

# **MSCI WORLD DIVERSIFIED DIVIDEND SELECT 50 INDEX**

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# 1 Introduction

The MSCI World Diversified Dividend Select 50 Index (the 'Index') aims to represent the performance of a set of 50 securities with higher Dividend Yield<sup>1</sup> than the MSCI World IMI Index along with control over ex-ante total risk. The Index aims to achieve diversification with region and sector exposure constraints.

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<sup>1</sup> Please refer to Appendix 5 for the detailed information on Dividend Yield

## 2 MSCI ESG Research

The Index uses company ratings and research provided by MSCI ESG Research. In particular, the index uses the following three MSCI ESG Research products: MSCI Business Involvement Screening Research, MSCI ESG Controversies and MSCI Climate Change Metrics.

For more detail on MSCI ESG Research's full suite of ESG products, please refer to <https://www.msci.com/esg-investing>.

### 2.1 MSCI ESG BUSINESS INVOLVEMENT SCREENING RESEARCH

MSCI ESG Business Involvement Screening Research (BISR) aims to enable institutional investors to manage environmental, social and governance (ESG) standards and restrictions reliably and efficiently.

For more details on MSCI ESG Business Involvement Screening Research, please refer to [http://www.msci.com/resources/factsheets/MSCI\\_ESG\\_BISR.pdf](http://www.msci.com/resources/factsheets/MSCI_ESG_BISR.pdf).

### 2.2 MSCI ESG CONTROVERSIES

MSCI ESG Controversies provides assessments of controversies concerning the negative environmental, social, and/or governance impact of company operations, products and services. The evaluation framework used in MSCI ESG Controversies is designed to be consistent with international norms represented by the UN Declaration of Human Rights, the ILO Declaration on Fundamental Principles and Rights at Work, and the UN Global Compact. MSCI ESG Controversies Score falls on a 0-10 scale, with "0" being the most severe controversy.

For more details on MSCI ESG Controversies, please refer to <https://www.msci.com/esg-and-climate-methodologies>

### 2.3 MSCI CLIMATE CHANGE METRICS

MSCI Climate Change Metrics provides climate data & tools to support investors integrating climate risk & opportunities into their investment strategy and processes. It supports investors seeking to achieve a range of objectives, including measuring and reporting on climate risk exposure, implementing low carbon and fossil fuel-free strategies, align with temperature pathways and factoring climate change research

into their risk management processes, in particular through climate scenario analysis for both transition and physical risks.

The dataset spans across the four dimensions of a climate strategy: transition risks, green opportunities, physical risks and 1.5° alignment.

For more details on MSCI Climate Change Metrics, please refer to <https://www.msci.com/climate-solutions>.

## 3 Constructing the Index

The Index is constructed from the MSCI World IMI Index (the “Parent Index”).

The following steps are applied in the construction of the Index:

- Defining the Eligible Universe and the base currency for optimization
- Eligible Universe Screening
- Defining the Optimization objective and constraints
- Determining the Optimized Index

### 3.1 DEFINING THE ELIGIBLE UNIVERSE AND THE BASE CURRENCY FOR OPTIMIZATION

The Eligible Universe is derived from the Parent Index after applying the screens in 3.2. The optimization is performed from a base currency perspective and does not allow short selling of securities. The optimization base currency is USD.

The optimization process relies on factor exposures for all the securities in the Parent Index and the factor co-variance matrix of the relevant Barra Equity Model<sup>2</sup>.

### 3.2 ELIGIBLE UNIVERSE SCREENING

#### 3.2.1 ESG CONTROVERSIES SCORE ELIGIBILITY

The Index uses MSCI ESG Controversies Scores to identify companies that are involved in very serious controversies involving the environmental, social, or governance impact of their operations and/or products and services. Companies are required to have an MSCI ESG Controversies Score of 1 or above to be eligible for inclusion in the Index<sup>3</sup>.

#### 3.2.2 CONTROVERSIAL BUSINESS INVOLVEMENT CRITERIA

The Index uses MSCI ESG Business Involvement Screening Research to identify companies that are involved in the following business activities. Companies that meet the business involvement criteria are excluded from the Index. Please refer to Appendix 2 for details on these criteria.

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<sup>2</sup> Please refer to Appendix 1 for the detailed information on model usage

<sup>3</sup> Unrated companies (companies not assessed by MSCI ESG Research on MSCI ESG Controversies Score) are excluded from the Eligible Universe. For more details refer to the MSCI ESG Universal Index:

[https://www.msci.com/eqb/methodology/meth\\_docs/ESG\\_Universal\\_Index\\_Methodology.pdf](https://www.msci.com/eqb/methodology/meth_docs/ESG_Universal_Index_Methodology.pdf)

- Conventional Weapons
- Tobacco
- Thermal Coal
- Nuclear Power
- Oil & Gas
- Adult Entertainment
- Gambling
- Controversial Weapons
- Nuclear Weapons
- United Nations Global Compliance

### 3.2.3 LIQUIDITY CRITERIA

Securities with 3-month ADTV greater than or equal to USD 10 Million are eligible for inclusion in the Index.

ADTV is defined as Average Daily Traded Volume and is calculated as:

$$ADTV_{3M} = \frac{ATV_{3M}^4}{252}$$

Where  $ATV_{3M}$  is annualized 3-month Average Traded Volume of the security.

To avoid multiple securities of the same company in the final Index, only the most liquid security for each issuer per its 3-month ADTV, is eligible for inclusion in the Index. For any issuer, should two securities have the same 3-month ADTV, the one with the higher free float-adjusted market capitalization is included.

## 3.3 DEFINING THE OPTIMIZATION OBJECTIVE AND CONSTRAINTS

### 3.3.1 OPTIMIZATION OBJECTIVE

The optimization objective is to maximize the alpha score (representative of weighted average of the Dividend Yield of each security) under the “risk upper bound”

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<sup>4</sup> MSCI Index Calculation Methodology at <https://www.msci.com/index-methodology>  
MSCI Global Investable Market Indexes Methodology at <https://www.msci.com/index-methodology>



constraint where the risk upper bound is equal to or lower than a fixed proportion of the (predicted) total risk of the MSCI World Index at the time of rebalancing, along with various other optimization constraints as specified in 3.3.2.

### CALCULATION OF THE ALPHA SCORE

The alpha score is calculated as:

$$\alpha = \sum \alpha(i) * W(i)$$

Where,

$\alpha(i)$  = Dividend Yield<sup>5</sup> of each security i

$W(i)$  = Weight of each security i as calculated via optimization process

### 3.3.2 OPTIMIZATION CONSTRAINTS

The Index is constructed using the Barra Open Optimizer in combination with the relevant Barra Equity Model. The optimization uses the above selected securities from the eligible universe and the specified optimization objective and constraints to determine the Index.

At each quarterly rebalance, the following optimization constraints are applied which aim to ensure investability while achieving relatively high Dividend Yield with control over ex-ante total risk.

No.	Parameter	Constraint
1	Number of Constituents	50
2	Maximum weight of a single security	5%
3	Maximum Weight to a region <sup>6</sup>	50%
4	Total Risk Upper Bound	80% * Total Risk of MSCI World Index
5	Active exposure to Barra Style Factors - Book to Price, Earnings Yield, Liquidity, Long-Term Reversal, Mid Capitalization & Size relative to MSCI World Index	(0,0.75)
6	Active exposure to Barra Style Factors – Beta, Dividend Yield, Earnings Quality, Earnings Variability, Growth,	No Constraint

<sup>5</sup> Please refer to Appendix 5 for the detailed information on Dividend Yield

<sup>6</sup> Please Refer to Appendix 3

No.	Parameter	Constraint
	Investment Quality, Leverage, Momentum, Residual Volatility and Profitability	
7	Maximum Weight to each GICS sector	50%
8	Maximum one-way turnover at each rebalance	100%

### 3.4 DETERMINING THE WEIGHTS

The weights of the securities are an outcome of the optimization process. The optimization uses the Eligible Universe as the universe of eligible securities and the specified optimization objective and constraints to determine the Index.

## 4 Maintenance of the Index

### 4.1 QUARTERLY INDEX REVIEWS

The Index is reviewed on a quarterly basis, coinciding with the May and November Semi-Annual Index Reviews and the February and August Quarterly Index Reviews of the Parent Index.

For each rebalance, the Barra Equity Model data as of the end of the month preceding the Index Review are used. This approach aims to capture timely updates to the risk characteristics of the companies and coincide with the rebalancing frequency of the relevant Parent Index.

In general, MSCI uses MSCI ESG Research data (including MSCI Business Involvement Screening Research, MSCI ESG Controversies Scores and MSCI Climate Change Metrics) as of the end of the month preceding the Index Reviews for the rebalancing of the Index. For some securities, such data may not be published by MSCI ESG Research by the end of the month preceding the Index Review. For such securities, MSCI will use ESG data published after the end of month, when available, for the rebalancing of the Index.

The pro forma Index is typically announced nine business days before the effective date.

### 4.2 ONGOING EVENT RELATED CHANGES

The following section briefly describes the treatment of common corporate events within Index.

No new securities will be added (except where noted below) to the Index between Index Reviews. For cases where additions are noted below, securities will be added to the Index only if added to the Parent Index. Parent Index deletions will be reflected simultaneously.

#### EVENT TYPE

#### EVENT DETAILS

#### New additions to the Index

A new security added to the Parent Index (such as IPO and other early inclusions) will not be added to the Index.

#### Spin-Offs

All securities created as a result of the spin-off of an existing Index constituent will be added to the Index

at the time of event implementation. Reevaluation for continued inclusion in Index will occur at the subsequent Index Review.

### **Merger/Acquisition**

For Mergers and Acquisitions, the acquirer's post event weight will account for the proportionate amount of shares involved in deal consideration, while cash proceeds will be invested across the Index.

If an existing Index constituent is acquired by a non-MSCI Index constituent, the existing constituent will be deleted from the Index and the acquiring non-constituent will not be added to the Index.

### **Changes in Security Characteristics**

A security will continue to be an Index constituent if there are changes in characteristics (country, sector, size segment, etc.) Reevaluation for continued inclusion in the Index will occur at the subsequent Index Review.

Further detail and illustration regarding specific treatment of corporate events relevant to this Index can be found in the MSCI Corporate Events Methodology book under the sections detailing the treatment of events in Capped Weighted and Non-Market Capitalization Weighted Indexes.

The MSCI Corporate Events methodology book is available at: <https://www.msci.com/Index-methodology>.

## **Appendix 1: New Release of Barra® Equity Model or Barra® Optimizer**

The methodology presently uses MSCI Barra Global Equity Model for Long-Term Investors (“GEMTL”) for the optimization. A new release of the relevant Barra Equity Model or Barra Optimizer may replace the former version within a suitable timeframe.

## Appendix 2: ESG Exclusions Criteria

Companies are excluded based on the following MSCI Business Involvement Screening Research

- **Conventional Weapons**
  - All companies deriving 10% or more recent-year percent of revenue, or maximum estimated percent, from weapons systems, components, and support systems and services.
- **Tobacco**
  - All companies deriving 10% more revenue, or maximum estimated percent, a from tobacco-related business activities.
- **Adult Entertainment**
  - Companies with an industry tie to adult entertainment, including producer, distributor, retailer, and ownership categories.
- **Nuclear Power**
  - All companies with 30% or more of installed capacity attributed to nuclear sources.
  - All companies with 30% or more of electricity generation from Nuclear sources.
  - All companies deriving 30% or more revenue from operation or ownership of nuclear power plants.
- **Compliance with all the UN Global Compact Principles**
  - All companies that fail to comply with the United Nations Global Compact principles are excluded.
- **Thermal Coal**
  - All companies with 5% or more of total installed capacity for thermal coal.
  - All companies with generating 5% or more electricity from thermal coal.
  - All companies deriving 10% or more revenue from thermal coal based power generation.

- All companies deriving 10% or more revenue from the mining of thermal coal (including lignite, bituminous, anthracite and steam coal) and its sale to external parties.
- **Oil & Gas**
  - All companies generating 30% or more power from liquid fuels and natural gas.
- **Gambling**
  - Companies that have an industry tie to gambling through the operation, support, licensing or ownership categories.
- **Controversial Weapons**
  - All companies that have any ties to cluster munitions, landmines, biological / chemical weapons, depleted uranium weapons, blinding laser weapons, incendiary weapons, and/or non-detectable fragments are excluded.
- **Nuclear Weapons**
  - All companies with any tie to Nuclear weapons are excluded.

### Appendix 3: Definition of Regions

For the Index, we define the following 3 custom regions:

No.	Region	Countries
1	North America	USA, Canada
2	Europe	Denmark, Netherlands, Austria, Sweden, Portugal, Ireland, United Kingdom, Spain, Norway, Finland, Belgium, Italy, France, Germany, Switzerland, Israel
3	Asia	Australia, Singapore, New Zealand, Hong Kong, Japan



## **Appendix 4: Handling Infeasible Optimizations**

The number of constituents, minimum weight of a single security and total risk upper bound constraints have been set as soft constraint in the Barra Optimizer.

During the Quarterly Index Review, in the event that there is no optimal solution that satisfies all the optimization constraints defined in Section 3.3.2, the number of constituents, minimum weight of a single security and total risk upper bound constraints are relaxed automatically to allow the optimizer to find an optimal solution.

In the event that no optimal solution is found even after the above constraint relaxation, the relevant Index will not be rebalanced for that Quarterly Index Review.

## Appendix 5: Dividend Yield Definition and Computation

For each index review, the index uses security level dividend yield as of last end of month prior to the index review date.

It is calculated as the ratio of trailing 12-month dividend per share of the security divided by price of the security as of last end of month<sup>7</sup>.

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<sup>7</sup> For further details regarding the calculation, please Refer to [MSCI Fundamental Data Methodology](#)

## Contact us

clientservice@msci.com

### AMERICAS

Americas	1 888 588 4567 *
Atlanta	+ 1 404 551 3212
Boston	+ 1 617 532 0920
Chicago	+ 1 312 675 0545
Monterrey	+ 52 81 1253 4020
New York	+ 1 212 804 3901
San Francisco	+ 1 415 836 8800
São Paulo	+ 55 11 3706 1360
Toronto	+ 1 416 628 1007

### EUROPE, MIDDLE EAST & AFRICA

Cape Town	+ 27 21 673 0100
Frankfurt	+ 49 69 133 859 00
Geneva	+ 41 22 817 9777
London	+ 44 20 7618 2222
Milan	+ 39 02 5849 0415
Paris	0800 91 59 17 *

### ASIA PACIFIC

China North	10800 852 1032 *
China South	10800 152 1032 *
Hong Kong	+ 852 2844 9333
Mumbai	+ 91 22 6784 9160
Seoul	00798 8521 3392 *
Singapore	800 852 3749 *
Sydney	+ 61 2 9033 9333
Taipei	008 0112 7513 *
Thailand	0018 0015 6207 7181 *
Tokyo	+ 81 3 5290 1555

\* = toll free

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