Ossiam Emerging Markets Minimum Variance Index Series
Methodology

June 2021

Table of Contents

Introduction

Index Objective

The Ossiam Emerging Markets Minimum Variance Index is a rules-based index that measures the performance of the most liquid stocks using a dynamic selection of the largest stocks from the S&P/IFCI Index (the "Reference Benchmark Index"). Index constituents are selected using an optimization procedure and weighted in such a way to minimize the volatility of the index while maintaining a high level of diversification in terms of stocks, sectors and countries, as described under Index Construction.

The indices governed by this methodology document ("**Methodology**") are administered and calculated by S&P DJI Netherlands B.V. (a subsidiary of S&P Dow Jones Indices LLC) ("**S&P DJI**" or the "**Index Administrator**"). Any changes to or deviations from this Methodology shall be made in the sole judgment and discretion of S&P DJI. The index owner is Ossiam.

The Ossiam Emerging Markets Minimum Variance Index Series was created and launched by Ossiam on 24 January 2012. From the launch of the Index Series until 1 June 2020, the Index Series was administered and governed by Ossiam. S&P DJI assumed oversight and administration of the Index Series on behalf of Ossiam on 2 June 2020

Index Family and Highlights

The index series also include the following sub-indices:

- The Ossiam Emerging Markets Latin America Minimum Variance is a sub-index of the Ossiam Emerging Markets Minimum Variance Index, measuring only the performance of constituents from the LATAM region as per S&P DJI's classification for the S&P/IFCI index.
- The Ossiam Emerging Markets Asia Minimum Variance is a sub-index of the Ossiam Emerging Markets Minimum Variance Index, measuring only the performance of constituents from the Asia region as per the S&P DJI's classification for the S&P/IFCI index

If there are no stocks from the relevant region for any of the sub-indices following a Rebalancing Date, the relevant sub-index level will remain at the last available level for the Index unless impacted by any corporate action and until the next rebalancing where stocks from the relevant region become available.

The indices rebalance semi-annually, as of the close on the 3rd Friday of March and September, or if such Friday is not an Index Business Day, the immediately following Index Business Day.

At each Rebalancing Date, the universe of eligible stocks is a selection of the most liquid stocks (based on their recent average daily traded amounts on their respective primary exchange) among the largest companies (in terms of free float market capitalization) in the Reference Benchmark Index as further detailed under Eligibility Criteria.

The optimization procedure uses statistical inputs, such as estimates of the historical volatility of eligible stocks and their degree of correlation, and seeks to minimize the expected volatility of the index. The resulting index composition must comply with the following constraints (at the time of rebalance):

- the full index value must be invested in index constituents,
- the maximum exposure to a single stock shall not exceed 3.50% of the current value of the Index,
- the maximum exposure to an industry sector shall not exceed 20% of the current value of the Index,
- the maximum exposure to a country shall not exceed 20% of the current value of the Index except for India; India's maximum exposure shall not exceed 15%[1] of the current value of the Index,
- a dispersion method ensures that a significant number of stocks are included in the Index.

The index can also be reweighted on a monthly basis in case India's country weight is above 18%, this is observed as of the 2nd Friday of each month (if it is not an Index Business Day, the following Index Business Day) and effective if applicable as of the close of the 3rd Friday of such month, or if such Friday is not an Index Business Day, the immediately following Index Business Day.

Summary Description

Index Owner: Ossiam, doing business as Ossiam ("Ossiam")

Index Administrator & Calculation Agent: S&P DJI Netherlands B.V. ("S&P DJI")

Index Calculation and Publication: The Index level is calculated on each Index Business Day (subject to Index Policy) and published as soon as reasonably practicable thereafter.

Supporting Documents

This Methodology is intended to be read in conjunction with supporting documentation that helps provide 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, are set forth below:

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

[1] The India country weight cap has been made to allow the index to be both physically and synthetically replicated by Index users

Eligibility Criteria

Eligibility Factors

The universe of constituents for the Index is the current composition of the S&P/IFCI index as of the Observation Date for the March rebalance, and the pro-forma composition of the S&P/IFCI index as of the Observation Date for the September rebalance provided this data is available on the Observation Date.

Table1

Index	Reference Benchmark Index	Ccy	Index Calendar
Ossiam Emerging Markets Minimum Variance Index	S&P/IFCI index	USD	Bombay stock exchange (India) + Hong Kong Stocks Exchange (Hong Kong) + Taiwan Stocks Exchange (Taiwan) + Shanghai Stocks Exchange (China) + Shenzhen Stocks Exchange (China) + Korean Exchange (South Korea) + B3 Stock Exchange (Brazil)

For a stock to be eligible for selection for an Index, it must be a component stock of the relevant Reference Benchmark Index on the applicable Observation Date as detailed under Index Construction.

Additionally, constituents must meet the following criteria for inclusion into an index.

Capacity filter

The constituents of the S&P/IFCI index are filtered by their free-float market capitalization, and only the largest stocks that cumulatively represent W% of the S&P/IFCI free-float market capitalization are selected.

At each Observation Date the selection of index constituents is updated, applying the buffer rule to induce major stability in the capacity selection. According to the buffer rule, the stocks that are located in between the W% and (W+U)% of free-float market capitalization, and that were among the W% largest stocks at the previous Observation Date, are also selected using the capacity filter.

Multiple Listings

If there are multiple shares of the same company present in the selection of the capacity filter, only the most liquid share class or listing for each company is retained (the liquidity is estimated by the Average Daily Volume as will be described below).

Liquidity filter

Only the most liquid stocks, once the capacity filter is applied are selected. For this purpose, a liquidity filter is designed, that works in the following way:

a) liquidity is estimated for each stock, using most recent transaction volume data. Average Daily Volume is calculated as a simple average of daily transaction volume series over the past Tv Index Business days

$$ADV^i = \frac{1}{Tv - NVD_i} \sum_{t=T-Tv+1}^{T} V_t^i * P_t^i * C_t^i$$

Where,

T denotes Observation Date T,

V_t^i is volume in number of shares for stock i on Index Business Day t

P_t^i is stock price in the stock i's home currency on Index Business Day t

C_t^i is the relevant exchange rate for stock i against USD on Index Business Day t.

NVD_i is the number of Index Business Days among Tv where $V_t^i * P_t^i * C_t^i$ is equal to zero or NA

Also, If a stock has more than p% missing volume observations during the liquidity estimation period, it is assigned a zero ADV.

b) the stocks from the selection are ranked by their ADV in descending order,

c) the first M stocks having the highest liquidity are selected,

d) A buffer rule is applied: the stocks ranked from M+1 to M+B are selected if and only if they were among the M most liquid stocks on the previous Observation date. This buffer helps to avoid some of the turnover associated with the exclusion of the stocks that were among the most liquid and are likely to re-integrate the most liquid selection in the future.

The liquidity filter is applied on each Observation Date before new optimized weights are calculated and the Index is rebalanced.

Index Construction

Data

The following data is used in the Index construction process:

- F – free-float market capitalization of the stocks at market close on the Observation Dates,

- P - daily share prices at market close,

- TR – daily share total return price. The total return price is adjusted for corporate actions and dividend payments,

- V - daily transaction volume from the respective stock exchanges,

- PC – daily levels of country S&P/IFCI indices,

- C - end-of-day foreign exchange rates against USD, corresponding to 16.00 London time (UTC),

- classification of the stocks in S&P/IFCI by industrial sector corresponding to the level 1 of the GICS classification, currently there are 11 industries:

  - o Energy
  - o Materials
  - o Industrials
  - o Consumer Discretionary
  - o Consumer Staples
  - o Health Care
  - o Financials
  - o Information Technology
  - o Telecommunication Services
  - o Utilities
  - o Real estate

- classification of the stocks in S&P/IFCI by country corresponding to the domicile country of the company

Rebalancing Dates, Observation Dates and Reference Dates

- The **"Observation Date"** as of the close of trading on the Monday before the 2nd Friday of the rebalancing month. If such Monday is not an Index Business Day, it will be the immediately following Index Business Day

- The **"Rebalancing Reference Date"** or **"Reference Date"** for weighting occurs as of the close of the Monday before the 3rd Friday of the rebalancing month. If such Monday is not an Index Business Day, it will be the immediately following Index Business Day.

- The **"Rebalancing Effective Date"** or **"Rebalancing Date"** is after the close of the third Friday of March and September, or if such Friday is not an Index Business Day, the immediately following Index Business Day.

Portfolio Construction

Index constituents are weighted by an optimization procedure, aimed at minimizing portfolio variance under constraints.

Return Data

The optimization procedure starts by calculating daily arithmetic price returns for each stock i:

$$r_t^i = \frac{TR_t^i * C_t}{TR_{t-1}^i * C_{t-1}} - 1$$

Where,

(t-1) denotes the previous Index Business Day to Index Business Day t,
TR are total return close prices.

Variance Estimation

The covariance is estimated over the period of Ts Index Business Days.

Missing data filter

The stocks that have more than q% of missing price observations inside the covariance estimation period will be dropped from the selection. The stocks having an acceptable proportion of missing price observation will be kept in the selection, after filling the missing prices with the "previous" price levels (i.e. the prices from the observation just before the missing ones).

Constant price filter

If stock prices remain constant across several Index Business Days, this will lead to null daily returns. The stocks having a proportion of null daily returns that is bigger than Z% of the total daily return observations inside the covariance estimation period will be dropped from the selection.

Covariance Estimation

For all the stocks admitted to the optimization step a variance-covariance matrix is estimated as follows:

$$\Sigma_T^{i,j} = \frac{1}{Ts-1} \sum_{t=T-Ts+1}^{T} (r_t^i - \bar{r}^i)(r_t^j - \bar{r}^j)$$

Where,

N is the number of stocks admitted for optimization,

$\bar{r}^{\,i}$ denotes the average return of the stock i over the period between T-Ts+1 and T.

To account for the asynchronicity of the return time series, the matrix Σ is subsequently adjusted to include the effect of 1-day lag autocorrelations and lead-lag correlations among stocks trading in different time zones. We introduce the daily return of the Country Indices (denominated in USD) and calculated on each Index Business Day t:

$$r_{C,t}^{k} = \frac{PC_t^k * C_t}{PC_{t-1}^k * C_{t-1}} - 1$$

Where, k labels the countries.

The country variance-covariance matrix is:

$$\Sigma_{C,T}^{k,l} = \frac{1}{Ts-1} \sum_{t=T-Ts+1}^{T} (r_{C,t}^{k} - \bar{r}_C^{\,k})(r_{C,t}^{l} - \bar{r}_C^{\,l})$$

Where:

$\bar{r}_C^{\,k}$ denotes the average return of the country k over the period between T-Ts+1 and T

$\bar{r}_C^{\,l}$ denotes the average return of the country l over the period between T-Ts+1 and T

The country "lead-lag" variance-covariance matrix :

$$\Sigma_{C,T,Lead-Lag}^{k,l} = \frac{1}{Ts-2} \sum_{t=T-Ts+2}^{T} (r_{C,t}^{k} - \bar{r}_{C,1}^{\,k})(r_{C,t-1}^{l} - \bar{r}_{C,1}^{\,l})$$

Where:

$\bar{r}_{C,1}^{\,k}$ denotes the average return of the country k over the period between T-Ts+2 and T

$\bar{r}_{C,1}^{\,l}$ denotes the average return of the country l over the period between T-Ts+1 and T-1

Finally, the adjusted stock covariance matrix is defined as:

$$\hat{\Sigma}_T^{i,j} = \Sigma_T^{i,j} + \frac{2}{3} \sqrt{\frac{\Sigma_T^{i,i} * \Sigma_T^{j,j}}{\Sigma_{C,T}^{C(i),C(i)} * \Sigma_{C,T}^{C(j),C(j)}}} * (\Sigma_{C,T,Lead-Lag}^{C(i),C(j)} + \Sigma_{C,T,Lead-Lag}^{C(j),C(i)})$$

Where, C(i) (resp.C(j)) is the country of domicile of stock i (resp.stock j)

The adjustment corresponds to a reconstruction of 3-day covariance matrix from 1-day covariance matrix under assumption that the autocovariance and lead-lag covariance structure for the stocks is driven only by the autocorrelations and lead-lag relationships among country indices.

Optimization: objective function

The function to be minimized is the variance of the Index portfolio:

$$\sigma_{Ind}^2 = \sum_{i=1}^{M} \sum_{j=1}^{M} w_i \hat{\Sigma}_{ij} w_j$$

Optimization: constraints

The optimization is subject to the following constraints:

1. 100% leverage constraint: $\sum_{i=1}^{M} w_i = 1$

2. long-only constraint: $w_i \geq 0$, for all i

3. maximal weight constraint: $w_i \leq w_{max}$

4. maximal sector exposure constraint: $w_S \leq S_{max}$
   where $w_S = \sum_{i \in S} w_i$, is net exposure to the sector S.

5. maximal country exposure: $w_C \leq C_{max}$
   where $w_C = \sum_{i \in C} w_i$, is net exposure to the country C.

6. diversification target: $\sum_{i=1}^{M} w_i^2 = \frac{1}{H}$

Optimization: numerical algorithm

The optimization problem is a quadratic constrained minimization problem. It is solved numerically, using an interior-point algorithm. This algorithm calculates an iterative sequence of approximate minimization problems, where inequality constraints are transformed into equality constraints using slack variables. The optimal solution is defined with the help of the following convergence criteria:

1. TolFun - termination tolerance on the function value,
2. TolCon - tolerance on the constraints violations
3. MaxIter - maximal number of iterations allowed

if the optimization still fails, increments of 1% are added to both sector & country constraint limits until a feasible solution is achieved

Rounding issues

Input data to the optimization, as well as all intermediate calculations, are not rounded.

The optimized weights that are smaller than wtol (i.e. that are essentially zero) are rounded to exact zero. To distribute the cumulative weight of the excluded stocks, an optimization as described in the sections above is repeated only for the stocks that remain in the portfolio after the rounding cut-off with an additional minimal weight constraint of $w_i \geq \boldsymbol{wtol}$.

Index Maintenance

Index Calculations

The indices are calculated using a divisor methodology. Index calculations include price series, total return series, and net total return series.

The indices are calculated using S&P DJI's modified market cap weighted methodology. A modified market cap weighted index is one where index constituents have a user-defined index weight. Each stock's weight is based on the optimized weight and is calculated as described under the Index Construction section.

Please refer to S&P DJI's Index Mathematics Methodology for further details on the modified market cap methodology.

Rebalancing

Rebalancing takes place on a semiannual basis, on each Rebalancing Date. The Rebalancing Date is as of the close of the third Friday of March and September, or if such Friday is not an Index Business Day, the immediately following Index Business Day. The new index composition becomes effective at the opening of the next Index Business Day after the Rebalancing Date.

Before November 2008, the rebalancing took place on a semiannually basis on the third Friday of May and November.

The optimal weights are calculated after the market close on the Observation Date.

The Observation Date is defined as of the close of trading on the Monday before the 2nd Friday of the rebalancing month. If such Monday is not an Index Business Day, it will be the immediately following index Business Day.

Stocks are assigned index shares and rebalance weights using the closing prices as of the Reference Date (as of the close of the Monday before the 3rd Friday of the rebalancing month, unless such Monday is not an Index Business Day, it will be the immediately following Index Business Day). Since index shares are assigned based on prices four (4) business days prior to the rebalancing, the actual weight of each stock at the rebalancing differs from the target weights due to market movements.

Pro-forma files will start from the Reference Date.

Monthly Reweighting

Outside of the Rebalancing months, the index can also be reweighted on a monthly basis in case India's country weight is above 18%, this is observed as of the 2nd Friday of each month, or If such Friday is not an Index Business Day, it will be the immediately following index Business Day. and effective if applicable

as of the close of the 3rd Friday of such month, or if such Friday is not an Index Business Day, the immediately following Index Business Day.

If a reweighting takes place, the weight of India is reset to 15% and the excess weight is redistributed pro-rata across the rest of the index.

Index shares will be calculated using the closing prices as of the Reweighting Reference Date (i.e: as of the close of the Monday before the 3rd Friday of the reweighting month, unless such Monday is not an Index Business Day, it will be the immediately following Index Business Day).

If a reweighting takes place in a month, Pro-forma files will start from the Reweighting Reference Date of such month.

Additions and Deletions

Except for spin-offs, companies can only be added to an index during the rebalancing. Between Rebalancing Dates, deletions can occur due to acquisitions, mergers and spin-offs, or due to bankruptcies or suspensions. As the indices do not have a fixed number of constituents, additions to and deletions from an index may not be equal in number.

Corporate Actions

Between two Rebalancing Dates the maintenance of index constituents is based on the following principle: all share and price adjustments that do not alter the membership of stocks in the universe or their risk characteristics do not lead to changes in the index value or composition. The section below details the maintenance rules for the most common corporate actions. If not explicitly mentioned in this document, index maintenance will follow the same principles as those for the Reference Benchmark Index.

Corporate Action	Adjustment Made to Index	Divisor Adjustment?
Stock Split, Forward/Reverse	Market capital neutral treatment, share change offset by price adjustment	No
IWF Change	IWF changes do not affect index market capitalization as the AWF will adjust to negate any IWF changes	No
Share Issuance	Share changes do not affect index market capitalization as the AWF will adjust to negate any share changes	No
Rights Offering	If the rights are in the money, the spot price of the underlying security will be adjusted after market close of the day prior to the exDate and the index shares of the underlying security will adjust to offset the price adjustment thus making the event a market cap neutral event.	No
Special Dividend	Price adjustment will be applied on ex-date -1	Yes
Delisting	The delisted security will be deleted from the index (at either the last traded price of a zero price).	Yes

		Delete Spin-off [Divisor Change]
Spin-off	S&P DJI's standard practice adopts a zero price spin off treatment. No Price Adjustment is applied to the parent, the spinoff company is added to the index at price of zero and at the terms of the spinoff, meaning it is marketcap neutral on the Ex-date (no divisor change). If the spun-offs are not added to the index, the spun-off company is dropped at the close of business on the ex-date (or after the first date the stock trades in the regular way) which will trigger a divisor change due to the deletion.	Delete Spin-off [Divisor Change]
M&A (constituent acquired for cash)	The acquired company is deleted from the index.	Yes
M&A (constituent acquired by another constituent for stock and or cash and stock)	The acquired company is deleted from the index. The shares outstanding and IWF of the acquirer will be adjusted with respect to the stock terms of the acquisition.	Yes

For more information on Corporate Actions, please refer to S&P DJI's Equity Indices Policies & Practices.

Exchange Rate

The Ossiam Emerging Markets Minimum Variance Index EUR NTR is calculated in real time every 15 seconds between 0.00 a.m. and 21.40 p.m. UTC.

WM/Reuters foreign exchange rates are taken daily at 04:00 PM London time and used in the calculation of the indices. These mid-market fixings are calculated by the WM Company based on Reuters' data and appear on Reuters pages WMRA.

Real-time spot Forex rates, as supplied by Thomson Reuters, are used for ongoing index calculation of real-time indices.

Currency of Calculation

Each index is calculated in USD and EUR.

Index	Currency
Ossiam Emerging Markets Minimum Variance Index	USD, EUR
Ossiam Emerging Markets Asia Minimum Variance Index	USD, EUR
Ossiam Emerging Markets Latin America Minimum Variance	USD, EUR

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.

Index Data

Calculation Return Types

S&P DJI 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 DJI.

- Price Return (PR) versions are calculated without adjustments for regular cash dividends.

- Gross Total Return (TR) versions reinvest regular cash dividends at the close of the ex-date without consideration for withholding taxes.

- Net Total Return (NTR) versions reinvest regular net cash dividends at the close of the ex-date with consideration for withholding taxes.

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

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 DJI's Equity Indices Policies & Practices Methodology located at www.spdji.com.

For more information on the calculation of return types, please refer to S&P DJI's Index Mathematics Methodology located at www.spdji.com.

Base Date and History Availability

Index history availability, Launch Date, Base Date and Launch Value are shown in the table below:

Index	Launch Date	Base Date	History Start Date	Base Value
Ossiam Emerging Markets Minimum Variance Index TR	24-01-2012	16-09-2011	30-04-2001	100
Ossiam Emerging Markets Minimum Variance Index EUR TR	24-01-2012	16-09-2011	30-04-2001	100
Ossiam Emerging Markets Minimum Variance Index NTR	24-01-2012	16-09-2011	30-04-2001	100
Ossiam Emerging Markets Minimum Variance Index EUR NTR	24-01-2012	16-09-2011	30-04-2001	100
Ossiam Emerging Markets Minimum Variance Index	24-01-2012	16-09-2011	30-04-2001	100
Ossiam Emerging Markets Minimum Variance Index EUR	24-01-2012	16-09-2011	30-04-2001	100
Ossiam Emerging Markets Asia Minimum Variance NTR EUR	02-02-2012	02-02-2012	02-02-2012	100
Ossiam Emerging Markets Asia Minimum Variance EUR	02-02-2012	02-02-2012	02-02-2012	100
Ossiam Emerging Markets Asia Minimum Variance TR EUR	02-02-2012	02-02-2012	02-02-2012	100
Ossiam Emerging Markets Asia Minimum Variance NTR	02-02-2012	02-02-2012	02-02-2012	100
Ossiam Emerging Markets Asia Minimum Variance	02-02-2012	02-02-2012	02-02-2012	100
Ossiam Emerging Markets Asia Minimum Variance TR	02-02-2012	02-02-2012	02-02-2012	100

Ossiam Emerging Markets Latin America Minimum Variance NTR EUR	02-02-2012	02-02-2012	02-02-2012	100
Ossiam Emerging Markets Latin America Minimum Variance EUR	02-02-2012	02-02-2012	02-02-2012	100
Ossiam Emerging Markets Latin America Minimum Variance TR EUR	02-02-2012	02-02-2012	02-02-2012	100
Ossiam Emerging Markets Latin America Minimum Variance NTR	02-02-2012	02-02-2012	02-02-2012	100
Ossiam Emerging Markets Latin America Minimum Variance	02-02-2012	02-02-2012	02-02-2012	100
Ossiam Emerging Markets Latin America Minimum Variance TR	02-02-2012	02-02-2012	02-02-2012	100

All information presented prior to the inception date ("Launch Date") is back-tested.

Index Governance

Index Committee

S&P DJI's SP Ossiam Custom Index Committee ("Index Committee") maintains the Ossiam Emerging Markets Minimum Variance Index Series. The Index Committee meets at regular intervals. At each meeting, the Index Committee reviews matters that may affect the indices, including the Methodology, constituents and any significant market events. In addition, the Index Committee may revise index policy and procedures.

S&P DJI considers information regarding changes to the Indices and related matters to be potentially market moving and material, therefore, all Index Committee discussions are confidential.

For information on Quality Assurance and Internal Reviews of Methodology, please refer to S&P DJI's Equity Indices Policies & Practices document located here www.spdji.com.

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 Ossiam and authorized clients. Any unusual treatment of a corporate action or short notice of an event may be communicated via email to clients.

The Index Administrator shall review the Index Methodology periodically for best practices, and any material changes shall be announced ahead of time via its website and/or via email.

The index Methodology is reviewed by the Index Committee as part of the regular index rebalancing process, as well as on at least an annual basis, to ensure that the Methodology is being applied consistently and allows the index to achieve its stated objective. These reviews may highlight situations where changes to the Methodology are necessary to reflect changes in the underlying market.

For more information, please refer to the Announcements section of S&P DJI's Equity Indices Policies & Practices document located here www.spdji.com

Pro-forma Files

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

Holiday Schedule

Each index is calculated on each day that is an Index Business Day.

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 DJI's Equity Indices Policies & Practices document located here *www.spdji.com*.

Recalculation Policy

For information on the recalculation policy, please refer to S&P DJI's Equity Indices Policies & Practices document located here *www.spdji.com*.

For information on Calculations and Pricing Disruptions, Expert Judgment and Data Hierarchy, please refer to S&P DJI's Equity Indices Policies & Practices document located here www.spdji.com.

Real-Time Calculation

Real-time indices are not restated.

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

Index Dissemination

Index levels are available through S&P DJI's here www.spdji.com, and major quote vendors (see codes below).

Tickers

The table below lists headline indices covered by this document.

Index	Return Type	Bloomberg	Refinitiv	Real Time
Ossiam Emerging Markets Minimum Variance Index TR	Total Return	OEMMVGR	OEMMVGR	-
Ossiam Emerging Markets Minimum Variance Index EUR TR	Total Return	-	-	-
Ossiam Emerging Markets Minimum Variance Index NTR	Net Total Return	OEMMVNR	OEMMVNR	Yes
Ossiam Emerging Markets Minimum Variance Index EUR NTR	Net Total Return	-	-	-
Ossiam Emerging Markets Minimum Variance Index	Price Return	OEMMVPR	OEMMVPR	-
Ossiam Emerging Markets Minimum Variance Index EUR	Price Return	-	-	-
Ossiam Emerging Markets Asia Minimum Variance NTR EUR	Net Total Return	-	-	-
Ossiam Emerging Markets Asia Minimum Variance EUR	Price Return	-	-	-
Ossiam Emerging Markets Asia Minimum Variance TR EUR	Total Return	-	-	-
Ossiam Emerging Markets Asia Minimum Variance NTR	Net Total Return	OEMMASUN	-	-
Ossiam Emerging Markets Asia Minimum Variance	Price Return	OEMMASUP	-	-
Ossiam Emerging Markets Asia Minimum Variance TR	Total Return	OEMMASUT	-	-
Ossiam Emerging Markets Latin America Minimum Variance NTR EUR	Net Total Return	-	-	-
Ossiam Emerging Markets Latin America Minimum Variance EUR	Price Return	-	-	-
Ossiam Emerging Markets Latin America Minimum Variance TR EUR	Total Return	-	-	-
Ossiam Emerging Markets Latin America Minimum Variance NTR	Net Total Return	OEMMLTUN	-	-
Ossiam Emerging Markets Latin America Minimum Variance	Price Return	OEMMLTUP	-	-
Ossiam Emerging Markets Latin America Minimum Variance TR	Total Return	OEMMLTUT	-	-

SFTP

Daily stock level and index data are available via SFTP subscription.

Web site

For further information, please refer to (S&P DJI's custom website for Ossiam's indices).

Appendix I – Defined Terms

"Index Business Day" means each day following the launch of an index on which the relevant exchange is scheduled to open for trading for its regular trading session as shown in Table1. If the index calendar refers to more than one Exchange, a day will be considered an Index Business Day only when all such Exchanges are scheduled to open for trading for their regular trading sessions.

"Industry" has the meaning given to such term in the S&P Dow Jones Indices' Global Industry Classification Standard (GICS) Methodology

"Observation Date" has the meaning given to such term in Index Construction.

"Rebalancing Date" has the meaning given to such term in Index Construction.

"Rebalancing Reference Date" has the meaning given to such term in Index Maintenance.

Appendix II – Parameters

W	=	85%	market capitalization threshold
U	=	3%	market capitalization buffer
p	=	20%	maximum share of missing values inside liquidity estimation period accepted
Tv	=	125	index Business days liquidity estimation period
M	=	400	number of the most liquid stocks selected by liquidity filter
B	=	50	liquidity buffer
Ts	=	500 days	covariance estimation period
q	=	10%	maximal share of missing values inside covariance estimation period
Z	=	40%	maximal proportion of zero return observations inside covariance estimation period
$wmax$	=	3.5%	maximal weight
$Smax$	=	20%	upper bound for single sector exposure
$Cmax$	=	20% for each country, 15% for India	upper bound for country exposure
Sect. Classif	=	GICS	Sector classification
H	=	80	inverse diversification target
$TolFun$	=	10^{-1}	termination tolerance on the objective function value
$TolCon$	=	10^{-8}	tolerance on constraints violation
$MaxIter$	=	10^{12}	maximal number of iterations
$wtol$	=	10^{-3}	significance threshold for weights

Appendix III – Data Assumptions

1	Price/Total Return	For countries with Fri-Sat weekend (currently Qatar, UAE, Egypt, Saudi Arabia, Kuwait), XP_PRICE/ XP_TOTAL_RETURN is used in place of P_PRICE/P_TOTAL_RETURN in FactSet formula for data download. As the P_ in FactSet doesn't cover the Sat-Sun data. For rest, P_PRICE/P_TOTAL_RETURN is used.
2	Volume	For countries- Taiwan, India, Qatar and UAE- xp_agg_volume is used. For country Peru- if p_volume is more for any stock than xp_agg_volume, then p_volume is used for that stock. Else xp_agg_volume is used. For rest of the stocks- P_volume is used for mon-fri weekday stocks and xp_volume for Sun-Thu weekday stocks.
3	Middle East Treatment	For Sun-Thu weekday stocks (currently Qatar, UAE, Egypt, Saudi Arabia, Kuwait), The Sunday's values are transferred to previous Friday. This is done for price, volume, total return and forex data. After this, the Sat-Sun data are removed.
4	First Trading Day Total Volume Adjustment	For each stock, for the first available volume date, the total return value is removed (changed to nan). This is to avoid the effect of excessive price movement on the first trading day after the IPO.
5	Data Adjustments	Also, for the dates when both the total_return data and volume data are zero or nan, the price data values are changed to nan. For the dates when the price values are nan, the total return values are changed to nan.
6	Multiple Listings	This step is properly implemented as per the methodology- FactSet formula- FSYM_PARENT_EQUITY is used to get the primary ID based on which the less liquid (less ADV) ones are removed among same primary ID stocks.
7	Missing Price Adjustment based on Volume	wherever the volume is nan or zero, the price values are changed to nan. Then if the price data for the estimation period is nan for more than q% times, the stock is removed. Also checked if the currency adjusted total return data is nan for more than q% time, the stock is removed.
8	Country Indices	Country index data- S&P/IFCI country indices are fetched from YYYYMMDD_SPIFCI.SDL. If S&P/IFCI country indices are not available for any country, the S&P BMI country index for that country is used as proxy.

Appendix IV – Methodology Changes

In calculating and determining the value of each index, S&P DJI will, subject as provided below, use the Methodology and its interpretation of such Methodology shall be conclusive and binding. While S&P DJI uses the Methodology described in this document to calculate each index, no assurance can be given that market, regulatory, juridical, financial, fiscal or other circumstances (including, but not limited to, any changes to or any suspension or termination of any constituent of an index or any other events affecting transactions on the same or similar terms to any constituent of an index) will not arise that would, in the view of S&P DJI, necessitate or make desirable a modification of or change to such Methodology (including, but without limitation, a change in the frequency of calculation of any index level) in order for each index to continue being calculated and determined notwithstanding the relevant circumstances S&P DJI shall be entitled to make any such modification or change in its sole discretion.

S&P DJI shall be entitled to make such modifications and/or changes to the Methodology as it, in its sole discretion, deems necessary or desirable, including (without limitation):

i.   To correct any manifest error or proven error or to cure, correct or supplement any ambiguity or defective provision contained in this Methodology; and/or

ii. To preserve the intended index objective, where such modification and/or change is of a formal, minor or technical nature; and/or

iii. To take into account any change in the terms (whether in relation to settlement mechanics or otherwise) on which relevant instruments concerning any index constituent are traded.

In deciding what is necessary or desirable, S&P DJI will consider and/or take into account what it determines to be the intended objective of the index.

In making any such modifications, however S&P DJI will (x) ensure that such modifications or changes pursuant to this section "Change in Methodology" will result in a methodology that, in S&P DJI's sole determination, is consistent with the intended objective of the Methodology described herein and (y) limit any such modification or change to the index rules and/or method of calculating any index Level(s).

S&P DJI may, in its sole discretion, at any time and without notice, terminate the calculation and publication of the index.

Methodology changes since 2nd of June, 2020 are as follows:

Change	Effective Date (After Close)	Methodology Previous	Methodology Updated
Cmax	29-December-2020	20%	15% for India 20% for each other country
Monthly Reweighting[2]	29-December-2020	--	Outside of rebalancing months, the index is reweighted monthly if India's country weight is above

---

[2] An ad-hoc reweighting as of the close of 29-December-2020 was conducted in order to cap the weight of India at 15% before 1- January-2021.

			18%. This is observed as of the Reweighting Observation Date (the 2nd Friday of each month, or next index business day if the 2nd Friday is not a business day) and effective as of the close of the 3rd Friday of the month, or the next business day if the 3rd Friday is not a business day (Reweighting Date). If a reweighting occurs, India's index weight is reset to 15% and the excess weight is redistributed pro-rata across the rest of the index. Stocks are assigned index shares and new weights using the closing prices as of the Reweighting Reference Date (i.e: as of the close of the Monday before the 3rd Friday of the reweighting month, or the next business day if the 3rd Friday is not a business day). If a reweighting takes place in a month, Pro-forma files will start from the Reweighting Reference Date of such month.

Appendix V – EU Required ESG Disclosures

	EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL & GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY[3]	
1.	**Name of the benchmark administrator.**	S&P DJI Netherlands B.V.
2.	**Underlying asset class of the ESG benchmark.[4]**	N/A
3.	**Name of the benchmark or family of benchmarks.**	Ossiam Equity Benchmark Statement
4.	**Do any of the indices maintained by this methodology take into account ESG factors?**	No
Appendix latest update:		December 2020
Appendix first publication:		December 2020

---

[3] The information contained in this Appendix is intended to meet the requirements of the European Union Commission Delegated Regulation (EU) 2020/1817 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the minimum content of the explanation of how environmental, social and governance factors are reflected in the benchmark methodology.

[4] The 'underlying assets' are defined in European Union Commission Delegated Regulation (EU) 2020/1816 supplementing Regulation (EU) 2016/1011 of the European Parliament and of the Council as regards the explanation in the benchmark statement of how environmental, social and governance factors are reflected in each benchmark provided and published.

Index Administrator Contact Information

Index Governance

Zak Cherkaoui – Senior Director
zak.cherkaoui@spglobal.com   +31.20.570.2217

Product Management

Marius Baumann – Managing Director
marius.baumann@spglobal.com   +44.207.176.8431

Client Services

index_services@spglobal.com

Disclaimer

In the event of any inconsistency between the text below and any version which is translated into any other language, the text below shall prevail.

The indices are proprietary to Ossiam. No use or publication may be made of an index, or any of its provisions or values, without the prior written consent of Ossiam.

S&P DJI or its duly appointed successor, acting as Index Administrator and Index Calculation Agent, is not obliged to enter into, or promote transactions or investments, that are linked to the indices.

It is not possible to invest directly in an index. Exposure to an asset class represented by an index is 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 an index will accurately track index performance or provide positive investment returns. S&P DJI is not an investment advisor, and S&P DJI 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 vehicle. S&P DJI 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 (collectively "**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 DJI. The Content shall not be used for any unlawful or unauthorized purposes. S&P Dow Jones Indices does not guarantee the accuracy, completeness, timeliness or availability of the Content. S&P Dow Jones Indices is 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 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 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 Dow Jones Indices 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 S&P Dow Jones Indices may have information that is not available to other business units. S&P Dow Jones Indices 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.