 12/16/1994 | 12/16/1994 | 1000 |
| S&P Europe 350 Quality, Value & Momentum Multi-factor Index | 04/26/2017 | 12/21/2001 | 12/21/2001 | 1000 |
| S&P South Africa Composite Quality, Value & Momentum Multi-factor Index | 07/27/2017 | 19/12/2003 | 19/12/2003 | 1000 |
| S&P GCC Composite Quality, Value & Momentum Multi-factor Index | 01/07/2019 | 12/21/2008 | 12/21/2008 | 1000 |
| S&P Saudi Arabia Quality, Value & Momentum Multi-factor Index | 01/07/2019 | 12/21/2008 | 12/21/2008 | 1000 |
| S&P Saudi Arabia Shariah Quality, Value & Momentum Multi-factor Index | 01/07/2019 | 12/21/2008 | 12/21/2008 | 1000 |
| S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-factor Index | 06/29/2020 | 12/21/2008 | 12/21/2008 | 1000 |
| S&P 500 Quality, Value, & Momentum Top 90% Multi-Factor Index | 04/05/2021 | 03/17/1995 | 03/17/1995 | 100 |
| S&P MidCap 400 Quality, Value, & Momentum Top 90% Multi-Factor Index | 04/05/2021 | 03/17/1995 | 03/17/1995 | 100 |
| S&P SmallCap 600 Quality, Value, & Momentum Top 90% Multi-Factor Index | 04/05/2021 | 03/17/1995 | 03/17/1995 | 100 |
| S&P GCC Composite Quality, Value & Momentum Multi-Factor Shariah Index | 05/26/2021 | 12/21/2008 | 12/21/2008 | 1000 |
| S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-Factor Shariah Index | 05/31/2021 | 12/21/2008 | 12/21/2008 | 1000 |

Index Data

Calculation Return Types

S&P Dow Jones Indices calculates multiple return types which vary based on the treatment of regular cash dividends. The classification of regular cash dividends is determined by S&P Dow Jones Indices.

- Price Return (PR) versions are calculated without adjustments for regular cash dividends.
- Gross Total Return (TR) versions reinvest regular cash dividends at the close on the ex-date without consideration for withholding taxes.
- Net Total Return (NTR) versions, if available, reinvest regular cash dividends at the close on the ex-date after the deduction of applicable withholding taxes.

In the event there are no regular cash dividends on the ex-date, the daily performance of all three indices will be identical.

For a complete list of indices available, please refer to the daily index levels file (".SDL").

For more information on the classification of regular versus special cash dividends as well as the tax rates used in the calculation of net return, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology.

For more information on the calculation of return types, please refer to S&P Dow Jones Indices' Index Mathematics Methodology.

Index Governance

Index Committee

An S&P Dow Jones Indices Index Committee maintains the indices. 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 indices to the market, companies that are being considered as candidates for addition to the indices, and any significant market events. In addition, the Index 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 Index 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 document.

Index Policy

Announcements

All index constituents are evaluated daily for data needed to calculate index levels and returns. All events affecting the daily index calculation are typically announced in advance via the Index Corporate Events report (.SDE), delivered daily to all clients. Any unusual treatment of a corporate action or short notice of an event may be communicated via email to clients.

For more information, please refer to the Announcements section of S&P Dow Jones Indices' Equity Indices Policies & Practices document.

Pro-forma Files

In addition to the corporate events file (.SDE), S&P Dow Jones Indices provides constituent pro-forma files each time the index rebalances. The pro-forma file is typically provided daily in advance of the rebalancing date and contains all constituents as well as their corresponding weights and index shares effective for the upcoming rebalancing. Since index shares are assigned based on prices prior to the rebalancing, the actual weight of each stock at the rebalancing differs from these weights due to market movements.

Please visit www.spglobal/spdji.com for a complete schedule of rebalancing timelines and pro-forma delivery times.

Holiday Schedule

The index is calculated daily, throughout the calendar year, when the U.S. equity markets are open.

A complete holiday schedule for the year is available on S&P Dow Jones Indices' Web site at www.spglobal.com/spdji.

Rebalancing

The Index Committee may change the date of a given rebalancing for reasons including market holidays occurring on or around 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.

Real-Time Calculation

Real-time, intra-day, index calculations are executed for some versions of the index, whenever the index's primary exchanges are open. Real-time indices are not restated.

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.spglobal.com/spdji, 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 the [S&P DJI Methodology & Regulatory Status Database](#) for a complete list of indices covered by this document.

| Index | Return Type | Bloomberg | Refinitiv |
|-----------------------------------------------------------------------------------------------|------------------|-----------|-----------|
| S&P 500 Quality, Value & Momentum Multi-factor Index (USD) | Price Return | SPXQVMUP | -- |
| | Total Return | SPXQVMUT | -- |
| | Net Total Return | SPXQVMUN | .SPXQVMUN |
| S&P 500 Quality, Value & Momentum Multi-factor Index (CAD) | Price Return | SPXQVMCP | -- |
| | Total Return | SPXQVMCT | -- |
| | Net Total Return | SPXQVMCN | -- |
| S&P 500 Quality, Value & Momentum Multi-factor Index (GBP) | Price Return | SPXQVMGP | -- |
| | Total Return | SPXQVMGT | -- |
| | Net Total Return | SPXQVMGN | -- |
| S&P 500 Quality, Value & Momentum Multi-factor Index (EUR) | Price Return | SPXQVMEP | -- |
| | Total Return | SPXQVMET | -- |
| | Net Total Return | SPXQVMEN | -- |
| S&P Europe 350 Quality, Value & Momentum Multi-factor Index (USD) | Price Return | -- | -- |
| | Total Return | -- | -- |
| | Net Total Return | -- | -- |
| S&P GCC Composite Quality, Value & Momentum Multi-factor Index (USD) | Price Return | -- | -- |
| | Total Return | SPCQVMUT | -- |
| | Net Total Return | -- | -- |
| S&P Saudi Arabia Quality, Value & Momentum Multi-factor Index (USD) | Price Return | -- | -- |
| | Total Return | SPSDQVST | -- |
| | Net Total Return | -- | -- |
| S&P Saudi Arabia Shariah Quality, Value & Momentum Multi-factor Index (USD) | Price Return | -- | -- |
| | Total Return | SPSSQVST | -- |
| | Net Total Return | -- | -- |
| S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-factor Index (USD) | Price Return | SPPQVMUP | -- |
| | Total Return | SPPQVMUT | -- |
| | Net Total Return | SPPQVMUN | -- |
| S&P GCC Composite Quality, Value & Momentum Multi-Factor Shariah Index (USD) | Price Return | SPGMSHUP | -- |
| | Total Return | SPGMSHUT | -- |
| | Net Total Return | SPGMSHUN | -- |
| S&P Pan Arab Composite LargeMidCap Quality, Value & Momentum Multi-Factor Shariah Index (USD) | Price Return | SPPSMVUP | -- |
| | Total Return | SPPSMVUT | -- |
| | Net Total Return | SPPSMVUN | -- |
| S&P 500 Quality, Value, & Momentum Top 90% Multi-Factor Index (USD) | Price Return | SPDLQVUP | .SPDLQVUP |
| | Total Return | SPDLQVUT | .SPDLQVUT |
| | Net Total Return | SPDLQVUN | .SPDLQVUN |
| S&P MidCap 400 Quality, Value, & Momentum Top 90% Multi-Factor Index (USD) | Price Return | SPDMQVUP | .SPDMQVUP |
| | Total Return | SPDMQVUT | .SPDMQVUT |
| | Net Total Return | SPDMQVUN | .SPDMQVUN |
| S&P SmallCap 600 Quality, Value, & Momentum Top 90% Multi-Factor Index (USD) | Price Return | SPDSQVUP | .SPDSQVUP |
| | Total Return | SPDSQVUT | .SPDSQVUT |
| | Net Total Return | SPDSQVUN | .SPDSQVUN |

Index Data

Daily constituent and index level data are available via subscription.

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

Web Site

For further information, please refer to S&P Dow Jones Indices' Web site at www.spglobal.com/spdji.

Appendix I

Liquidity Weight Computation

The liquidity weight of a given stock is defined as:

$$lw_i = \frac{l'_i}{\sum_1^N l'_j}$$

where:

N = number of selected stocks

l'_i = capped stock liquidity

To maintain optimization stability the liquidity of a given stock is capped as follows:

$$l'_i = \text{MIN} (l_i , 20 \times \text{MinLB})$$

where:

l_i = stock liquidity

MinLB = minimum liquidity of selected stocks

Appendix II

Methodology Changes

Methodology changes since January 30, 2017, are as follows:

| Change | Effective Date (After Close) | Previous | Methodology Updated |
|------------------------|---------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Constituent Selection: | 09/16/2022 | Quality, value, and momentum z-scores are computed independently in each component region for each of the stocks that satisfy the criteria as detailed in the <i>Eligibility Criteria</i> . | Quality, value, and momentum z-scores are computed independently in each component region for each of the stocks that satisfy the criteria as detailed in the <i>Eligibility Criteria</i> . If the underlying earnings per share (EPS) or book value per share (BVPS) for a given stock's return on equity (ROE) is negative, a quality z-score will be calculated but the stock will be ineligible for index inclusion. For the S&P Quality, Value, & Momentum Top 90% Multi-Factor Indices, if the underlying EPS or BVPS for a given stock's ROE is negative, a quality z-score will be calculated, and it will be eligible for index inclusion. |

Disclaimer

Performance Disclosure/Back-Tested Data

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Please refer to the methodology for the Index for more details about the index, including the manner in which it is rebalanced, the timing of such rebalancing, criteria for additions and deletions, as well as all index calculations.

Information presented prior to an index’s launch date is hypothetical back-tested performance, not actual performance, and is based on the index methodology in effect on the launch date. However, when creating back-tested history for periods of market anomalies or other periods that do not reflect the general current market environment, index methodology rules may be relaxed to capture a large enough universe of securities to simulate the target market the index is designed to measure or strategy the index is designed to capture. For example, market capitalization and liquidity thresholds may be reduced. In addition, forks have not been factored into the back-test data with respect to the S&P Cryptocurrency Indices. For the S&P Cryptocurrency Top 5 & 10 Equal Weight Indices, the custody element of the methodology was not considered; the back-test history is based on the index constituents that meet the custody element as of the Launch Date. Back-tested performance reflects application of an index methodology and selection of index constituents with the benefit of hindsight and knowledge of factors that may have positively affected its performance, cannot account for all financial risk that may affect results and may be considered to reflect survivor/look ahead bias. Actual returns may differ significantly from, and be lower than, back-tested returns. Past performance is not an indication or guarantee of future results.

Typically, when S&P DJI creates back-tested index data, S&P DJI uses actual historical constituent-level data (e.g., historical price, market capitalization, and corporate action data) in its calculations. As ESG investing is still in early stages of development, certain datapoints used to calculate certain ESG indices may not be available for the entire desired period of back-tested history. The same data availability issue could be true for other indices as well. In cases when actual data is not available for all relevant historical periods, S&P DJI may employ a process of using “Backward Data Assumption” (or pulling back) of ESG data for the calculation of back-tested historical performance. “Backward Data Assumption” is a process that applies the earliest actual live data point available for an index constituent company to all prior historical instances in the index performance. For example, Backward Data Assumption inherently assumes that companies currently not involved in a specific business activity (also known as “product involvement”) were never involved historically and similarly also assumes that companies currently involved in a specific business activity were involved historically too. The Backward Data Assumption allows the hypothetical back-test to be extended over more historical years than would be feasible using only actual data. For more information on “Backward Data Assumption” please refer to the FAQ. The methodology and factsheets of any index that employs backward assumption in the back-tested history will explicitly state so. The methodology will include an Appendix with a table setting forth the specific

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