

# **Bloomberg Value & Growth Indices Methodology**

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## Introduction

The Bloomberg Value and Growth Indices are designed to represent broad market segments based on investment styles and sets of characteristics that are used by investment managers. The Bloomberg Value and Growth Indices are constructed based on a weighted combination of seven factors.

## Section 1: Index Overview

Name	See Appendix A: Index Names and Tickers
Ticker	See Appendix A: Index Names and Tickers
Currency	USD
Inception Date	2021-12-31
Base Date	2015-03-30
Publication	Weekdays

## Section 2: Index Eligibility Process

### Parent Universe

In order to be eligible for a Bloomberg Value & Growth Index, a security must be a member of the respective Bloomberg universe on the Selection Date.

Refer to the Appendix A: Index Names and Tickers for all the underlying parent universes for the various Bloomberg Value & Growth Indices.

## Section 3: Index Construction Process

### Index Selection Process:

#### *Determination of Value Growth Factors*

Each security's value and growth attributes are determined using two style characteristics: Value and Growth. Value and Growth are defined by their own descriptors.

### Value

The Value style characteristic is measured by four descriptors:

- Earnings Yield (EY): Trailing 12-month Net Income/Full Market Cap
- Book Value (BV): Total Common Equity/Full Market Cap
- Dividend Yield (DY): Total Cash Common Dividends/Full Market Cap
- Forward Earnings to Price (FPE): Long Term Growth/Price

$$EY = \frac{NET\_INCOME_t}{MC_t}$$

$$BV = \frac{TOT\_COM\_EQUITY_t}{MC_t}$$

$$DY = \frac{TOT\_CASH\_COM\_DVD_t}{MC_t}$$

$$FPE = \frac{IS\_EPS_t}{Fundamental\_Ticker\_Price_t}$$

### Growth

The Growth style characteristic is measured through three descriptors:

- Sales Trend (GT): Slope of trailing 12-month Revenue over previous 5 years over Average of Absolute Value of Revenue in each of the previous 5 years.

$$GT = \frac{SLOPE(SALES\_REV\_TURN_t; \dots; SALES\_REV\_TURN_{t-4})}{\left(\frac{\sum_{i=1}^5 ABS(SALES\_REV\_TURN_i)}{5}\right)}$$

- Profit Trend (PT): Slope of trailing 12-month Net Income over previous 5 years over Average of Absolute Value of Net Income in each of the previous 5 years.

$$PT = \frac{SLOPE(NET\_INCOME_t; \dots; NET\_INCOME_{t-4})}{\left(\frac{\sum_{i=1}^5 ABS(NET\_INCOME_i)}{5}\right)}$$

- Earnings Per Share Long Term Growth (LTGEPS): Expected annual increase in operating earnings over the company's next full business cycle.

Where:

NET\_INCOME = Trailing 12-month Net Income

SALES\_REV\_TURN = Trailing 12-month Revenue

TOT\_COM\_EQUITY = Total Common Equity

TOT\_CASH\_COM\_DVD = Total Cash Common Dividends

MC = Full Market Cap

t = Selection date, defined below

t-n (n in {1,...,4}) = Selection Date - n year

### Winsorizing

In order to reduce the effect of outliers, each descriptor in {EY, BV, DY, GT, PT, FPE, and LTGEPS} is winsorized at the 5<sup>th</sup> and 95<sup>th</sup> percentile.

Note:

- Any descriptor that is NULL will not take part in the winsorizing of that descriptor
- For EY, BV, DY, if the descriptor is less than or equal to 0, it will assume the behavior of that of a NULL value and will not be included in the winsorizing of that descriptor

### Determination of Z-Scores

A Z-Score is calculated for each descriptor (Z(DES)) such that:

$$Z(DES) = \frac{(DES - AVG(DES))}{STDEV(DES)}$$

Where:

DES = Winsorized value of each descriptor in { EY, BV, DY, GT, PT, FPE, and LTGEPS }

AVG(DES) = Average of the winsorized values of all securities for each descriptor in { EY, BV, DY, GT, PT, FPE, and LTGEPS }

STDEV(DES) = Standard Deviation of the winsorized values of all securities for each descriptor in { EY, BV, DY, GT, PT, FPE, and LTGEPS }

## Determination of Value Growth Composite ("Comp") Score

### Composite Z-Score

$$Z(Comp) = Z(DES)_{EY} + Z(DES)_{BV} + Z(DES)_{DY} + Z(DES)_{FPE} - Z(DES)_{GT} - Z(DES)_{PT} - Z(DES)_{LTGEPs}$$

Note: The calculation of a company's value and growth composite score requires that:

- At least 1 of these three descriptor is not null: EY, BV, FPE
- At least 1 of these three descriptor is not null: GT, PT, LTGEPs

If both above conditions are not met, the composite score will be defined as the median of the available scores populated on their own merit.

The composite score is winsorized using the same method as the descriptors above. A Z-Score is calculated for the composite score ( $Z(Comp\_Score)$ ) such that:

$$Z(Comp) = \frac{(Comp - AVG(Comp))}{STDEV(Comp)}$$

### Value Growth Score

A Value Score is then calculated such that:

Value Cutoff = 70<sup>th</sup> percentile of Comp

Growth Cutoff = 30<sup>th</sup> percentile of Comp

$$Value\ Score = \begin{cases} 1, & Z(Comp) \geq Value\ Cutoff \\ (Z(Comp) - Growth\ Cutoff) / (Value\ Cutoff - Growth\ Cutoff), & Z(Comp) \geq Growth\ Cutoff \\ 0, & otherwise \end{cases}$$

$$Growth\ Score = 1 - Value\ Score$$

### Index Weighting

The Index is modified market capitalization weighted. A security's initial weight is determined by multiplying its Value or Growth Score (each being the Tilt Factor for the respective Index) by its benchmark free float market capitalization weight and then normalizing it such that:

$$VW_i = \frac{Value\ Score_i \times FMC_i}{\sum_1^M Value\ Score_i \times FMC_i} \qquad GW_i = \frac{Growth\ Score_i \times FMC_i}{\sum_1^M Growth\ Score_i \times FMC_i}$$

Where:

$VW_i$  = Initial weight of security i.

$GW_i$  = Initial weight of security i.

M = Number of Index Members

## Index Rebalance and Reconstitution

The Index is reconstituted semi-annually in March and September. The Index is rebalanced quarterly in March, June, September, and December.

## Selection Dates

The Index Eligibility Process and Index Selection Process are applied using data as of the last Wednesday in January and July.

## Share Determination Dates

Float Shares are determined using Shares Outstanding and Free Float as of any business day in the last week of January, April, July, and October.

The Index Shares are determined using prices as of the 1<sup>st</sup> business day on or prior to the 3<sup>rd</sup> Wednesday in February, May, August, and November.

Value and Growth Scores are determined using company fundamentals as of any business day in the last week in January and July.

## Index Announcement Dates

An Index Reconstitution Announcement Date shall be the last Wednesday in February and August. An Index Rebalance Announcement Date shall be the last Wednesday in February, May, August, and November.

## Index Effective Dates

The Index Reconstitutions go effective at the close of trading on the 2<sup>nd</sup> Wednesday in March and September. The Index Rebalances go effective at the close of trading on the 2<sup>nd</sup> Wednesday in March, June, September, and December.

		Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
<b>Selection Date</b>	Last Week	X						X					
<b>Shares Outstanding</b>	Last Week	X			X			X			X		
<b>Prices</b>	3 <sup>rd</sup> Wed		X			X			X			X	
<b>Value / Growth Scores</b>	Last Week	X						X					
<b>Announcement Date</b>	Last Wed		X			X			X			X	
<b>Effective Date</b>	2 <sup>nd</sup> Wed			X			X			X			X

## Section 4: Index Maintenance

### Index Calculation

Refer to the [Bloomberg Global Equity Indices Methodology](#) for index calculation details.

## Deletion Policy

Index securities are not deleted outside of the quarterly reconstitution except in the case of a delisting.

## Addition Policy

Index securities are not added outside of the Index reconstitution.

- IPOs that qualify to be fast tracked to the underlying parent universe are added equally to the Value and Growth associated indices with an assigned 0.5 Tilt Factor (0.5).
- For a spin-off, a child distributed from an Index Member is added to the Index on the ex-date with the same Tilt Factor than its parent company. The security's score will then be assessed as part of the forthcoming Index Review.

## Replacement Policy

Index securities are not replaced outside of the Index reconstitution.

## Corporate Actions

Refer to [Bloomberg Global Equity Indices Corporate Action Methodology](#) for the treatment of corporate actions.

## Risks

The following is a summary of certain risks associated with the Index but is not meant to be an exhaustive list of all risks associated with the Index. Although the Index is designed to be representative of the markets it is measuring, it may not be representative of every use case. There is also inherent, though transparent, judgment in its construction, as outlined in this methodology. The Index is designed for general applicability and not to address the individual circumstances and needs of users. BISL does not advise about the usefulness of the Index to a particular circumstance; users are therefore encouraged to seek their own counsel for such matters. This methodology is subject to change, which may impact its usefulness to users. Although efforts will be made to alert users of any change, every individual user may not be aware of them. Such changes may also significantly impact the usefulness of the Index. BISL may also decide to cease publication of this Index. BISL maintains internal policies regarding user transitions, but no guarantee is given that an adequate alternative is available generally or for a particular use case. Markets for stocks, as with all markets, can be volatile. As the Index is designed to measure this market, it could be materially impacted by market movements, thus significantly affecting the use or usefulness of the Index for some or all users. Also, certain equity markets are less liquid than others – even the most liquid markets may suffer periods of illiquidity. Illiquidity can have an impact on the quality or amount of data available to BISL for calculation and may cause the Index to produce unpredictable results.

## Limitations of the Index

Though the Index is designed to be representative of the markets it measures or otherwise aligns with its stated objective, it may not be representative in every case or achieve its stated objective in all instances. It is designed and calculated strictly to follow the rules of this methodology, and any Index level or other output is limited in its usefulness to such design and calculation.

Markets can be volatile, including those market interests that the Index measures or upon which the Index is dependent to achieve its stated objective. For example, illiquidity can have an impact on the quality or amount of data available to the administrator for calculation and may cause the Index to produce unpredictable or unanticipated results.

In addition, market trends and changes to market structure may render the objective of the Index unachievable or to become impractical to replicate by investors.

In particular, the Index measures global equity markets. As with all equity investing, the Index is exposed to market risk. The value of equities fluctuate with the changes in economic forecasts, interest rate policies established by central banks and perceived geopolitical risk. The Index does not take into account the cost of replication and as a result a tracking portfolio's returns will underperform the Index with all else equal. As the Index is designed to measure those markets, it could be materially impacted by market movements, thus significantly impacting the use or usefulness of the fixings for some or all users.

In addition, certain Sub-Indices may be designed to measure smaller subsets of the Index such as specific styles, size, and sector. Some of these Sub-Indices have very few qualifying constituents and may have none for a period of time. During such period, the Sub-Index will continue to be published at its last value, effectively reporting a 0% return, until new constituents qualify. If no constituents are expected to qualify (due to changes in market structure and other factors), the Sub-Index may be discontinued. In such an event, this discontinuation will be announced to index users.

## Section 5: Benchmark Oversight and Governance

### **Benchmark governance, audit and review structure**

Please refer to the BISL Benchmark Procedures Handbook available [here](#).

### **Index and data reviews**

Please refer to the BISL Benchmark Procedures Handbook available [here](#).

### **Expert judgement**

Please refer to the BISL Benchmark Procedures Handbook available [here](#).

### **Conflicts of interest**

Please refer to the BISL Benchmark Procedures Handbook available [here](#).

### **Restatement policy**

Please refer to the BISL Benchmark Procedures Handbook available [here](#).

### **Cessation policy**

Please refer to the BISL Benchmark Procedures Handbook available [here](#).



## Appendix A: Index Names & Tickers

Index Name	Price	Net	Total
Bloomberg US Mid Cap Value Index USD	BMIDV	BMIDVN	BMIDVT
Bloomberg US Mid Cap Growth Index USD	BMIDG	BMIDGN	BMIDGT
Bloomberg Developed Markets Large & Mid Cap Value Index USD	DMV	DMVTR	DMVN
Bloomberg Developed Markets Large & Mid Cap Growth Index USD	DMG	DMGTR	DMGN
Bloomberg Developed Markets ex North America Large & Mid Cap Value Index USD	DXAVP	DXAVN	DXAVT
Bloomberg Developed Markets ex North America Large & Mid Cap Growth Index USD	DXAGPR	DXAGNR	DXAGT
Bloomberg Emerging Markets Large & Mid Cap Value Index USD	EMV	EMVN	EMVT
Bloomberg Emerging Markets Large & Mid Cap Growth Index USD	EMG	EMGNR	EMGRTR
Bloomberg Europe Developed Markets Large & Mid Cap Value Index USD	EDVM	EDMVT	EDMVN
Bloomberg Europe Developed Markets Large & Mid Cap Growth Index USD	EDMG	EDMGT	EDMGN
Bloomberg World Large & Mid Cap Value Index USD	WORLDV	WORLDVT	WORLDVN
Bloomberg World Large & Mid Cap Growth Index USD	WORLDG	WORLDGT	WORLDGN
Bloomberg World ex US Large & Mid Cap Value Index USD	WLDXUSVP	WLDXUSVN	WLDXUSVT
Bloomberg World ex US Large & Mid Cap Growth Index USD	WLDXUSGP	WLDXUSGN	WLDXUSGT
Bloomberg World ex US Small Cap Value Index USD	WDXUSCVP	WDXUSCVN	WDXUSCVT
Bloomberg World ex US Small Cap Growth Index USD	WDXUSCGP	WDXUSCGN	WDXUSCGT

## Appendix B: ESG Disclosure

<b>EXPLANATION OF HOW ENVIRONMENTAL, SOCIAL AND GOVERNANCE (ESG) FACTORS ARE REFLECTED IN THE KEY ELEMENTS OF THE BENCHMARK METHODOLOGY</b>	
<b>1.</b> Name of the benchmark administrator.	Bloomberg Index Services Limited ("BISL")
<b>2.</b> Type of benchmark	Equities
<b>3.</b> Name of the benchmark or family benchmarks.	Bloomberg Value Growth Index Methodology
<b>4.</b> Does the benchmark methodology for the benchmark or family of benchmarks take into account ESG factors?	No
<p><b>5.</b> Where the response to Item 4 is positive, please list below, for each family of benchmarks, those ESG factors that are taken into account in the benchmark methodology, taking into account the ESG factors listed in Annex II to Delegated Regulation (EU) 2020/1816. Please explain how those ESG factors are used for the selection, weighting or exclusion of underlying assets. The ESG factors shall be disclosed at an aggregated weighted average value at the level of the family of benchmarks.</p>	
a) List of environmental factors considered:	N/A
b) List of social factors considered:	N/A
c) List of governance factors considered:	N/A
<p><b>6.</b> Where the response to Item 4 is positive, please list below, for each benchmark, those ESG factors that are taken into account in the benchmark methodology, taking into account the ESG factors listed in Annex II to Delegated Regulation (EU) 2020/1816, depending on the relevant underlying asset concerned. Please explain how those ESG factors are used for the selection, weighting or exclusion of underlying assets. The ESG factors shall not be disclosed for each constituent of the benchmark, but shall be disclosed at an aggregated weighted average value of the benchmark. Alternatively, all of this information may be provided in the form of a hyperlink to a website of the benchmark administrator included in this explanation. The information on the website shall be easily available and accessible. Benchmark administrators shall ensure that information published on their website remains available for five years</p>	
a) List of environmental factors considered:	As above
b) List of social factors considered:	As above
c) List of governance factors considered:	As above
<b>7.</b> Data and standards used.	
a) Data input. <i>(i) Describe whether the data are reported, modelled or, sourced internally or externally.</i> <i>(ii) Where the data are reported, modelled or sourced externally, please name the third party data provider.</i>	N/A
b) Verification of data and guaranteeing the quality of those data. <i>Describe how data are verified and how the quality of those data is ensured.</i>	N/A
c) Reference standards <i>Describe the international standards used in the benchmark methodology.</i>	N/A
Date on which information has been last updated and reason for the update:	12 July 2022, Initial publication of disclosure

## Version Control

### December 2021

- Index Methodology Creation

### July 2022

- Addition of World Value Growth Tickers to Appendix A

### April 2024

- Corporate action methodology applicable to Value & Growth Indices changed from Non-Market Cap to Market Cap

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