

METHODOLOGY BOOK FOR:

**-BNPP WORLD BARRA MULTI-FACTOR
MARKET BETA 30% SCREENED SELECT
L/S INDEX**

**-BNPP WORLD BARRA MULTI-FACTOR
MARKET BETA 30% SCREENED SELECT
L/S VARIANT 1 INDEX**

**-BNPP WORLD BARRA MULTI-FACTOR
MARKET BETA 30% SCREENED SELECT
LONG INDEX**

**- BNPP WORLD BARRA MULTI-FACTOR
MARKET BETA 30% SCREENED SELECT
SHORT INDEX**

**- BNPP WORLD BARRA MULTI-FACTOR
MARKET BETA 30% SCREENED SELECT
L/S EXCESS RETURN INDEX**

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1 Introduction

The BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Index (herein, the “Index”)¹ is developed in collaboration with BNP Paribas and is constructed from a long/short strategy that seeks high active exposure to four style factors - Value, Momentum, Quality and Low Volatility less penalty for total risk subject to various business involvement and climate change based screenings. The Index is inclusive of annual index fee².

To arrive at the Index, the BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Variant 1 Index is constructed first, which combines BNPP World Barra Multi-Factor Market Beta 30% Screened Select Long Index, the BNPP World Barra Multi-Factor Market Beta 30% Screened Select Short Index, and Cash Index in a fixed proportion at each rebalancing. For details on construction of BNPP World Barra Multi-Factor Market Beta 30% Screened Select Long Index and the BNPP World Barra Multi-Factor Market Beta 30% Screened Select Short Index, please refer to Section 2.2, 2.3 and 2.4.

The Index is then constructed by applying the MSCI Decrement Indexes methodology on the BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Variant 1 Index to account for an annual index fee. Please refer to Section 2.5 for more details.

The BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Excess Return Index is designed to represent the performance of an investment strategy tracking the BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Index after deducting interest rates. For more details, please refer to Section 2.6³.

¹ The Indexes are governed by a set of methodology and policy documents (“Methodology Set”), including the present index methodology document. Please refer to Appendix VII for more details.

² Index fee is applied in accordance with the MSCI Decrement Indexes methodology. Refer to Section 2.5 for more details. For more information on the MSCI Decrement Indexes Methodology, please refer to <https://www.msci.com/index-methodology> and Appendix VI.

³ Please refer to the MSCI Excess Return Indexes methodology at www.msci.com/index-methodology.

2 Constructing the Index

The Index is constructed using the following steps:

- The BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Variant 1 Index is constructed in accordance with Section 2.1.
- An annual index fee⁴ of 0.7% is deducted from the daily index return of the BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Variant 1 Index to arrive at the Index.

The BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Excess Return Index is constructed by applying the MSCI Excess Return Indexes methodology⁵ on the Index.

2.1 Constructing the BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Variant 1 Index

The BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Variant 1 Index is constructed by combining the following three components:

- BNPP World Barra Multi-Factor Market Beta 30% Screened Select Long Index (the “component 1”, together components 2 and 3 the “components”)
- BNPP World Barra Multi-Factor Market Beta 30% Screened Select Short Index (the “component 2”, together with components 1 and 3 the “components”)
- Cash Index⁶ (the “component 3”, together with components 1 and 2 the “components”)

BNPP World Barra Multi-Factor Market Beta 30% Screened Select Long Index⁷ and the BNPP World Barra Multi-Factor Market Beta 30% Screened Select Short Index⁸ are constructed from the Optimized Index⁹. Please refer to Section 2.4 for more details on the Optimized Index.

BNPP World Barra Multi-Factor Market Beta 30% Screened Select Long Index aims to represent the performance of all securities from the Optimized Index with positive security weights. The BNPP World Barra Multi-Factor Market Beta 30% Screened Select Short Index aims to represent the performance of all securities from the Optimized Index with negative security weights.

⁴ Index fee is applied in accordance with the MSCI Decrement Indexes methodology. Refer to Section 2.5 for more details.

⁵ Please refer to the MSCI Excess Return Indexes methodology at www.msci.com/index-methodology.

⁶ LIBOR USD rate is used until December 31, 2018, SOFR is used effective January 1, 2019

⁷ Refer to Section 2.2 for more details

⁸ Refer to Section 2.3 for more details

⁹ Refer to Section 2.4 for more details

At each monthly Index Review, the three components are combined based on the following weights and return variants to create the BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Variant 1 Index:

Component Index	Weight	Return Variant
BNPP World Barra Multi-Factor Market Beta 30% Screened Select Long Index	130%	Net Total Return
BNPP World Barra Multi-Factor Market Beta 30% Screened Select Short Index	-95%	Gross Total Return
Cash Index	65%	Total Return

The level of the Cash Index is determined using the daily Cash Index return (“Daily Cash Index Return”) which is calculated on each day “t” as follows:

$$Cash\ Index_t = Cash\ Index_{t-1} \times (1 + Daily\ Cash\ Index\ Return_t)$$

Where:

$$Daily\ Cash\ Index\ Return_t = CR_{t-1} * \frac{ACT_{(t-1,t)}}{Day\ Count}$$

Where:

CR_{t-1} = Short-Term rate¹⁰ published on the previous business day t-1

$ACT_{(t-1,t)}$ = Number of actual calendar days between business day t-1 and t

$Day\ Count$ = Day count convention used by the short-term rate

Between successive rebalancing, the weights of the component indexes will evolve based on their respective performance.

2.2 BNPP World Barra Multi-Factor Market Beta 30% Screened Select Long Index

All the securities from the Optimized Index with positive weights are selected for inclusion in the BNPP World Barra Multi-Factor Market Beta 30% Screened Select Long Index in the same weightings as in the Optimized Index. The weights of the selected securities from the Optimized Index are then normalized to 100%.

¹⁰ LIBOR USD rate is used until December 31, 2018, SOFR is used effective January 1, -2019

2.3 BNPP World Barra Multi-Factor Market Beta 30% Screened Select Short Index

All the securities from the Optimized Index with negative weights are selected for inclusion in the BNPP World Barra Multi-Factor Market Beta 30% Screened Select Short Index in the same weightings as in the Optimized Index. The weights of the selected securities from the Optimized Index are then normalized to 100%.

2.4 Optimized Index

The Optimized Index is constructed from the MSCI World Index (the “Parent Index”). The following steps are applied in the construction of the Optimized Index:

- Defining the Reference Index
- Defining the Alpha Score
- Defining the Eligible Universe
- Defining the Optimization Setup
- Determining the Optimized Index

The steps mentioned above are defined in detail in the subsequent sections.

2.4.1. DEFINING THE REFERENCE INDEX

The Reference Index is MSCI World Index that is used as the basis to calculate the relative GICS^{®11} sector exposures.

2.4.2. DEFINING THE ALPHA SCORE

The Alpha score is determined by calculating the winsorized (at +/-3) z-score for a weighted combination of the target factor scores. Below is the detailed calculation for the Alpha score.

Calculation of the Alpha Score:

$$\alpha_i = 0.25 * F_{1,i} + 0.25 * F_{2,i} + 0.25 * F_{3,i} + 0.25 * F_{4,i}$$

F_{j,i} = Factor score of each security, i for each of the target factors, j.

The factor scores for the target factors are defined as follows:

- Momentum (F_{1,i}) - The Momentum factor score is winsorized (at +/-3) z-score of the Barra Momentum factor score. The Barra Momentum factor score definition is given in Appendix II.
- Value (F_{2,i}) - The winsorized (at +/-3) sector-relative z-score calculated using the security-level exposures to earnings-based, asset-based and whole-firm based valuation metrics from the relevant Barra Equity Model. The factor definition is given in Appendix II.

¹¹ GICS, the global industry classification standard jointly developed by MSCI Inc. and S&P Dow Jones Indices.

- Quality ($F_{3,i}$) – The winsorized (at +/-3) sector-relative z-score calculated using the security-level exposures to all quality factors from the relevant Barra Equity Model. The factor definition is given in Appendix II.
- Low Volatility ($F_{4,i}$) – The winsorized (at ± 3) Low Volatility score for each security is defined as the z-score of the negative of the residual volatility factor exposure from the relevant Barra Equity Model. The factor definition is given in Appendix II.

If any of the factor score ($F_{j,i}$) is missing for a security (i), a value of zero is assigned for that factor score ($F_{j,i}$). A minimum of one factor score is required to calculate the Alpha score.

2.4.3. DEFINING THE ELIGIBLE UNIVERSE

The Eligible Universe is constructed from the Parent Index after applying the following screens.

2.4.3.1 LIQUIDITY SCREEN

Securities from the Parent Index with 1-month ADTV greater than or equal to USD 10 million are eligible for inclusion in the Optimized Index.

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

$$ADTV_{1M} = \frac{ATV_{1M}}{252}$$

Where ATV_{1M}^{12} is annualized 1-month Average Traded Value of the security.¹³

2.4.3.2 COUNTRY SCREEN

Securities from the Parent Index that belong to Israel or New Zealand are excluded from the Index.

2.4.3.3 ALPHA SCREEN

Securities from the Parent Index without an Alpha score (as defined in Section 2.4.2) are excluded from the Index.

2.4.3.4 VALUES AND CLIMATE CHANGE BASED SCREENING CRITERIA

Securities from the Parent Index that are involved in the business activities as identified by MSCI Business Involvement Screening Research or MSCI Climate Change Metrics mentioned in Appendix I are excluded from the Index.

2.4.4. DEFINING THE OPTIMIZATION SETUP

The optimization objective is to maximize the Alpha score (representative of the exposures to the set of target factors) less a penalty for total (net) risk at the time of rebalancing. The Common Factor Risk Aversion and Specific Risk Aversion parameters in the optimization are set to 0.0015 and 0.015, respectively. The optimization is performed using US Dollar as a base currency.

¹² MSCI Index Calculation Methodology at <https://www.msci.com/index-methodology>

¹³ Securities with missing values for ATV are ineligible for selection.

2.4.5. OPTIMIZATION CONSTRAINTS

At each Index Review, the following optimization constraints are employed, which aim to meet the objectives of the Optimized Index while ensuring replicability and investability:

	Parameter	Constraint
1	Maximum number of constituents	150 in each leg (Long and Short)
2	Minimum and Maximum weight of security relative to cash	-2.5%, 2.5%
3	Ex-ante Beta exposure range relative to the Reference Index	0.275 to 0.325
4	Exposure range of Non-Target Barra Style Factors ¹⁴ (except Dividend Yield and Earnings Variability) relative to cash	-0.1 to 0.1
5	Floor to target Barra Style Factors ¹⁵ relative to cash (Ceiling to negative target Barra Style Factors)	0
6	Minimum and Maximum weight to a Region relative to the Reference Index – APAC, Europe and North America ¹⁶	0.25x, 0.45x
7	Exposure range of Industry Factors relative to the Reference Index	0.0x to 0.55x
8	Minimum and Maximum weight to each GICS [®] sector relative to the Reference Index ¹⁷	0.25x, 0.45x
9	Active Weight range of GICS [®] sector by side relative to the Reference Index, for Long Leg ¹⁸	0.8x to 2.3x
10	Active Weight range of GICS [®] sector by side relative to the Reference Index, for Short Leg ¹⁹	-2x to -0.5x
11	Gross leverage	225% (130% Long and 95% short)
12	Weight of Cash	65%
13	1-month ADTV Trade Limit ²⁰	20%

- Securities from the Parent Index with shorting cost more than 200 basis points (bps) or missing are not eligible for inclusion in the Short Leg.

¹⁴ Beta, Growth, Liquidity, Mid-Cap and Size are classified as Non-target Factors

¹⁵ ResVol, BtoP, Earnings Yield, LT Reversal, Profitability, Earnings Quality, Investment Quality, Leverage and Momentum are classified as Target Factors. Dividend Yield and Earnings Variability are kept unconstrained.

¹⁶ Indexes used to group regions are MSCI Europe Index, MSCI Pacific Index, MSCI North America Index

¹⁷ For GICS Energy sector the lower bound will be 0x.

¹⁸ For GICS Energy sector the lower bound will be 0x.

¹⁹ For GICS Energy sector the upper bound will be 0x.

²⁰ Refer to Appendix III for more details

- At each monthly index rebalancing, the weight of each index constituent will not change more than a predefined Trade Limit linked to the stock's Average Daily Traded Value (ADTV).
- At each monthly rebalancing, each security is subject to both absolute bounds of +2.5% / - 2.5% and Trade Limit based bounds. The upper bound is defined as the minimum of the absolute and Trade Limit upper bounds, and the lower bound is defined as the maximum of the absolute and Trade Limit lower bounds. When these bounds conflict (i.e., the upper bound is lower than the lower bound), the Trade Limit asset bound constraint takes precedence, and both the final upper and lower bounds are set to the Trade Limit based bound. As a result, temporary deviations beyond +/- 2.5% can still happen, while allowing the bounds to converge back toward the $\pm 2.5\%$ range over subsequent rebalances.
- For example, if a security has a current weight of 6% and a Trade Limit of $\pm 2\%$, the Trade Limit implies a lower bound of 4%. Since this exceeds the absolute upper bound of 2.5%, both the final lower and upper bounds are set to 4%. Similarly, if a security has a current weight of -5% with the same Trade Limit, the Trade Limit implies an upper bound of -3%, which lies below the absolute lower bound of -2.5%, and both the final lower and upper bounds are therefore set to -3%.

2.4.6. DETERMINING THE OPTIMIZED INDEX

The Optimized Index is constructed using the Barra Open Optimizer in combination with the relevant Barra Equity Model²¹. The optimization uses the Eligible Universe as the universe of eligible securities and the specified optimization objective and constraints to determine the Optimized Index. Infeasible optimizations are handled as explained in Appendix IV.

2.5 Constructing the BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Index

The Index Fee is applied using the MSCI Decrement Indexes methodology²² on the BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Variant 1 Index to construct the Index. The parameters for the decrement application are noted in Appendix VI.

2.6 Constructing the BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Excess Return Index

The BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Excess Return Index is constructed by applying the MSCI Excess Return Indexes Methodology²³ to the Index on each index calculation day²⁴.

²¹ Please refer to Appendix V for the detailed information on model usage

²² Please refer to the MSCI Decrement Indexes Methodology at <http://www.msci.com/index-methodology>.

²³ Please refer to the MSCI Excess Return Indexes methodology at www.msci.com/index-methodology.

²⁴ Short-term rate is LIBOR USD rate until 31-Dec-2018 and SOFR is used effective January 1, 2019

3 Maintaining the Indexes

3.1 Index Reviews

The BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Variant 1 Index, the BNPP World Barra Multi-Factor Market Beta 30% Screened Select Long Index and the BNPP World Barra Multi-Factor Market Beta 30% Screened Select Short Index are reviewed on a monthly basis on the eleventh business day²⁵ of the month ('the effective date').

Barra Equity Model data as of the day before the pro-forma rebalancing day is used. ATV and Shorting-Cost data as of the last end of month of pro-forma rebalancing day is used.

The pro forma Indexes are in general announced five business days before the effective date.

3.2 Daily Decrement Calculation

The performance of the Index is computed by reducing the performance of the BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Variant 1 Index by a fixed percentage, on a daily basis using parameters detailed in Appendix VI.

3.3 Ongoing Event Related Changes

The general treatment of corporate events in the BNPP World Barra Multi-Factor Market Beta 30% Screened Select Long Index, the BNPP World Barra Multi-Factor Market Beta 30% Screened Select Short Index and the Optimized Index (herein the "Indexes") aims to minimize turnover outside of Index Reviews. The methodology aims to appropriately represent an investor's participation in an event based on relevant deal terms and pre-event weighting of the index constituents that are involved. Further, changes in index market capitalization that occur as a result of corporate event implementation will be offset by a corresponding change in the Variable Weighting Factor (VWF) of the constituent.

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

No new securities will be added (except where noted below) to the Index between Index Reviews. Parent Index deletions will be reflected simultaneously.

EVENT TYPE

EVENT DETAILS

New additions to the Parent 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 not be added to the

²⁵ Effective from May 2026 the index business day will be defined as all the index business days except the days that are full holidays in New York Stock Exchange, London Stock Exchange, Deutsche Börse Xetra, Tokyo Stock Exchange, SIX Swiss Exchange, Toronto Stock Exchange, or Nasdaq Copenhagen. Prior to April 15, 2026, the indexes are reviewed on first business day of the month.



Indexes at the time of event implementation. Reevaluation for continued inclusion in the Indexes 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-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>.

4 MSCI Solutions

The Indexes are products of MSCI Inc. that utilize information such as company ratings and research produced and provided by MSCI Solutions LLC (“MSCI Solutions”), a subsidiary of MSCI Inc. In particular, the Indexes use the following MSCI sustainability and climate products: MSCI Controversies, MSCI Business Involvement Screening Research and MSCI Climate Change Metrics. MSCI Indexes are administered by MSCI Limited and MSCI Deutschland GmbH.

4.1 MSCI Controversies

MSCI Controversies provide assessments of controversies concerning the potential negative environmental, social, and/or governance impact of company operations, products and services. The evaluation framework used in MSCI 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 Controversies Score falls on a 0-10 scale, with “0” being the most severe controversy.

The MSCI Controversies methodology can be found at:

<https://www.msci.com/legal/sustainability-and-climate-resources-and-disclosures>.

4.2 MSCI Business Involvement Screening Research

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

The MSCI Business Involvement Screening Research methodology can be found at:

<https://www.msci.com/legal/sustainability-and-climate-resources-and-disclosures>.

4.3 MSCI Climate Change Metrics

MSCI Climate Change Metrics provide climate data & tools to support institutional investors seeking to integrate climate risk & opportunities into their investment strategy and processes. This includes investors seeking to achieve a range of objectives, including measuring and reporting on climate risk exposure, implementing low carbon and fossil fuel-free strategies, alignment 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.

For more details on MSCI Climate Change Metrics, please refer to:

<https://www.msci.com/legal/sustainability-and-climate-resources-and-disclosures>.

4.3.1. FOSSIL FUELS AND POWER GENERATION METRICS

MSCI Solutions identifies companies involved in fossil fuel-related assets and activities including fossil fuel reserves, resource extraction, power generation and generation capacity, revenue from such assets and activities and capital investments in such assets and activities. The metrics are based on disclosed activities, disclosed revenue and estimates of revenue that are extrapolated from company disclosures and eligible third-party sources (such as NGOs).

Appendix I: Controversial Business Exclusion Criteria

Companies whose activities meet the following values and climate change-based criteria, as evaluated by MSCI Solutions, are excluded from the Index.

Values-based Exclusion criteria:

- **Controversial Weapons²⁶:**

All companies with any tie to Controversial Weapons (cluster munitions, landmines, depleted uranium weapons, biological/chemical weapons, blinding lasers, nondetectable fragments and incendiary weapons), as defined by the methodology of the MSCI Ex-Controversial Weapons Indexes available at <https://www.msci.com/index/methodology/latest/XCW>.

- **Tobacco²⁷:**

All companies that are involved in the manufacturing of Tobacco-related products

Climate Change-based Exclusion criteria:

- **Thermal Coal Mining²⁸:**

All companies deriving more than 0% revenue (either reported or estimated) from the mining of thermal coal (including lignite, bituminous, anthracite and steam coal) and its sale to external parties. It does not cover revenue from metallurgical coal; coal mined for internal power generation (e.g. in the case of vertically integrated power producers); intracompany sales of mined thermal coal; and revenue from coal trading.

- **Thermal Coal Distribution²⁹:**

All companies with evidence of thermal coal distribution or transport involvement. This includes transport of thermal coal by road, rail, shipping or air, and physical trading of thermal coal. It does not include involvement in storage of thermal coal, or involvement in metallurgical coal-related activities.

- **Oil And Gas³⁰:**

All companies deriving 10% or more aggregate revenue (either reported or estimated) from oil-related activities, including:

- Extraction and production of oil and natural gas liquids

²⁶ The Controversial Weapons Screen is applied from November 26, 2014

²⁷ The Tobacco Screen is applied from July 1, 2012.

²⁸ The Thermal Coal Mining Screen is applied from September 1, 2016.

²⁹ The Thermal Coal Distribution Screen is applied from March 1, 2023.

³⁰ The Oil and Gas Screen is applied from September 1, 2017. Prior to November 26, 2024; the Oil and Gas screens are implemented through a combined oil & gas approach, excluding all companies deriving 10% or more aggregate revenue from oil and gas related activities, including distribution / retail, equipment and services, extraction and production, pipelines and transportation and refining but excluding biofuel production and sales and trading activities

- Refining of oil fuels
- Oil and oil products pipelines or natural gas liquids pipelines
- Transportation of oil and oil products
- Distribution of oil and related products
- Exploration as a service to the oil and natural gas industries
- Drilling wells as a service to the exploration and production of oil and natural gas

Also, all companies deriving 50% or more aggregate revenue (either reported or estimated) from gas-related activities, including:

- Extraction and production of natural gas
- Processing of natural gas fuels
- Natural gas pipelines
- Transportation of natural gas
- Distribution of gas and related products
- Exploration as a service to the oil and natural gas industries
- Drilling wells as a service to the exploration and production of oil and natural gas

- **Power Generation³¹:**

All companies deriving 50% or more aggregate revenue from thermal coal based power generation, liquid fuel based power generation and natural gas based power generation.

MSCI Controversies Exclusion criteria:

- **Environmental Harm³²:**

All companies assessed as having involvement in environmental controversies that are classified as Red (MSCI Environmental Controversy Score of 0) or Orange Flags (score of 1).

- A Red Flag indicates an ongoing, Very Severe controversy implicating a company directly through its actions, products, or operations.
- An Orange Flag indicates an ongoing Severe controversy implicating a company directly, or a Very Severe controversy that is either partially resolved or indirectly attributed to the company's actions, products, or operations.

- **Controversies³³:**

³¹ The Power generation Screen is applied from September 1, 2017.

³² The Environmental Harm Screen is applied from January 1, 2016.

³³ The Controversies Screen is applied from December 1, 2012.



All companies assessed as having involvement in controversies that are classified as Red Flags (MSCI Controversies Score of 0). A Red Flag indicates an ongoing, Very Severe controversy implicating a company directly through its actions, products, or operations.

Companies not assessed by MSCI Solutions on data for any of the following MSCI sustainability and climate products are not eligible for inclusion³⁴ in the Indexes.

- MSCI Controversy Score
- MSCI Climate Change Metrics
- MSCI Business Involvement Screening Research (BISR).

³⁴ The treatment of Unrated Companies for the three MSCI Research Products is applied from September 02, 2024 onwards.

Appendix II: Description of Alpha Score

The GEMTLT style factors targeted in the Optimized Index are the four style factor groups and their combinations: Momentum, Value, Quality and Volatility. The model data will be used from a day prior to the rebalancing date. Following are the definitions of factor groups currently used in the Optimized Index.

Momentum:

The Barra Momentum factor score for each security is the winsorized (at +/- 3) z-score of the Momentum factor taken from the relevant Barra Equity Model (currently GEMTLT).

Value:

The Value score for each security is currently based on earnings-based, asset-based and whole firm-based valuation metrics - currently captured by the following three factors, Book-to-Price, Earnings Yield and Long-term Reversal, from the relevant Barra Equity Model (currently GEMTLT). A sector-relative score is derived from the combined score by standardizing (z-score) the latter within each sector and winsorizing at +/- 3.

$$\text{Value}_i = (0.3) * \text{BtoP}_i + (0.6) * \text{EarningsYield}_i + (0.1) * \text{LT Reversal}_i$$

Quality:

The Quality score for each security is currently based on the following quality factors, Profitability, Investment Quality, Earnings Quality, and Leverage, from the relevant Barra Equity Model (currently GEMTLT). A sector-relative score is derived from the combined score by standardizing (z-score) the latter within each sector and winsorizing at +/- 3.

$$\text{Quality}_i = (0.2917) * \text{Profitability}_i + (0.2916) * \text{Investment Quality}_i + (0.2917) * \text{Earnings Quality}_i + (-1) * (0.125) * \text{Leverage}_i$$

Low Volatility:

The Low Volatility score for each security is defined as the winsorized (± 3) z-score of its exposure to the Residual Volatility factor from the relevant Barra Equity Model (currently GEMTLT).

$$\text{Low Volatility}_i = + (-1) * \text{Residual Volatility}_i$$

Appendix III: Defining Trade Limits

In the monthly Index Review, the Trade Limit for each security (i.e., the maximum-security weight change) is calculated as 20% of its Average Daily Traded Value, assuming a portfolio value of 1 billion USD:

Trade Limit = (20% * Average Daily Traded Value) / 1 billion

The Average Daily Traded Value of a security is calculated as the average of the daily traded values in the one month prior to the Rebalancing Date. The daily traded value of a security is equal to the number of shares traded during the day, multiplied by the closing price of that security.

Appendix IV: Handling Infeasible Optimizations

During the monthly Index Review, in the event that there is no optimal solution that satisfies all the optimization constraints defined in Section 2.4.5, the following constraint is relaxed, until an optimal solution is found:

- Relax the active weight of upper bound of the GICS® Sector in the long leg in steps of 0.05, up to 2.55x
- Relax the active weight of lower bound of the GICS® Sector in the long leg in steps of 0.05, up to 0.55x
- Relax the active weight of lower bound of the GICS® Sector in the short leg in steps of -0.05 up to -2.25x
- Relax the active weight of upper bound of the GICS® Sector in the short leg in steps of -0.05, up to -0.25x
- The constraints are relaxed alternately.

In the event that no optimal solution is found after all the above constraints have been relaxed over all the iterations, the Optimized Index will not be rebalanced for that monthly Index Review.

Appendix V: New Release of Barra[®] Equity Model or Barra[®] Optimizer

The methodology presently uses MSCI Barra Global Equity Model for Long-Term Investors (“GEMTLT”) 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 VI: Parameters used for the BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Index

	BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Index	Parameters
1	Currency of Calculation	USD
2	Return Variant of the BNPP World Barra Multi-Factor Market Beta 30% Screened Select L/S Variant 1 Index	Combined Return calculated based on Net return from Long Leg, Gross return from Short Leg and Total Return from Cash Index
3	Decrement Type	Fixed Percentage
4	Decrement Application	Geometric
5	Decrement Value	0.7%
6	Day-count Convention	Actual / 365
7	Index Floor	0
8	Decrement Frequency	Daily

Appendix VII: Methodology Set

The indexes are governed by a set of methodology and policy documents (“Methodology Set”), including the present index methodology document as mentioned below:

- Description of methodology set – www.msci.com/index/methodology/latest/ReadMe
- MSCI Corporate Events Methodology – www.msci.com/index/methodology/latest/CE
- MSCI Fundamental Data Methodology – www.msci.com/index/methodology/latest/FundData
- MSCI Index Calculation Methodology – www.msci.com/index/methodology/latest/IndexCalc
- MSCI Index Glossary of Terms – www.msci.com/index/methodology/latest/IndexGlossary
- MSCI Index Policies – www.msci.com/index/methodology/latest/IndexPolicy
- MSCI Global Industry Classification Standard (GICS) Methodology – www.msci.com/index/methodology/latest/GICS
- MSCI Global Investable Market Indexes Methodology – www.msci.com/index/methodology/latest/GIMI
- MSCI Global ex Controversial Weapons Indexes Methodology – <http://www.msci.com/index/methodology/latest/XCW>
- MSCI Decrement Indexes Methodology – www.msci.com/index/methodology/latest/Decrement
- MSCI Excess Return Indexes Methodology – <https://www.msci.com/index/methodology/latest/ExcessReturn>
- ESG Factors In Methodology*

The Methodology Set for the indexes can also be accessed from MSCI’s webpage <https://www.msci.com/index-methodology> in the section ‘Search Methodology by Index Name or Index Code’.

* ‘ESG Factors in Methodology’ contains the list of environmental, social, and governance factors considered, and how they are applied in the methodology (e.g., selection, weighting or exclusion). It can be accessed in the Methodology Set as described above.

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AMERICAS

United States	+ 1 888 588 4567 *
Canada	+ 1 416 687 6270
Brazil	+ 55 11 4040 7830
Mexico	+ 52 81 1253 4020

EUROPE, MIDDLE EAST & AFRICA

South Africa	+ 27 21 673 0103
Germany	+ 49 69 133 859 00
Switzerland	+ 41 22 817 9777
United Kingdom	+ 44 20 7618 2222
Italy	+ 39 02 5849 0415
France	+ 33 17 6769 810

ASIA PACIFIC

China	+ 86 21 61326611
Hong Kong	+ 852 2844 9333
India	+ 91 22 6784 9160
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Australia	+ 612 9033 9333
Taiwan	008 0112 7513 *
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