

**S&P Dividend and Free Cash
Flow Yield Index Series**
Methodology

August 2018

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Introduction

Index Objective & Highlights

The S&P Dividend and Free Cash Flow Yield Indices measure the performance of stocks that exhibit both high dividend yield and cash flow yield characteristics, while maintaining diversified sector and country representation according to each index's eligibility criteria. The indices are equally-weighted and rebalanced semi-annually.

Index Family

The index family includes the following:

- S&P 500 Dividend and Free Cash Flow Yield Index
- S&P Emerging Markets Dividend and Free Cash Flow Yield Index
- S&P Developed Ex-U.S. Dividend and Free Cash Flow Yield 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 Universe

The starting universe for each index is as follows:

Index	Universe
S&P 500 Dividend and Free Cash Flow Yield Index	S&P 500
S&P Emerging Markets Dividend and Free Cash Flow Yield Index	S&P Emerging Plus LargeMidCap
S&P Developed Ex-U.S. Dividend and Free Cash Flow Yield Index	S&P Developed BMI Ex-U.S. & Korea LargeMidCap

Eligibility Factors

At each semi-annual rebalancing, a company in the starting universe is eligible for an index if it meets the following requirements as of the rebalancing reference date:

- Has a positive dividend yield.
- Has a positive free cash flow yield.

Multiple Share Classes. Each company is represented once by the listing with the highest dividend yield subject to meeting the eligibility criteria. In the event multiple lines meet the eligibility criteria and have similar dividend yields, the Designated Listing is selected. For more information regarding the treatment of multiple share classes, please refer to Approach C within the Multiple Share Classes section of the S&P Dow Jones Indices' Equity Indices Policies & Practices document.

Stocks in the starting universe that satisfy the above criteria form the selection universe.

S&P Emerging Markets Dividend and Free Cash Flow Yield Index. The index applies additional criteria to the starting universe, as defined below:

- **Market Capitalization.** Constituents must have a minimum float- adjusted market capitalization of US\$ 300 million.
- **Liquidity.** Constituents must have a minimum three months median daily value traded (MDVT) of US\$ 1 million.

S&P Developed Ex-U.S. Dividend and Free Cash Flow Yield Index. The index applies additional criteria to the starting universe, as defined below:

- **Market Capitalization.** Constituents must have a minimum float- adjusted market capitalization of US\$ 1 billion.
- **Liquidity.** Constituents must have a minimum three months median daily value traded (MDVT) of US\$ 5 million.

Stocks in the starting universe that satisfy all the eligibility criteria form the selection universe.

Index Construction

Constituent Selection

The selection of index constituents is done as follows:

1. For all stocks in the selection universe, a stock's dividend yield and free cash flow yield scores are calculated. Trailing 12-month dividend yield is used for all markets with the exception of the U.S., which uses indicated annual dividend yield. Trailing 12-month free cash flow yield is used for all markets.
2. Calculate the z-score for both the dividend yield and free cash flow yield (fundamental variables). The product of the dividend yield score and free cash flow yield score is a stock's Final Score.
3. Constituents are ranked in descending order based on their final score. The top five stocks are selected from each Global Industry Classification Standard (GICS) sector. If a sector does not have five eligible stocks, all eligible stocks from that sector are selected.
 - **S&P Emerging Markets Dividend and Free Cash Flow Yield Index and S&P Developed Ex-U.S. Dividend and Free Cash Flow Yield Index.** To reduce market concentration the index caps the number of stocks per country at 13.

For more details on the yields, winsorization, and z-score calculations, please see the Appendix.

Buffer Rule

The indices employ a buffer rule to reduce index turnover. The buffer rule is applied as described below:

1. Stocks are ranked based on final score and those ranked within the top four of each GICS sector are automatically chosen for index inclusion.
2. Current constituents that fall within the top six of each GICS sector are chosen for index inclusion in order of their final score until the constituent count reaches five.
3. If at this point the target five stock count for each GICS Sector has not been met, the remaining stocks are chosen based on their final score.

S&P Dow Jones Indices believes turnover in index membership should be avoided when possible. At times a company may appear to temporarily violate one or more of the addition criteria. However, the addition criteria are for addition to an index, not for continued membership.

Constituent Weighting

The indices are equally weighted.

Dividend Payment Types

S&P Dow Jones Indices only considers cash dividend payments declared as regular by the paying company for index eligibility, selection, and weighting purposes. Cash dividend payments declared as special by the paying company, including recurring special cash dividends, are not considered. For both eligibility and weighting purposes, annualized cash dividend amounts, before withholding tax, are used.

Index Calculations

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

For more information on the equal weighting and index calculation methodology, please refer to S&P Dow Jones Indices' Index Mathematics Methodology.

Index Maintenance

Rebalancing

The indices are rebalanced semi-annually, with changes effective after the close of the last business day of January and July. The rebalancing reference date is after the close of the last business day of December and June, respectively. Stocks are equally-weighted and assigned index shares using the closing prices as of five business days prior to the last business day of the rebalancing month as the reference price.

Additions. Except for spins-offs, there are no intra-rebalancing additions to the indices.

Deletions. Constituents removed from an index intra-rebalancing due to corporate actions or delistings are not replaced until the following semi-annual rebalancing. Additionally, constituents removed from the universe index are removed from the S&P 500 Dividend and Free Cash Flow Yield Index simultaneously, while universe drops will be removed from the S&P Emerging Markets Dividend and Free Cash Flow Yield Index and S&P Developed Ex-U.S. Dividend and Free Cash Flow Yield Index at the following semi-annual rebalancing.

Corporate Actions

Corporate Action	Adjustment Made to Index	Divisor Adjustment?
Spin-Off	Spin-offs are added to the index on the ex-date. If the spin-off remains in the underlying index, both the parent company and spin-off remain in the index until the next index rebalancing, provided that each gives an indication it will continue and/or initiate a consistent dividend paying policy. If the spin-off does not indicate it will continue and/or initiate a consistent dividend paying policy, it is removed from the index after the first day of regular way trading, with the proceeds being reinvested back into the parent.	No
Rights Offering	The price is adjusted to the Price of the Parent Company minus (the Price of the Rights Offering/Rights Ratio). Index shares change so that the company's weight remains the same as its weight before the rights offering.	No
Stock Split	Index shares are multiplied by and price is divided by the split factor.	No
Share Issuance or Share Repurchase	None. Actual shares outstanding of the company play no role in the daily index calculation.	No
Special Dividends	The price of the stock making the special dividend payment is reduced by the per share special dividend amount after the close of trading on the day before the dividend ex-date.	Yes
Delisting, acquisition or any other corporate action resulting in the deletion of the stock from the underlying index.	The stock is dropped from the index. This causes the weights of the rest of the stocks in the index to change proportionately.	Yes

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

Other Adjustments

In cases where there is no achievable market price for a stock being deleted, it can be removed at a zero or minimal price at the Index Committee's discretion, in recognition of the constraints faced by investors in trading bankrupt or suspended stocks.

At the discretion of S&P Dow Jones Indices, a company may be removed at a semi-annual rebalancing if S&P Dow Jones Indices determines the company has reduced its calendar year dividend amount and will no longer qualify for the index at the subsequent reconstitution.

Currency, Currency Hedged, and Risk Control Indices

The indices are calculated in U.S. dollars.

Currency, currency hedged, and risk control versions of the indices may be available. For a list of available currency, currency hedged, and risk control indices, please contact Client Services at index_services@spglobal.com.

For more information on currency, currency hedged, and risk control indices, please refer to S&P Dow Jones Indices' Index Mathematics Methodology.

Base Date and History Availability

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 Dividend and Free Cash Flow Yield Index	10/02/2017	07/31/1990	07/31/1990	100
S&P Emerging Markets Dividend and Free Cash Flow Yield Index	10/02/2017	01/31/2000	01/31/2000	100
S&P Developed Ex-U.S. Dividend and Free Cash Flow Yield Index	8/20/2018	7/31/1995	7/31/1995	100

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 document.

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

Index Governance

Index Committee

The indices are maintained by the Americas Thematic and Strategy Indices Index Committee and the Global Thematic and Strategy Indices Index Committee. At each meeting, the Index Committees review 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 an index, 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 via ftp to all clients. Any unusual treatment of a corporate action or short notice of an event may be communicated via email to clients.

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 and their corresponding weights and index shares effective for the upcoming rebalancing. Since index shares are assigned based on prices five business days prior to the rebalancing, the actual weight of each stock at the rebalancing differs from these weights due to market movements.

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

Holiday Schedule

The indices are calculated all business days of the year when the equity market is open. The only days the indices are not calculated are on days when all exchanges where an index's constituents are listed are officially closed.

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

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 document.

Recalculation Policy

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

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

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 currency, currency hedged, risk control, and return type versions of the below indices that may exist are also covered by this document. Please contact index_services@spglobal.com for a complete list of indices covered by this document.

Index	Return Type	Bloomberg	Reuters
S&P 500 Dividend and Free Cash Flow Yield Index	Price Return	SPDV5UP	.SPDV5UP
	Total Return	SPDV5UT	.SPDV5UT
	Net Total Return	SPDV5UN	.SPDV5UN
S&P Emerging Markets Dividend and Free Cash Flow Yield Index	Price Return	SPEMDVUP	.SPEMDVUP
	Total Return	SPEMDVUT	.SPEMDVUT
	Net Total Return	SPEMDVUN	.SPEMDVUN
S&P Developed Ex-U.S. Dividend and Free Cash Flow Yield Index	Price Return	SPDUDFUP	.SPDUDFUP
	Total Return	SPDUDFUT	.SPDUDFUT
	Net Total Return	SPDUDFUN	.SPDUDFUN

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

Dividend Yield and Free Cash Flow Yield Score Calculation

Dividend yield and free cash flow yield scores are calculated as follows:

1. Outlier Handling and Winsorization:
 - For a given fundamental variable (both dividend yield and free cash flow yield), the values of all the securities are first ranked in ascending order. Then, for securities that lie above the 97.5 percentile rank or below the 2.5 percentile rank, their value is set as equal to the value of the 97.5 percentile ranked or the 2.5 percentile ranked security, whichever is applicable.
2. Fundamental Variable Z-Score:
 - The z-score for each of the fundamental variables for each security is calculated using the mean and standard deviation of the relevant variable within each of the index universes.
3. Final Score:
 - The dividend yield and free cash flow yield z-scores are mapped to cumulative normal distribution as dividend yield score and free cash flow yield score, in the range of 0 to 1. Each security's final score is the product of the dividend yield score and free cash flow yield score.

Fundamental Ratios Calculation

Indicated Dividend Yield = Indicated Annual Dividend / Stock Price.

Trailing Dividend Yield = Last 12-month Dividends / Stock Price.

Free Cash Flow Yield = Free Cash Flow per Share / Stock Price

Free Cash Flow = Net cash from operating activities – capital expenditures for fixed assets

Outlier Handling and Winsorization. Outlier fundamental ratios are winsorized to ensure that the average values used to calculate the final score are less distorted by extreme values.

Z-score Computation. After winsorizing dividend yield and free cash flow yield, the z-score for each of the two ratios for each security is calculated using the mean and standard deviation of the relevant variable within each of the index universes.

The z-score is calculated as follows:

$$z_{\alpha} = (x_{\alpha} - \mu_{\alpha}) / \sigma_{\alpha}$$

where:

z_{α} = Z-score for a given security.

x_{α} = Winsorized variable for a given security.

μ_{α} = Arithmetic mean of the winsorized variable in the selection universe, excluding any missing values.

σ_{α} = Standard deviation of the winsorized variable in the selection universe.

Appendix II

Methodology Changes

Methodology changes since January 1, 2015 are as follows:

Change	Effective Date (After Close)	Methodology	
		Previous	Updated
Consideration of recurring special cash dividends for eligibility, selection, and weighting purposes	03/30/2018	Recurring special cash dividends that S&P Dow Jones Indices considers to be part of the normal payment pattern established by the company are considered regular for eligibility, selection, and weighting purposes.	S&P Dow Jones Indices only considers cash dividend payments declared as regular by the paying company for index eligibility, selection, and weighting purposes. Cash dividend payments declared as special by the paying company, including recurring special cash dividends, are not considered.

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