Index Methodology

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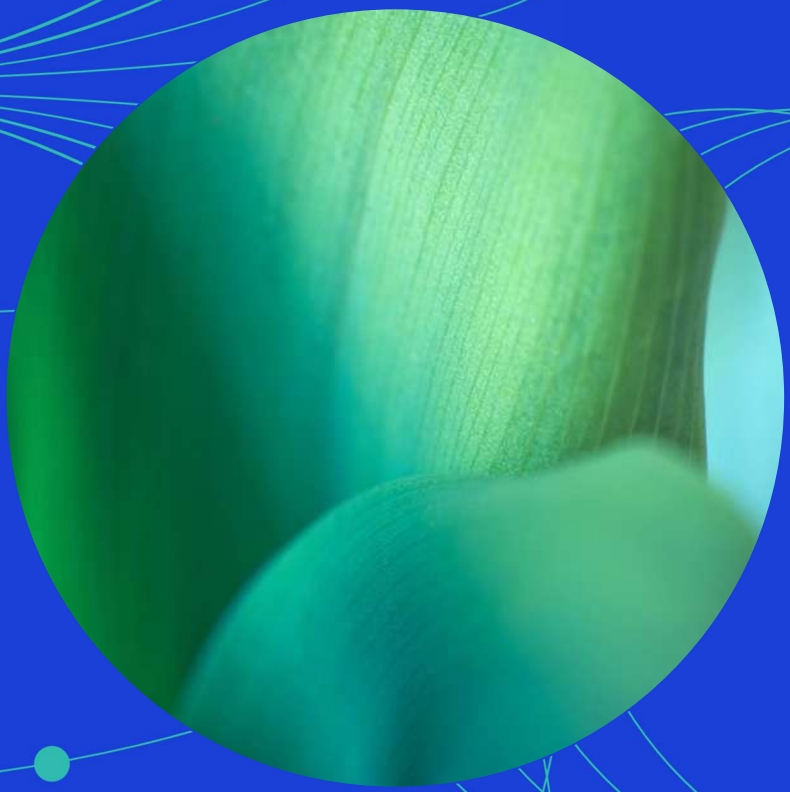
MSCI US Indexes Methodology



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1 Introduction

The MSCI US Market Cap Indexes are designed to support investors seeking exposure to well-defined size segments of the US equity market, each targeting a fixed number of issuer constituents.

MSCI constructs the MSCI US Market Cap Indexes from a US equity universe comprising all eligible listed equity securities classified in the United States that satisfy MSCI's investability screens, as described in Section 2.1. From this universe, MSCI applies size segmentation in which each segment contains a target number of issuer constituents, maintained through a defined buffer rule during rebalancing.

MSCI derives the MSCI US Value and Growth Indexes from the market capitalization size-segment indexes described above, applying the MSCI Value and Growth Indexes Methodology independently to each size segment. Each value and growth index targets 50% of the free float-adjusted market capitalization of the relevant size-segment index. MSCI conducts a style classification at the security level using a multi-factor, two-dimensional framework.

2 Constructing the Index

2.1 Eligible Universe

The US Equity Universe for the MSCI US Market Cap Indexes is defined by identifying eligible equity securities classified in the United States as per MSCI's Country of Classification Framework and applying investability screens to determine which securities are eligible for inclusion, as described below.

2.1.1 Eligible equity securities

All listed equity securities, including Real Estate Investment Trusts (REITs), are eligible for inclusion in the US Equity Universe. Limited partnerships, limited liability companies, and business trusts, which are listed in the USA and are not structured to be taxed as limited partnerships, are likewise eligible for inclusion in the US Equity Universe. Conversely, mutual funds, ETFs, equity derivatives, and most investment trusts are not eligible for inclusion in the US Equity Universe.

Preferred shares that exhibit characteristics of equity securities are eligible. As the definition of the preferred shares may vary from one company to another, MSCI analyses this type of security on a case-by-case basis. The key criterion for a preferred share to be eligible is that it should not have features that make it resemble – and behave like – a fixed income security, such as the entitlement to a fixed dividend and/or, in case of liquidation, an entitlement to a company's net assets which is limited to the par value of the preferred share. On the other hand, preferred shares whose only difference compared to common shares is a limited voting power are eligible for inclusion in the US Equity Universe.

Stapled securities are considered eligible if each of the underlying components exhibit characteristics of equity securities.

2.1.2 Investability Screens

Some of the investability requirements are applied at the individual security level and some at the overall company level, represented by the aggregation of individual securities of the company. As such, the inclusion or exclusion of one security does not imply the automatic inclusion or exclusion of other securities of the same company.

The investability screens used to determine the US Equity Universe are:

- Equity Universe Minimum Size Requirement.
- Equity Universe Minimum Free Float-Adjusted Market Capitalization Requirement.
- Minimum Liquidity Requirement.
- Minimum Domestic Inclusion Factor Requirement.
- Minimum Length of Trading Requirement.
- Financial Reporting Requirement.

- Global Industry Classification Standard (GICS®)[1] Requirement

Equity Universe Minimum Size Requirement

This investability screen is applied at the company level. In order to be included in the US Equity Universe, a company must have the required minimum full market capitalization. This minimum full market capitalization is referred to as the Equity Universe Minimum Size Requirement and is derived as follows:

- First, companies in the developed market equity universe are sorted in descending order of full market capitalization and the cumulative coverage of the free float-adjusted market capitalization of that universe is calculated at each company.
- Second, when the cumulative free float-adjusted market capitalization coverage of 99% of the sorted universe is achieved, the full market capitalization of the company at that point defines the Equity Universe Minimum Size Requirement.
- The rank of this company by descending order of full market capitalization is noted and will be used in determining the Equity Universe Minimum Size Requirement at the next rebalance.

Equity Universe Minimum Free Float-Adjusted Market Capitalization Requirement

This investability screen is applied at the individual security level. To be eligible for inclusion in the US Equity Universe, a security must have a free float-adjusted market capitalization equal to or higher than 50% of the Equity Universe Minimum Size Requirement.

Minimum Liquidity Requirement

This investability screen is applied at the individual security level. To be eligible for inclusion in the US Equity Universe, a security must meet the Minimum Liquidity Requirement, measured by the 12-month and 3-month Annual Traded Value Ratio (ATVR)[2] and the 3-month Frequency of Trading. A minimum liquidity level of 20% of 3-month ATVR and 90% of 3-month Frequency of Trading over the last four consecutive quarters, as well as 20% of 12-month ATVR are required for the inclusion of a security in the US Equity Universe.

The ATVR mitigates the impact of extreme daily trading volumes and takes into account the free float-adjusted market capitalization of securities. The aim of the 12-month and 3-month ATVR together with 3-month Frequency of Trading is to select securities with a sound long and short-term liquidity.

If 12 months of data are not available, then the number of months for which data is available (previous six months, three months or one month) is used for the calculation of 12-month ATVR. If three months of

[1] GICS®, the global industry classification standard jointly developed by MSCI and S&P Dow Jones Indices. For more information visit https://www.msci.com/indexes/index-resources/gics

[2] For details on calculation of Annualized Traded Value, please refer to MSCI Liquidity Data Methodology book, available at https://www.msci.com/index-Methodology.

data are not available, one month of data is used for the calculation of the 3-month ATVR and 3-month Frequency of Trading.

Concerning the level of a stock price, there may be liquidity issues for securities trading at a very high stock price. Hence, a limit of USD 10,000 has been set and securities with stock prices above USD 10,000 fail the liquidity screening. This rule applies only for non-constituents of the Index. Consequently, current constituents of the Index would remain in the index if the stock price passes the USD 10,000 threshold.

An existing constituent of the Index may remain in the US Equity Universe if its 12-month ATVR falls below the Minimum Liquidity Requirement as long as it is above two-thirds of the minimum level requirement of 20%, i.e., 13.3%. In addition, in order to remain in the Index the existing constituent must have a 3-month ATVR of at least 5% and a 3-month Frequency of Trading of at least 80%.

Minimum Domestic Inclusion Factor Requirement

This investability screen is applied at the individual security level. To be eligible for inclusion in the US Equity Universe, a security's Domestic Inclusion Factor (DIF) must reach a certain threshold. The DIF of a security is defined as the proportion of shares outstanding that is available for purchase in the public equity markets by domestic investors. In general, a security must have a DIF equal to or larger than 0.15 to be eligible for inclusion in the US Equity Universe.

Minimum Length of Trading Requirement

This investability screen is applied at the individual security level. For an IPO to be eligible for inclusion in the US Equity Universe, the new issue must have started trading at least three months before the implementation of a quarterly Index Review.

Financial Reporting Requirement

This investability screen is applied at the company level. Companies classified in the United States as per MSCI's Country of Classification Framework must file a Form 10-K/10-Q to be eligible for inclusion in the Investable Equity Universe.

Global Industry Classification Standard (GICS®) Requirement

Securities must be classified under the Global Industry Classification Standard (GICS®) to be eligible for inclusion.

2.1.3 Minimum Free Float-Adjusted Market Capitalization Requirement

Under the broader MSCI equity index construction framework, MSCI determines Market Size-Segment Cutoffs and associated Minimum Size Ranges for each size segment of the US equity market. These cutoffs and ranges are derived independently of the number-locked segmentation described in Section 2.2 and reflect the size boundaries used across MSCI's global index construction process. The Minimum Size Range for a given size segment is defined as 0.5 times to 1.15 times the applicable Minimum Size Reference for that segment.

Securities assigned to the MSCI US Market Cap Indexes must satisfy the following minimum free float-adjusted market capitalization threshold, determined by reference to the Market Size-Segment Cutoff and Minimum Size Range applicable to the size segment in which the issuer falls under the broader MSCI framework:

- If the Market Size-Segment Cutoff falls within the Minimum Size Range, a security can be included only if its free float-adjusted market capitalization is at least 50% of the Market Size-Segment Cutoff.
- If the Market Size-Segment Cutoff is above the upper boundary of the Minimum Size Range, the security's free float-adjusted market capitalization must be at least 50% of the upper boundary of the Minimum Size Range.
- If the Market Size-Segment Cutoff is below the lower boundary of the Minimum Size Range, the security's free float-adjusted market capitalization must be at least 50% of the lower boundary of the Minimum Size Range.
- Any company excluded from a size-segment index based on this rule is also excluded from any composite index that incorporates that segment.

For a security with a Domestic Inclusion Factor (DIF) lower than 0.15, its free float-adjusted market capitalization must be at least 1.8 times the minimum free float-adjusted market capitalization threshold described above.

Existing Constituents

During quarterly Index Reviews, existing constituents may remain if their free float-adjusted market capitalization is at least two-thirds (2/3) of the applicable minimum free float-adjusted market capitalization threshold described above. Existing constituents with a DIF of less than 0.15 must meet two-thirds of the 1.8 times threshold.

2.2 Size Segmentation

MSCI segments constituents of the eligible universe using a target number of issuers approach. Each size-segment index targets a pre-defined number of issuers, selected by descending rank of full market capitalization within the eligible universe.

The indexes are built in a sequential order, where the MSCI US 500 is built as the largest 500 issuers, followed by the MSCI US 400 Index which represents the next 400 issuers in size, and the MSCI US 600 Index represents the following 600 issuers. Therefore, there are no gaps nor overlaps between these indexes.

Similarly, the MSCI US 1000 Index is built as the largest 1,000 issuers and the MSCI US 2000 represents the next 2,000 issuers in size. There are no gaps nor overlaps between the two and the MSCI US 3000 Index is the resulting composite index of the MSCI US 1000 and the MSCI US 2000 Indexes.

The below table outlines the target issuers by size segmentation:

Index	Number of Constituents	Target Issuers (Based on descending full company market capitalization)
MSCI US 500	500	Issuers ranked 1-500
MSCI US 400	400	Issuers ranked 501-900
MSCI US 600	600	Issuers ranked 901-1,500
MSCI US 1000	1000	Issuers ranked 1-1,000
MSCI US 2000	2000	Issuers ranked 1001-3,000
MSCI US 3000	3000	Issuers ranked 1-3,000

2.2.1 Buffer Zones

The MSCI US Indexes are managed with the objective of reflecting the evolution of equity markets and equity market segments in a timely fashion. In reviewing its various sub-indexes, MSCI's goal is to strike a balance between ensuring that the various indexes continue to accurately reflect the different investment processes and their opportunity sets and at the same time minimize index turnover.

Therefore, a buffer is applied during each quarterly Index Review reducing unnecessary turnover and limiting the impact of temporary fluctuations in market capitalization rank.

Upside and Downside Buffer Zones for Market Capitalization Indexes (Company Rank)

Index	Index Segment Definition	Upside Buffer Zone	Downside Buffer Zone
MSCI US 500	1-500	-	501-725
MSCI US 400	501-900	276-500	901-1,080
MSCI US 600	901-1,500	721-900	1,501-1,770
MSCI US 1000	1-1,000	-	1,001-1,450
MSCI US 2000	1,001-3,000	551-1,000	3,001-3,900
MSCI US 3000	1-3,000	-	3,001-3,900

2.3 Index Weighting

Within each market capitalization size-segment index, MSCI weights constituents by free float-adjusted market capitalization. The weight of each constituent reflects the proportion of its free float-adjusted market capitalization relative to the aggregate free float-adjusted market capitalization of all constituents in that size-segment index.

3 Constructing the MSCI US Value and Growth Indexes

MSCI constructs the MSCI US Value and Growth Indexes by applying the following methodology independently to each of the MSCI US 1000 and MSCI US 2000 Indexes described in Section 2.2. MSCI derives the MSCI US 3000 Value and Growth Indexes by aggregating the value and growth segments of the MSCI US 1000 and MSCI US 2000 based on size allocation.

MSCI applies value and growth style variables in accordance with the size segment assigned in the MSCI US Indexes. Consistent with the MSCI Global Value and Growth Indexes Methodology, MSCI does not use the Long-term Forward Earnings per Share (EPS) Growth Rate in the value and growth calculation for small-cap securities. Hence, MSCI excludes the Long-term Forward EPS Growth Rate from the style contribution calculation for the MSCI US 2000 Value and Growth Indexes.

Construction involves the following five steps, applied independently within each size segment:

- MSCI determines the values of the variables used to specify value and growth characteristics for each security.
- MSCI calculates the z-scores of each variable for each security.
- MSCI aggregates the style z-scores for each security to determine the security's overall style characteristics.
- MSCI assigns initial style inclusion factors for each security.
- MSCI allocates securities to the value and growth indexes, targeting 50% free float-adjusted market capitalization after applying buffer rules.

The following subsections describe each of these steps in detail.

3.1 Variables used to specify value and growth characteristics

MSCI defines value investment style characteristics using three variables:

- Book Value to Price Ratio (BV/P)
- 12-month Forward Earnings to Price Ratio (E fwd/P)
- and Dividend Yield (D/P).

For these variables, securities of the same company may have different values due to different security prices. In addition, the dividend rate may differ from one security to another of the same company. As a result, in certain circumstances, one security of a company may be classified as value and another as growth. In the above three variables, the price is used in the denominator in order to compute meaningful market means and standard deviations for these variables.

MSCI defines growth investment style characteristics using five variables:

- Long-term Forward EPS Growth Rate (LT fwd EPS G)
- Short-term Forward EPS Growth Rate (ST fwd EPS G)

- Current Internal Growth Rate (g)
- Long-term Historical EPS Growth Trend (LT his EPS G)
- and Long-term Historical Sales per Share (SPS) Growth Trend (LT his SPS G).

For these variables, all securities of the same company have the same variable values for each of the five variables used to define growth investment style characteristics for index construction unless there is a difference in dividend payout, which will result in a difference in the Current Internal Growth Rate (g).

MSCI does not use the Long-term Forward EPS Growth Rate for securities assigned to the MSCI US 2000 size segment. MSCI does not calculate a Long-term Historical SPS Growth Trend for securities classified in the Banks (4010) and Financial Services (4020) industry groups, other than securities classified in the Multi-Sector Holdings (40201030), Financial Exchanges & Data (40203040) and Transaction & Payment Processing Services (40201060) sub-industries under the Global Industry Classification Standard (GICS).

For further details on definitions and computations of the variables, see Appendix II, entitled "Variable Definitions and Computations".

3.2 Calculating Z-Scores

After computing the eight variable values for each security, each of the eight variable values are standardized within each individual market capitalization index and assigned a z-score. Standardization ensures that the variables are comparable to each other and that the combination of the variables is meaningful.

3.2.1 Winsorizing the variable

As part of the standardization process, outlier variable values are winsorized to ensure that the market average values used to standardize the variables are less affected by extreme values.

To do this, for a given variable, the values for all securities are first ranked by ascending order within each market capitalization index. Missing values are excluded from the ranking. Then, for values that lie in the bottom 5th percentile rank or in the top 95th percentile rank, the value of the 5th and the 95th percentile rank security is allocated respectively. This process is repeated for each of the eight variables.

Example Winsorization: Suppose there are 200 securities ranked by ascending order. For all securities ranked from 1 through 9, their values become equal to the value of the 10th ranked security. Meanwhile, for all securities ranked from 192 through 200, their values become equal to the value of the 191st ranked security.

3.2.2 Calculating the Z-Scores

After winsorizing all the eight variables within each market capitalization index, the z-score for each of the eight variables for each security can be calculated using the free float-adjusted market capitalization

weighted market mean and standard deviation of the relevant variable within each market capitalization index.

Computing a z-score is a widely used method of standardizing a variable in order to combine it with other variables that may have a different unit of measurement or a different scale. Because it has a mean value of zero and a standard deviation of 1, the value of a z-score shows how many standard deviations a given value lies from the mean. The z-score is defined as follows:

$$Z = \frac{\left(x - \mu_{mcap-weighted}\right)}{\sigma_{mcap-weighted}}$$

Where:

- x is the winsorized variable value for a given security
- μ is the free float-adjusted market capitalization weighted market mean using winsorized variables in the market capitalization index
- σ is the free float-adjusted market capitalization weighted market standard deviation using winsorized variables in the market capitalization index

For further details on the calculation of the market mean and the standard deviation, see Appendix III, entitled "Calculation of Market Mean and Standard Deviation".

Example:
Calculating Dividend Yield Z-Scores

	Index	Security A	Security B	Security C
Mean dividend yield for the market capitalization index	2.50			
Standard deviation of dividend yield for the market capitalization index	1.38			
Dividend yield		3.50	0.90	2.50
Dividend yield z-score	**0.72**	**-1.16**	**0.00**	

Security A has a positive dividend yield z-score. This implies that based on dividend yield, Security A exhibits clear value characteristics, as its dividend yield value of 3.5 is 0.72 standard deviation above the market dividend yield of 2.5. On the other hand, a dividend yield z-score of –1.16 for Security B implies that its dividend yield value of 0.9 is 1.16 standard deviation below the market dividend yield. In other words, Security B exhibits clear non-value characteristics, based on dividend yield. As for Security C, a z-score of 0 implies that the security has the same dividend yield value as the market mean.

3.3 Aggregating the Style Z-Scores

After standardizing each of the eight variable values for each security, MSCI calculates a value z-score and a growth z-score for each security. Value z-scores are computed by averaging the three value variable z-scores while growth z-scores are calculated by averaging the five growth variable z-scores. The value

z-score and the growth z-score of a security define its overall style characteristics and its positioning within the value and growth style space.

3.3.1 Calculating the Value Z-Score

To compute a value z-score, an equally weighted average of the three value variables' z-scores is calculated. Only available variable z-scores are used and missing variable z-scores are excluded from the calculation.

The value z-score is calculated as follows:

$$Value\ Z\text{–}Score = \frac{1}{3}\left(Z_{BV/P} + Z_{E\,fwd/P} + Z_{D/P}\right)$$

For instance, if the E fwd /P variable is missing:

$$Value\ Z\text{–}Score = \frac{1}{2}\left(Z_{BV/P} + Z_{D/P}\right)$$

Example:
Calculating the Value Z-Score:

	Security A	Security B	Security C
Book value to price z-score	0.90	0.80	-1.60
12-month forward earnings to price z-score	0.78	1.86	-2.0
Dividend yield z-score	0.72	-1.16	0.00
Value Z-Score	**0.80**	**0.50**	**-1.20**

3.3.2 Calculating the Growth Z-Score

For the calculation of the growth z-score, the z-score for long-term forward EPS growth rate is given a double weight for the MSCI US 1000 Value and Growth Indexes, as it is the most systematically associated with the concept of growth and it captures growth style attributes relatively more effectively than other variables. As a reminder, the z-score for long-term forward EPS growth rate is not taken into account for the US 2000 Value and Growth Indexes.

When computing the growth z-score, missing variable z-scores are excluded from the calculation.

The long-term historical SPS growth trend is not used to specify growth characteristics for securities classified in the Banks (4010) and Financial Services (4020) industry groups, other than securities classified in the Multi-Sector Holdings (40201030), Financial Exchanges & Data (40203040) sub-industries and Transaction & Payment Processing Services (40201060), under the Global Industry Classification Standard (GICS). In this case, only five variables are averaged, rather than replacing the sales growth trend with a zero value.

The growth z-score is calculated as follows:

$$Growth\ Z\text{–}Score = \frac{1}{6}\left(2 * Z_{LT\ fwd\ EPS\ G} + Z_{ST\,fwd\ EPS\ G} + Z_{g} + Z_{LT\ his\ EPS\ G} + Z_{LT\ his\ SPS\ G}\right)$$

For instance, if the long-term forward EPS growth rate variable is missing:

$$Growth\ Z\text{–}Score = \frac{1}{4}\left(Z_{ST\,fwd\ EPS\ G} + Z_{g} + Z_{LT\,his\ EPS\ G} + Z_{LT\,his\ SPS\ G}\right)$$

For a financial company:

$$Growth\ Z\text{–}Score = \frac{1}{5}\left(2 * Z_{LT\ fwd\ EPS\ G} + Z_{ST\,fwd\ EPS\ G} + Z_{g} + Z_{LT\,his\ EPS\ G}\right)$$

For the MSCI US 2000 Value and Growth Indexes, the z-score for the long-term forward EPS growth rate is not taken into account:

$$Growth\ Z\text{–}Score = \frac{1}{4}\left(Z_{ST\,fwd\ EPS\ G} + Z_{g} + Z_{LT\,his\ EPS\ G} + Z_{LT\,his\ SPS\ G}\right)$$

Example:
Calculating the Growth Z-Score:

	Security A	Security B	Security C
Long-term forward EPS growth rate z-score	-0.19	0.68	Not
Short-term forward EPS growth rate z-score	0.25	0.50	-0.20
Current Internal Growth Rate z-score	0.72	-1.16	-0.40
Long-term historical EPS growth trend z-score	0.30	1.00	-1.20
Long-term historical SPS growth trend z-score	0.10	Not Relevant (Financial Company)	0.50
Growth Z-Score	**0.17**	**0.34**	**-0.33**

Security A has all 5 variables available. Its growth z-score is the sum of the 5 variables with a double weight on the long-term forward EPS growth divided by 6. Security B is a financial company. Therefore, no long-term historical SPS growth trend is used and its growth z-score is computed using a 5 as the denominator. Finally, the long-term forward EPS growth rate variable is missing for Security C and the denominator will be 4.

3.3.3 Identifying the Overall Style Characteristics

After calculating the value and growth z-scores for each security, each security's overall style characteristics and position within the value and growth style space can be determined based on the table below.

Value Z-Score	Growth Z-Score	Style Characteristics
Positive	Negative or Zero	Value
Negative or Zero	Positive	Growth
Positive	Positive	Both Value and Growth

Negative or Zero	Negative or Zero	Neither Value nor Growth

3.4 Assigning Initial Style Inclusion Factors

Based on the overall style characteristics, securities are assigned initial style inclusion factors. At this time, securities that exhibit both value and growth or neither value nor growth characteristics are also adjusted for dominant style.

Each security has two style inclusion factors, one for value, defined as the Value Inclusion Factor (VIF), and the other for growth, defined as the Growth Inclusion Factor (GIF), and they represent the proportion of a security's free float-adjusted market capitalization that should be allocated to the value and/or growth indexes. The sum of the VIF and the GIF is always equal to one. There are five possible values for the style inclusion factors: 1, 0.65, 0.5, 0.35 and 0.

For instance, a VIF of 1 implies that the security's free float-adjusted market capitalization is fully allocated to the value index, while a VIF of 0.35 implies that only 35% of the security's free float-adjusted market capitalization is allocated to the value index. The sum of VIF and GIF is always equal to one. For example, a VIF of 0.35 will result in a GIF of 0.65. Exhibit 1 shows the various style inclusion factors within the value and growth style space, which will be described in detail in the following paragraphs.

3.4.1 Initial Style inclusion factors for securities with both value and growth or non-value and non-growth characteristics

For securities with style characteristics of both value and growth or neither value nor growth, their initial VIF and GIF can range between 0 and 1, depending on the contribution of the value (or non-growth, if the growth z-score is negative) and growth (or non-value, if the value z-score is negative) z-scores to the distance of a security from the origin.

The contribution of each style z-score to the distance from the origin is calculated as follows:

$$Value\ contribution = \frac{value\ Z-score^2}{distance^2} = \frac{value\ Z-score^2}{value\ Z-score^2 + growth\ Z-score^2}$$

$$Growth\ contribution = \frac{growth\ Z-score^2}{distance^2} = \frac{growth\ Z-score^2}{value\ Z-score^2 + growth\ Z-score^2}$$

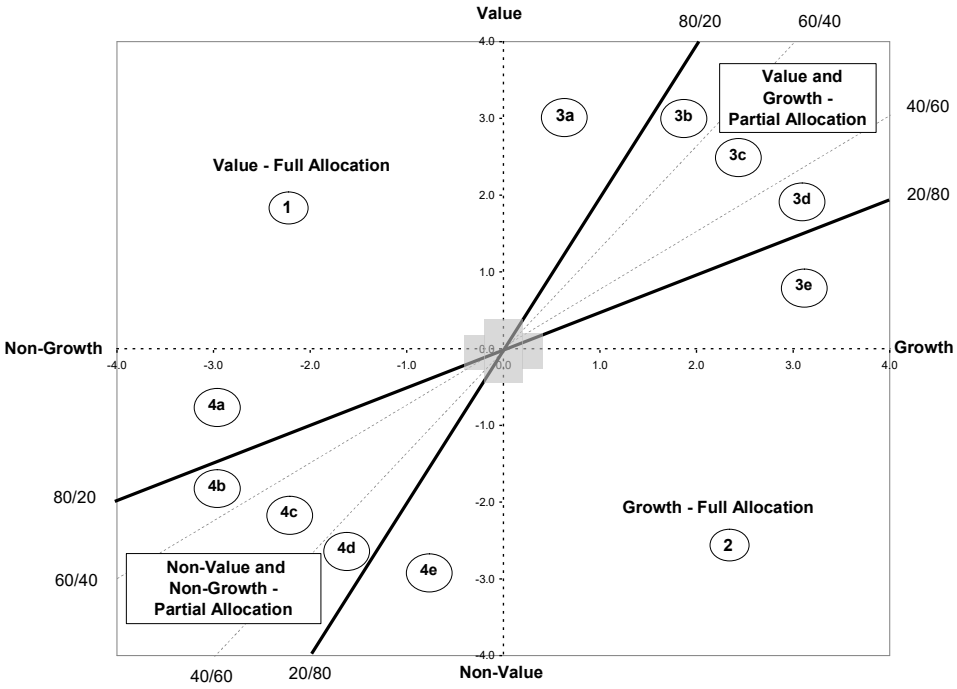
$$Value\ contribution + Growth\ contribution = 1$$

For securities where a style contribution of a positive style z-score (a negative style z-score) is at least 80% (less than 20%), that style is deemed to clearly dominate the other style. Such securities are allocated with an initial VIF or GIF of 1, depending on whether value (non-growth) or growth (non-value)

contributed at least 80% (less than 20%) to the distance respectively. This is represented by the 80/20 line (20/80) in Exhibit 1, which corresponds to the value z-score (growth z-score) representing twice the growth z-score (value z-score), i.e., representing a contribution of 80% of the total distance from the origin.

Otherwise, if a style contribution ranges between more than 20% and less than 80%, the VIF and GIF are determined using the table below.

Exhibit 1 – MSCI Value and Growth Style Space, Allocating Initial VIF & GIF



Note: The values on the axes are z-scores. The point where the value and non-value axis intersects growth and non-growth axis, i.e., the origin, is located at a z-score of zero for each axis.

Zone	1	2	3a	3b	3c	3d	3e	4a	4b	4c	4d	4e
Style Characteristics	Value	Growth	Value/ Growth	Value/ Growth	Value/ Growth	Value/ Growth	Value/ Growth	Non-Value/ Non-Growth	Non-Value/ Non-Growth	Non-Value/ Non-Growth	Non-Value/ Non-Growth	Non-Value/ Non-Growth
Style Bias	Value	Growth	Value	Value-Bias	No Bias	Growth-Bias	Growth	Value	Value-Bias	No Bias	Growth-Bias	Growth
Initial VIF	1	0	1	0.65	0.5	0.35	0	1	0.65	0.5	0.35	0
Initial GIF	0	1	0	0.35	0.5	0.65	1	0	0.35	0.5	0.65	1

Example:
Calculating the Distance and the Style Contribution:

	Security A	*Security B*	*Security C*

Value z-score	0.80	0.50	-1.20
Growth z-score	0.20	0.50	-0.50
Value z-score squared	0.64	0.25	1.44
Growth z-score squared	0.04	0.25	0.25
Distance from the origin squared	0.68	0.50	1.69
Value contribution to the distance	**94%**	**50%**	**85%**
Growth contribution to the distance	**6%**	**50%**	**15%**
Initial VIF	**1**	**0.5**	**0**
Initial GIF	**0**	**0.5**	**1**

Security A's value contributes 94% of its overall style characteristics. Hence, the value z-score clearly dominates the growth z-score and a VIF of 1 is allocated to Security A. As for Security B, no style clearly dominates, as the contribution of the two style z-scores is equal at 50%. Therefore, a VIF and GIF of 0.5 is allocated to security B. For Security C, its value z-score and growth z-score are both negative. Hence, the non-value z-score contributes 85% and the non-growth z-score contributes 15%. This means that the growth z-score clearly dominates the value z-score, and as a result, a GIF of 1 is assigned to Security C.

3.5 Allocating securities to the value and growth indexes

The value and growth indexes target a 50% free float-adjusted market capitalization representation for each of the value and growth indexes in each market capitalization index. In order to achieve the 50% target, the style allocation process involves the following three steps:

- Sorting securities by distance from the origin in the style space.
- Applying buffer rules and reassigning initial VIF and GIF, as appropriate.
- Achieving the 50% free float-adjusted market capitalization target by allocating securities to the value and growth indexes.

3.5.1 Sorting securities by distance from the origin

In the allocation process, first all securities are sorted by distance from the origin. The strength of the security style characteristics is measured by the distance from the origin. Therefore, the security with the strongest style characteristics is the one with the greatest distance from the origin.

The distance from the origin (d) is computed as follows:

$$d = \sqrt{value\ \ z\text{–}score^{\,2} + growth\ \ z\text{–}score^{\,2}}$$

Example:
Calculating the Distance:

	Security A	*Security B*	*Security C*
Value z-score	0.80	0.50	-1.20
Growth z-score	0.20	0.50	-0.50
Value z-score squared	0.64	0.25	1.44
Growth z-score squared	0.04	0.25	0.25
Distance from the origin	**0.82**	**0.71**	**1.30**

Security C is the furthest away from the origin among the three securities. Therefore, it has the strongest style characteristics and is allocated to its appropriate style index first.

3.5.2 Applying buffer rules

Next, the initial style inclusion factors for all existing constituents are reviewed based on buffer rules. According to the buffer rules, all securities that fall in the buffers will not change their current style inclusion factors and remain in their current index or indexes, unless they need to be reassigned, if required, to meet the 50% target. Buffer rules help limit the index turnover caused by temporary migration of securities from one style index to the other and come into effect only at the semi-annual style index reviews.

The buffers are represented by a cross resulting from the overlap of a horizontal rectangle around the growth axis and a vertical rectangle around the value axis. The horizontal rectangle is defined by a value z-score between +/- 0.2 and a growth z-score between +/- 0.4 and the vertical rectangle is defined by a value z-score between +/- 0.4 and a growth z-score between +/- 0.2, as shown in the shaded area in Exhibit 1.

Example:
Reassigning Style Inclusion Factors Based on Buffer Rule:

	Security A	*Security B*	*Security C*
Value z-score	0.10	-0.07	0.15
Growth z-score	0.80	-0.05	-0.05
Falls in the buffers	no	yes	yes
Current VIF	1	0.5	0
Initial VIF	0	0.35	1
Post buffer VIF	0	0.5	0

Security A is not impacted by the buffer rules as its value and growth z-scores are not falling within the buffers. Hence, its initial style inclusion factors remain unchanged. Securities B and C are impacted by the buffer rules and therefore, their style inclusion factors are reassigned to the current style inclusion factors.

3.5.3 Allocating securities to reach 50% target

The allocation process starts by assigning to the appropriate style index the security that is the greatest distance away from the origin and hence possesses the strongest style characteristics, based on its initial VIF and GIF modified for buffers.

Allocating securities starting with those that are furthest away from the origin ensures that securities with the strongest style characteristics are allocated to their appropriate styles first. During the style allocation process, if two securities have the same distance, the security with a larger free float-adjusted market capitalization is allocated to its appropriate style index first.

The allocation process is stopped when adding a security to a particular style index results in the cumulative weight of that index exceeding the 50% free float-adjusted market capitalization representation target.

The security, which stopped the allocation process, is defined as the “middle security”. In this step, the allocation of the middle security is reviewed to determine how to best approximate the 50% target. If the middle security has a free float-adjusted market capitalization weight of less than 5% in the market capitalization index, its free float-adjusted market capitalization is allocated to the value or growth index that comes closest to the 50% target. If the middle security has a free float-adjusted market capitalization weight of more than 5% in the MSCI US Market Cap Index, its free float-adjusted market capitalization can be partially allocated to the value and growth indexes in order to be closer to the 50% target. The VIF and GIF for a middle security can be either 1, 0.65, 0.5, 0.35 or 0. Depending on the outcome of the attribution of this middle security, neither index may reach the 50% target and therefore the attribution process may continue.

Once the 50% target is reached, all remaining securities are allocated or reallocated to the index that has not yet reached the 50% target.

Therefore, some securities may be allocated to a style index that is different from their initial style classification. However, as the allocation process starts with securities having the strongest style characteristics and the remaining securities that are reassigned have relatively less pronounced style characteristics, the impact on the style indexes is expected to be modest.

Example:

Reallocating Securities with a Weight of Less than 5% to Reach 50% Target:

Securities	Distance	Security Weights	Cumulative Index Weight Value	Cumulative Index Weight Growth	Post Buffer VIF		Final VIF
A	3.74	0.1%	0.1%	0.0%	1.00		1.00
B	2.63	0.2%	0.3%	0.0%	1.00		1.00
C	2.49	0.1%	0.4%	0.0%	1.00		1.00
...	...	...	...	...	...		...
...	...	...	...	...	...		...
X	**0.33**	**1.3%**	**46.5%**	**50.2%**	**0.00**		**0.00**
Y	0.32	0.9%	47.4%	50.2%	**0.00**	Reallocated	**1.00**
...	...	...	...	...	...		...

Security A is the first security to be allocated as it is the furthest away from the origin and therefore has the strongest style characteristics. This security is assigned to the value index as its post buffer VIF is 1. As a result, the cumulative value index weight increases from 0% to 0.1%. The process continues until Security X is allocated. This security is allocated to the growth index according to its post buffer VIF and as a result, the cumulative growth index weight reaches 50.2%, above the 50% target. Security X is the "middle security". As a result, securities starting from Security Y are fully reallocated to the value index, even if their post buffer VIF is 0.

Example:

Reallocating Securities with a Weight of More than 5% to Reach 50% Target:

Securities	Distance	Security Weights	Cumulative Index Weight Value	Growth	Post Buffer VIF		Final VIF
A	3.74	0.1%	0.1%	0.0%	1.00		1.00
B	2.63	0.2%	0.3%	0.0%	1.00		1.00
C	2.49	0.1%	0.4%	0.0%	1.00		1.00
...	...	...	...	...	...		...
...	...	...	...	...	...		...
X	**0.33**	**5.3%**	**48.5%**	**50.6%**	**0.00**	Reallocated	**0.35**
Y	0.32	0.9%	49.4%	50.2%	**0.00**	Reallocated	**1.00**
...	...	...	...	...	...		...

In this example, Security X is the "middle security". It has a free float-adjusted market capitalization weight of more than 5% in the market capitalization index. According to its post buffer VIF, it should have been allocated to the growth index, resulting in a weight of 52.5% representation, above the 50% target. In this case, the security is partially allocated in order to most closely approximate the 50% target. As a result, 35% of the security's weight is reallocated from the growth index to the value index and its final VIF is 0.35.

4 Maintaining the MSCI US Market Cap Indexes

MSCI maintains the MSCI US Market Cap Indexes with the objective of reflecting the evolution of the US equity market on a timely basis, while seeking to achieve index continuity, continuous investability of constituents and low index turnover.

4.1 Index Reviews

The MSCI US Market Cap Indexes are subject to quarterly Index Reviews conducted in February, May, August and November. MSCI in general implements changes as of the close of the last business day of February, May, August and November. MSCI announces the pro forma Index in general nine business days before the effective date.

During each Quarterly Index Review, MSCI updates the eligible universe by identifying new equity securities and evaluating all securities against the investability screens described in Section 2.1. MSCI also updates Domestic Inclusion Factors (DIFs) and Number of Shares (NOS). Existing constituents are evaluated using buffer thresholds around the investability requirements rather than the point-in-time thresholds applied to new securities.

4.2 Ongoing Event-Related Maintenance

With the exception of the treatment as described below, details regarding the treatment of corporate events not covered below can be found in the MSCI Corporate Events Methodology Book, available at: http://www.msci.com/index-methodology.

Ongoing event-related changes to the indexes are the result of mergers, acquisitions, spin-offs, delistings, reorganizations and other similar corporate events. These changes are generally reflected in the indexes at the time of the event[3].

4.2.1 Changes in Characteristics of Existing Constituents

Changes in characteristics of existing constituents include changes in their market capitalization and industry classification. In order to ensure that the index accurately reflects the investability of the underlying securities, it is a general policy to coordinate ongoing changes in number of shares with changes in DIFs.

Therefore, when two companies merge, or a company acquires or spins-off another company, the free float of the resulting entity is estimated on a pro forma basis, using pro forma number of shares if applicable, and the corresponding DIFs are applied simultaneously with the event. Other corporate events, which result in a change in shareholder structure and therefore the DIFs are typically reflected in the indexes simultaneously with the implementation of the event in the index. Any other pending shareholder information updates or reclassifications are generally also reflected in the pro forma free

[3] Prior to the May 2026 Index Review, the MSCI US Indexes do not incorporate corporate events treatment for IPOs and other early inclusions, mergers and acquisitions, or spin-offs. Securities involved in such events are reflected in the Indexes only at the next scheduled quarterly Index Review.

float estimation related to the event. In addition, when appropriate, the number of shares changes resulting from the corporate event also incorporates any pending updates in number of shares.

4.2.2 Early Inclusions of Non-Index Constituents

All early inclusions are conditional upon the non-index constituents passing all the investability screens described in Section 2.1 with the exception of the length of trading and liquidity screens.

For example, if a non-constituent company acquires a constituent company, the constituent company's securities are replaced by the securities of the acquiring company. Similarly, if a constituent company merges with a non-constituent company, the merged company replaces the constituent company.

Such non-index constituents are generally included in the same market capitalization indexes as the affected index constituents, since they are considered to be a continuation of the index constituents. Thereafter, they are included in the appropriate market capitalization indexes based on their market capitalization rankings within the current MSCI US Index.

Securities spun-off from existing constituents are also considered for inclusion at the time of the event.

4.2.2.1 IPOs and Other Early Inclusions

In general, newly listed equity securities available to US investors, including securities of companies that change their country of incorporation to the US, are considered for inclusion in the US Indexes at the time of the quarterly index review. However, for IPOs which are significant in market capitalization and are ranked as one of the top 500 largest issuers as of the close of its first or second trading day, an early inclusion outside of the quarterly index review is considered to the MSCI US 500, MSCI US 1000 and MSCI US 3000 Indexes, if they pass all the investability screens described in Section 2.1, with the exception of the length of trading and liquidity screens.

Any over-allotment (also called green shoe) publicly announced as exercised prior to MSCI's announcement on the first or second trading day is included in the IPO's market capitalizations calculations.

If the decision is made to include an IPO early, it generally becomes effective after the close of the company's tenth day of trading. However, in certain cases, another date may be chosen for the inclusion to reduce turnover, for example, where the normal inclusion date is close to the effective date of the following quarterly index review.

5 Maintaining the MSCI US Value and Growth Indexes

The MSCI US Value and Growth Indexes are maintained with the objective of reflecting the evolution of style segments within the universe on a timely basis. In maintaining the indexes, emphasis is also placed on their continuity and on minimizing unnecessary index turnover.

5.1 Semi-annual Style Index Review

The style review of the value and growth indexes is in general conducted at the end of May and November, coinciding with the May and November Index Review of the underlying MSCI US Market Cap Indexes.

During the style review, new value and growth z-scores are calculated for the pro forma constituents of each size-segment index and, after applying the buffer rules, securities are allocated to the value and growth indexes, targeting 50% of the free float-adjusted market capitalization within each MSCI Market Cap Index as outlined in Section 3.

For the May and November semi-annual style index reviews, MSCI uses fundamental and forward-looking data as of the end of March and the end of September respectively. The review date for market capitalization and prices is in general nine business days before the effective date. MSCI uses prices from that same date to calculate the three price-based ratios used to determine value style characteristics.

5.2 Quarterly Style Index Review

Style reviews on the quarterly style index reviews are conducted for new securities in cases of additions to the underlying MSCI US Market Cap Indexes.

For these securities, the style review involves the following:

- Determining the values of the eight variables used to specify value and growth characteristics of affected securities using the latest available underlying fundamental and forward-looking data.
- Calculating the z-scores of each variable for affected securities using the previous daily free float-adjusted market capitalization weighted mean and standard deviation of the relevant variables.
- Aggregating the style z-scores for the affected securities to determine their overall style characteristics.
- Allocating the affected securities with the appropriate style inclusion factors without considering the buffer rules or the 50% free float-adjusted market capitalization target.

For the February and August quarterly style index reviews, MSCI uses fundamental and forward-looking data as of the end of December and the end of June respectively. The review date for market capitalization and prices is in general nine business days before the effective date. MSCI uses prices from that same date to calculate the three price-based ratios used to determine value style characteristics.

5.3 Ongoing Event-Related Maintenance

The general treatment of corporate events in 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.

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 Indexes between Index Reviews[4]. In the below, "Parent Index" refers to the relevant underlying MSCI US Market Cap Index.

EVENT TYPE	EVENT DETAILS
New additions to the Parent Index	A new security added to the Parent Index (such as IPOs) 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 the 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-Index constituent, the existing constituent will be deleted from the Index and the acquiring non-constituent will be added to the Index provided it is added to the Parent Index following the corporate event.
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 regarding the treatment of corporate events is available in the MSCI Corporate Events Methodology book at https://www.msci.com/index-methodology.

[4] Prior to the May 2026 Index Review, the MSCI US Indexes do not incorporate corporate events treatment for IPOs and other early inclusions, mergers and acquisitions, or spin-offs. Securities involved in such events are reflected in the Indexes only at the next scheduled quarterly Index Review.

Appendix I: Expanding the US Equity Universe

The MSCI US 3000 Index targets 3,000 issuer constituents. If the US Equity Universe, after applying all investability screens in Section 2.1, does not yield a sufficient number of eligible issuers to reach this target, MSCI expands the eligible universe by applying relaxed investability screens to securities not already included. Securities admitted through this expansion are subject to the requirements described in this section.

Eligibility for Universe Expansion

Securities eligible for inclusion through universe expansion must satisfy each of the following requirements:

- Minimum Size Requirement.
- Minimum Liquidity Requirement.
- Minimum Domestic Inclusion Factor Requirement.
- Minimum Length of Trading Requirement.
- Financial Reporting Requirement.
- Global Industry Classification Standard (GICS®) Requirement

Minimum Size Requirement

In order to be eligible for inclusion through universe expansion, a company must have the required minimum full market capitalization and full security market capitalization. This minimum full market capitalization is referred to as the Expanded Universe Minimum Size Requirement and is derived as follows:

- First, companies in the US Equity Universe are sorted in descending order of full market capitalization and the cumulative coverage of the free float-adjusted market capitalization is calculated at each company.
- Second, when the cumulative free float-adjusted market capitalization coverage of 99.8% of the sorted universe is achieved, the full market capitalization of the company at that point defines the Expanded Universe Minimum Size Requirement.
- The rank of this company by descending order of full market capitalization is noted and will be used in determining the Expanded Universe Minimum Size Requirement at the next rebalance.

Minimum Liquidity Requirement

To be eligible for inclusion through universe expansion, a security must have a 12-month ATVR of at least 5% and a 12-month Frequency of Trading of at least 50%. In cases where the latest 3-month ATVR

is not calculated due to suspensions, non-constituent securities are not eligible for inclusion through universe expansion.

Minimum Domestic Inclusion Factor Requirement

A security must have a Domestic Inclusion Factor (DIF) equal to or larger than 0.15 to be eligible for inclusion through universe expansion. Securities with a DIF equal to 0.15 or above will also be excluded if their free float-adjusted market capitalization is less than the Expanded Universe Minimum Size Requirement for Existing Constituents, as defined in the maintenance section below.

Minimum Length of Trading Requirement

For an IPO to be eligible for inclusion through universe expansion, the new issue must have started trading at least three months before the implementation date of a quarterly Index Review.

Financial Reporting Requirement

Companies classified in the United States as per MSCI's Country of Classification Framework must file a Form 10-K/10-Q to be eligible for inclusion through universe expansion.

Global Industry Classification Standard (GICS®) Requirement

Securities must be classified under the Global Industry Classification Standard (GICS®) to be eligible for inclusion.

Appendix II: Variable Definitions and Computations

This appendix provides details on the definitions and computations of the eight variables used to define the value and growth investment style characteristics for index construction.

All forward variables are based on consensus analysts' estimates are provided by a specialized data vendor, which is currently Thomson I/B/E/S. For all other fundamental data, MSCI data are used. As a general rule, in order to avoid inconsistencies of data between the different providers, the fundamental data used in the forward variable calculations are also provided by Thomson I/B/E/S.

Variables Used to Define Value Investment Style Characteristics

Book Value to Price Ratio (BV / P)

The BV / P calculation is as follows:

BV / P = book value per share / price of security

The most recently reported book value is used to estimate book value per share.

12-month Forward Earnings to Price Ratio (E fwd / P)

The E fwd / P is calculated as follows:

E fwd / P = EPS_{12F} / price of security

Where:

EPS_{12F} is the 12-month forward EPS estimate and is derived on a rolling basis from the consensus of analysts' earnings estimates for fiscal year 1 and fiscal year 2.

$$EPS_{12F} = \frac{M * EPS_1 + (12 - M) * EPS_2}{12}$$

Where

- EPS1 is the consensus of analysts' earnings estimates for fiscal year 1
- EPS2 is the consensus of analysts' earnings estimates for fiscal year 2
- M is the number of months remaining before the fiscal year end
- The fiscal year 1 corresponds to the fiscal year following the last fiscal year for which the company has made its results publicly available

For cases where EPS_2 is not available and M is greater than or equal to 8, EPS_1 is used as an approximation of EPS_{12F}.

Example:
Calculating the 12-month forward earnings as of January 20, 2005:

	Security A	*Security B*	*Security C*
Latest reported Fiscal Year	Dec 31, 2004	Mar 31, 2004	Dec 31, 2003
M	11	2	11
EPS_1	0.64	1.04	1.04
EPS_1 date	Dec 31, 2005	Mar 31, 2005	Dec 31, 2004
EPS_2	0.74	1.52	1.52
EPS_2 date	Dec 31, 2006	Mar 31, 2006	Dec 31, 2005
EPS_3			1.72
EPS_3 date			Dec 31, 2006
EPS_{12F}	**0.65**	**1.44**	**1.54**

For Security C, the results for the fiscal year ending December 31, 2004 are not yet available. As a result, the EPS_1 estimates still pertain to the fiscal year ending December 31, 2004. Therefore, in order to have meaningful 12-month forward earnings, the EPS_2 and the EPS_3 are used instead of the EPS_1 and EPS_2.

Example:
Calculating the 12-month forward earnings as of June 20, 2005 when EPS_2 is missing:

	Security A	*Security B*	*Security C*
Latest reported Fiscal Year	Sep 30, 2004	Jun 30, 2004	Dec 31, 2004
M	7	5	11
EPS_1	0.64	1.04	1.04
EPS_1 date	Sep 30, 2005	Jun 30, 2005	Dec 31, 2005
EPS_2	0.74		
EPS_2 date	Sep 30, 2006		
EPS_{12F}	**0.68**	**N/A**	**1.04**

For security B, estimates for June 30, 2006 are not available. Since M is smaller than 5, EPS_{12F} is not available. In the case of Security C, estimates for December 31, 2006 are not available but as M is greater than 8, EPS_1 is used as EPS_{12F}

Dividend yield (D / P)

D / P = Current Annualized Dividend per Share / Price of Security

The current annualized dividend per share is the trailing 12-month dividend per share derived from the current fiscal year end dividend per share plus the difference between the interim dividend per share of the current fiscal year and the previous fiscal year. For the USA and Canada, the current annualized dividend per share is calculated by annualizing the latest published quarterly dividend.

Yields are gross, before withholding tax, and take into account special tax credits when applicable.

Variables Used to Define Growth Investment Style Characteristics

Long-term Forward Earnings per Share Growth Rate (LT fwd EPS G)

The LT fwd EPS G is the consensus of analysts' earnings growth rate estimates typically provided for the next 3 to 5 years. LT fwd EPS G with values above or equal to 50 or below or equal to -30 are not taken into account and considered as missing if contributed by only one analyst.

Short-term Forward Earnings per Share Growth Rate (ST fwd EPS G)

The ST fwd EPS G is a growth rate between the 12-month backward earnings per share and the 12-month forward earnings per share.

The ST fwd EPS G is computed as follows:

$$\text{ST forward EPS G} = \frac{EPS_{12F} - EPS_{12B}}{\left|EPS_{12B}\right|}$$

Where

EPS_{12B} = 12-month backward EPS is derived in a similar fashion as the EPS_{12F} but from the last reported fiscal year and the consensus of analysts' earnings estimates for fiscal year 1

$$EPS_{12B} = \frac{M * EPS_0 + (12 - M) * EPS_1}{12}$$

Where

- EPS0 is last fiscal year end reported earnings per share

For cases where EPS_1 is used as an approximation of EPS_{12F}, EPS_0 is used as the value for EPS_{12B}.

Example:
Calculating the Short-term forward EPS growth rate as of the January 20, 2003:

	Security A	*Security B*	*Security C*
Fiscal Year End	Dec 31, 2003	Nov 30, 2003	Mar 31, 2003
M	11	10	2
EPS_0	0.50	-0.30	0.89
EPS_1	0.64	-0.15	1.04
EPS_2	0.74	0.25	1.52
EPS_{12F}	**0.65**	**-0.08**	**1.44**
EPS_{12B}	**0.51**	**-0.28**	**1.02**
ST fwd EPS G	**26.7%**	**69.7%**	**41.9%**

Current Internal Growth Rate (g)

The Current Internal Growth Rate is calculated as follows:

g = ROE*(1-PO)

Return on Equity (ROE) is calculated using the trailing 12-month EPS divided by the most recently reported book value. The ROE is considered meaningful and is calculated if the following conditions are met:

- the book value is positive and
- the difference between the book value and earnings date is less than 18 months and
- the book value's date is older than the earnings date and
- the issuer results are consolidated or not consolidated for both book value and earnings.

Otherwise, the ROE value is considered missing.

Payout ratio (PO) is calculated using the current annualized dividend per share divided by the trailing 12-month EPS.

In the event of a missing value for either the payout ratio or the ROE, the g value is considered to be missing.

Long-term Historical EPS Growth Trend (LT his EPS G) and Long-term Historical Sales per Share (SPS) Growth Trend (LT his SPS G)

For the calculation of the LT his EPS G and LT his SPS G, first a regression (ordinary least square method) is applied to the last 5 yearly restated EPS and SPS respectively.

$$EPS_t = a \times t + b$$

Where:

- a, the slope coefficient,
- b, the intercept,
- t, the year expressed in number of months.

Then, an average absolute EPS or SPS is estimated:

$$\widetilde{\widetilde{EPS}} = \sum_{i=1}^{n} \frac{|EPS_i|}{n}$$

$$\widetilde{\widetilde{SPS}} = \sum_{i=1}^{n} \frac{|SPS_i|}{n}$$

The growth trend is finally obtained as follows:

$$LT\,his\,EPS\,G = \frac{a_{EPS}}{\left|\widetilde{\widetilde{EPS}}\right|} \qquad LT\,his\,SPS\,G = \frac{a_{SPS}}{\left|\widetilde{\widetilde{SPS}}\right|}$$

In order to compute a meaningful long-term historical growth trend for the EPS and SPS, 5 years of comparable data are required. In the event that comparable restated pro forma data are unavailable, MSCI may restate the data using adjustments. A minimum of the last four EPS or SPS values are needed to compute their historical growth trends. Growth trends for securities without sufficient EPS or SPS values are considered to be missing.

Example:
Calculating Long-term historical EPS and SPS growth trend January 20, 2003:

	Years	*t*	*EPS*	*SPS*
Fiscal Year End 0	Dec 31, 1998	0	-1.11	7.71
Fiscal Year End 1	Dec 31, 1999	12	-0.51	8.19
Fiscal Year End 2	Dec 31, 2000	24	0.29	8.57
Fiscal Year End 3	Dec 31, 2001	36	0.92	8.87
Fiscal Year End 4	Dec 31, 2002	48	1.41	11.50
a			**0.05**	**0.07**
a, annualized			**0.65**	**0.83**
b			**0.85**	**8.97**
Growth Trend			**76.3%**	**9.21%**

Appendix III: Calculation of Market Mean and Standard Deviation

This appendix explains the calculation of the market mean and standard deviation used in the determination of the z-score.

The calculation involves the following three steps:

- First, the variable values are winsorized using the 5th and 95th percentile cut-off.
- Second, the winsorized per share values are used to compute the market mean.
- Third, the market standard deviation is computed.

The market mean is the market capitalization weighted average of the variable and is computed as follows:

$$\mu_{\text{variable}} = \sum_i \left[\left(\frac{Shares_i \times P_i \times DIF_i}{\sum_i Shares_i \times P_i \times DIF_i} \right) \times Variable_i^{\text{winsorized}} \right]$$

The market standard deviation is computed as follows:

$$\sigma_{\text{variable}} = \sqrt{\sum_i \left(\frac{Shares_i \times P_i \times DIF_i}{\sum_i Shares_i \times P_i \times DIF_i} \right) \times \left(Variable_i^{\text{winsorized}} - \mu_{\text{variable}} \right)^2}$$

For example, the market mean and the market standard deviation for BV/P are calculated as follows:

$$\mu_{BV/P} = \sum_i \left[\left(\frac{Shares_i \times P_i \times DIF_i}{\sum_i Shares_i \times P_i \times DIF_i} \right) \times \left(\frac{BV}{P} \right)_i^{\text{winsorized}} \right]$$

$$\sigma_{BV/P} = \sqrt{\sum_i \left(\frac{Shares_i \times P_i \times DIF_i}{\sum_i Shares_i \times P_i \times DIF_i} \right)_i \times \left(\left(\frac{BV}{P} \right)_i^{\text{winsorized}} - \mu_{BV/P} \right)^2}$$

Only securities with non-missing variables are included in the market mean and standard deviation.

Appendix IV: Methodology Set

The following methodology documents constitute the methodology set for the MSCI US Market Cap and Value & Growth Indexes:

- MSCI Global Investable Market Value and Growth Index Methodology
- MSCI Corporate Events Methodology
- MSCI Fundamental Data Methodology
- MSCI Index Calculation Methodology
- MSCI Index Glossary of Terms
- MSCI Index Policies
- MSCI Global Industry Classification Standard (GICS) Methodology

The methodology set is also accessible at https://www.msci.com/index-methodology in the section 'Search Methodology by Index Name or Index Code'.

Contact us

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MSCI (NYSE: MSCI Inc.) strengthens global markets by connecting participants across the financial ecosystem with a common language. Our research-based data, analytics and indexes, supported by advanced technology, set standards for global investors and help our clients understand risks and opportunities so they can make better decisions and unlock innovation. We serve asset managers and owners, private-market sponsors and investors, hedge funds, wealth managers, banks, insurers and corporates.

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The process for submitting a formal index complaint can be found on the index regulation page of MSCI's website at: https://www.msci.com/index-regulation.

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