MSCI US Equity Indices Methodology

Index Construction Objectives and Methodology for the MSCI US Equity Indices

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Section 1: US Equity Indices Methodology Overview

1.1 Introduction

For over 30 years, MSCI has been constructing global equity benchmark indices that contribute to the international investment management process. These indices serve as relevant and accurate performance benchmarks, effective research and asset allocation tools, and are used as the basis for various investment vehicles designed to gain and/or manage exposure to international markets. As such, the MSCI international equity indices fulfill the investment needs of a wide variety of international investors. In constructing these indices, MSCI consistently applies its equity index construction and maintenance methodology across developed and emerging markets. This consistency of approach makes it possible to aggregate individual country and industry indices to create meaningful regional and composite benchmark indices for investing internationally.

MSCI is now proceeding with the development of US equity benchmark indices from the perspective of US domestic investors. In this regard, this methodology book presents the methodology, which is used to construct and maintain a family of MSCI US Equity Indices. This new index series reflects the full breadth of investment opportunities across market capitalization size, value and growth investment styles and industry and sector groups within the US equity market.

1.2 Defining the US Equity Market Capitalization Segments and Indices

In constructing the MSCI US Equity Market Capitalization Indices, MSCI has adopted a broad index structure that reflects the full breadth of investment opportunities across market capitalization size in the US equity markets in which companies and their securities are categorized into different market capitalization segments and indices that are defined by a fixed number of companies.

1.2.1 Defining the US Equity Universe

MSCI includes in the eligible US equity universe all listed equity securities of US incorporated companies listed on the NYSE, NYSE Arca, AMEX, and the NASDAQ, except investment trusts (other than REITS), mutual funds, equity derivatives, limited partnerships, limited liability companies and business trusts that are structured to be taxed as limited partnerships, and royalty trusts. When appropriate, some non-US incorporated companies may also be considered for inclusion in the MSCI US equity universe based on an analysis and interpretation of a number of factors. Some of these factors include the company's main equity trading markets, shareholder base and geographical distribution of operations (in terms of assets and production).

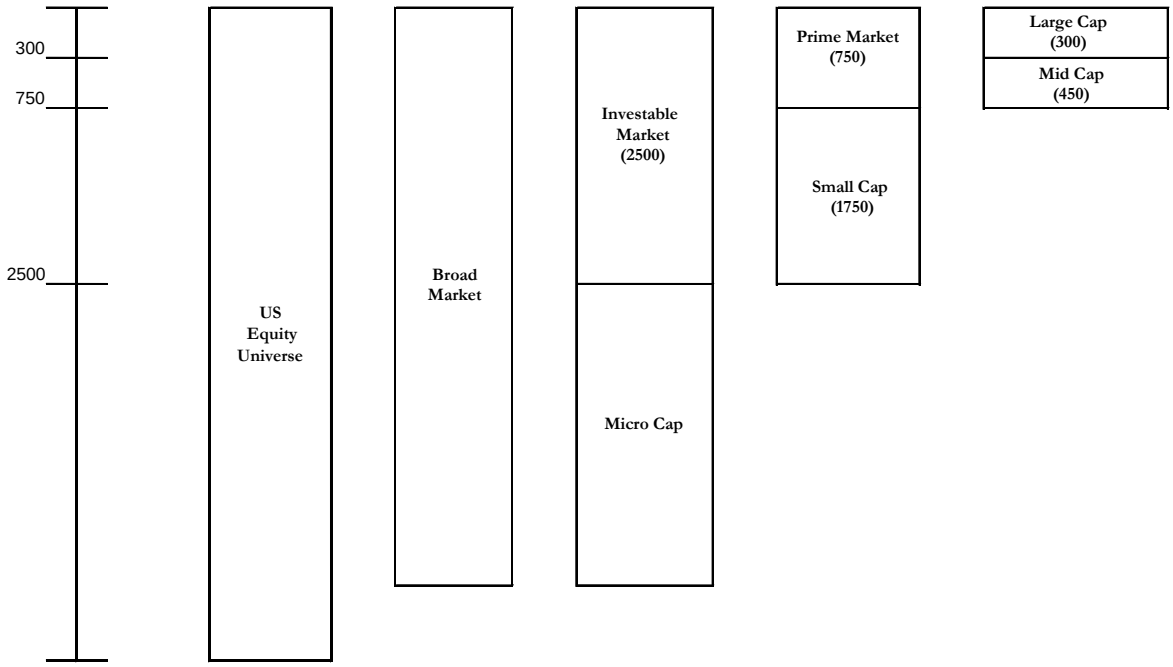
1.2.2 Defining the Market Capitalization Segments and Indices

MSCI segregates the eligible US equity universe in three market capitalization segments, namely:

- The investable market segment
- The micro cap segment, and
- The lower micro cap segment

The design and structure of the market capitalization segments and indices are represented in the following page.

MSCI US Equity Indices: Market Capitalization Segments and Indices (Number of Companies)



The investable market segment includes all eligible securities with reasonable size, liquidity, and investability that can cost effectively be represented in institutional and pooled retail portfolios of reasonable size. This segment also allows investors to gain exposure to a significant portion of the performance of the US equity universe. Analysis shows that the 2,500 largest companies by full market capitalization, which cover more than 98% of the US equity universe, form an appropriate representation of the investable market segment. The investment performance characteristics of this investable market segment is represented and measured by an Investable Market Index.

The micro cap segment will comprise micro cap companies with a market capitalization rank lower than the 2,500 companies in the investable market segment and included in the top 99.5% of the US equity universe ranked by full market capitalization. The micro cap segment is estimated to cover around 1.5% of the market capitalization of the US equity universe. The investment performance characteristics of this segment of the US equity universe is represented and measured by a Micro Cap Index.

The lower micro cap segment covers approximately the bottom 0.5% of the full market capitalization of the US equity universe, and will not be represented by an index.

The combination of the Investable Market Index and the Micro Cap Index will form the US broad market index, which thus includes the companies comprised in the top 99.5% of the US equity universe ranked by full market capitalization.

1.2.2.1 Defining the Large, Mid and Small Market Capitalization Segments and Indices

The investable market segment and index is comprised of three market capitalization segments and their corresponding indices- large cap, mid cap, and small cap.

MSCI defines the large cap index as consisting of the 300 largest companies by full market capitalization in the investable market segment, the Mid Cap Index as comprising the next 450 companies, and the Small Cap Index as consisting of the remaining 1,750 companies.

The large cap and the mid cap indices, as defined above, are also combined to create a separate index of the 750 largest companies in the investable market segment ranked by full market capitalization.

MSCI uses a fixed number of companies for defining the cut-off levels for the market capitalization segments. Analysis shows that using a fixed number of companies to specify market capitalization cut-off levels leads to better stability and lower turnover in the resulting market capitalization indices over time, when compared to using other factors to define market capitalization segments, such as percentiles of market capitalization or absolute market capitalization levels. In making a determination as to what levels of a fixed number of companies appropriately define the various market capitalization segments within the investable market segment, MSCI considered the behavior of several factors over time using different levels of fixed number of companies. The factors include the following:

- The absolute market capitalization level of the smallest company.
- The marginal contribution to the relevant index of the smallest company.
- The cumulative proportion of market capitalization covered.
- The liquidity and trading characteristics of companies.
- An analysis of the average size of portfolio holdings of a variety of large, mid cap, and small cap investment managers.

MSCI periodically reviews the factors mentioned above and the resulting market capitalization cut-off levels in order to ensure that they continue to appropriately define the various market capitalization segments. In the event of a structural change that permanently alters the capitalization characteristics and make-up of the equity market, MSCI may need to change the number of companies in each of the various market capitalization segments.

Since companies and their securities are assigned to the appropriate market capitalization segments and indices based on their company full market capitalization, consequently, all securities of the same company are always classified in the same market capitalization segment and index and there may be more securities than companies within each market capitalization segment and index.

1.2.3 Market Capitalization Index Reviews and Buffer Zones

The MSCI US Equity Indices 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-indices, MSCI's goal is to strike a balance between ensuring that the various indices continue to accurately reflect the different investment processes and their opportunity sets and at the same time minimize index turnover.

In this regard, and consistent with the index methodology employed in maintaining existing MSCI international equity indices, MSCI reflects corporate events in the indices as they occur.

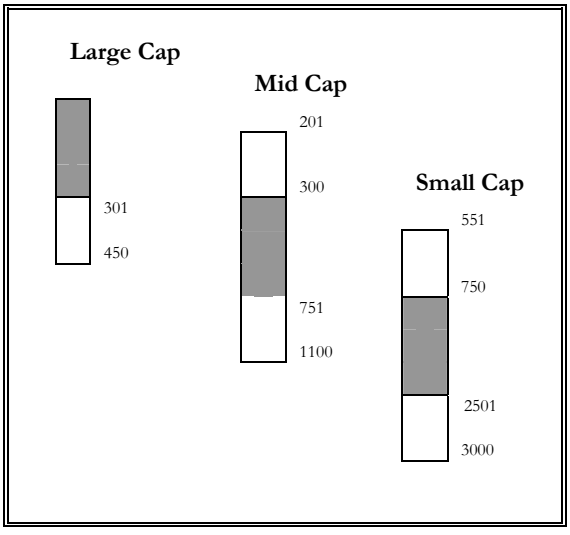
In addition, the market capitalization indices are also fully reviewed on a semi-annual basis, at the end of May and November, and partially reviewed at the end of February and August. During these index reviews, MSCI uses "buffer zones" to manage the migration of companies from one market capitalization index to another.

For instance, an asymmetrical stock buffer zone, consisting of 100 companies on the upside and 150 companies on the downside, is used around the market capitalization cutoff levels between the large cap and the mid cap indices. This buffer zone implies that, once the market capitalization sub-indices have been constructed according to the design mentioned above, an existing constituent will leave the large cap index when it drops to a market capitalization rank of 451. Similarly, a mid cap company will enter the large cap index when it reaches a market capitalization rank of 200. Buffers zones are also used between the mid cap and the small cap indices and between the small cap and the micro cap indices, as shown in the table below.

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

	Large Cap	Mid Cap	Small Cap	Micro Cap
Market Capitalization Segment Definition	1-300	301-750	751-2500	
Upside Buffer Zone		201-300	551-750	1851-2500
Downside Buffer Zone	301-450	751-1100	2501-3000	

Buffer Zones by Market Capitalization Index



During the May and November semi-annual index reviews, the process of the index review ensures that the market capitalization indices contain the number of companies originally used to define each market capitalization segment. For example, the large cap and the mid cap indices will contain 300 and 450 companies, respectively. The process of bringing the market capitalization indices back to the original cut-off levels are applied after allowing for the migration of companies outside of the buffer zones to their appropriate index.

For instance, after applying the buffer zones, if the number of companies in the large cap index were smaller than 300, the largest mid cap companies are migrated to the large cap index until the number of companies reach 300. If the large cap index were to contain more than 300 companies, the smallest large cap companies are migrated to the Mid Cap Index until the number of companies equal 300. A similar process is applied for the migration of constituents between the mid cap and the small cap indices and, between the small cap and the micro cap indices.

1.3 Defining the US Equity Value and Growth Investment Styles and Indices

In constructing the MSCI US Equity Style Indices, MSCI has adopted a two-dimensional framework for style segmentation in which value and growth securities are categorized using different attributes. In addition, multiple factors are used to identify value and growth characteristics.

1.3.1 Multi-Factor Approach

The value investment style characteristics for index construction are defined using the following three variables:

- Book value to price ratio (BV / P)
- 12-month forward earnings to price ratio (E fwd / P)
- Dividend yield (D / P)

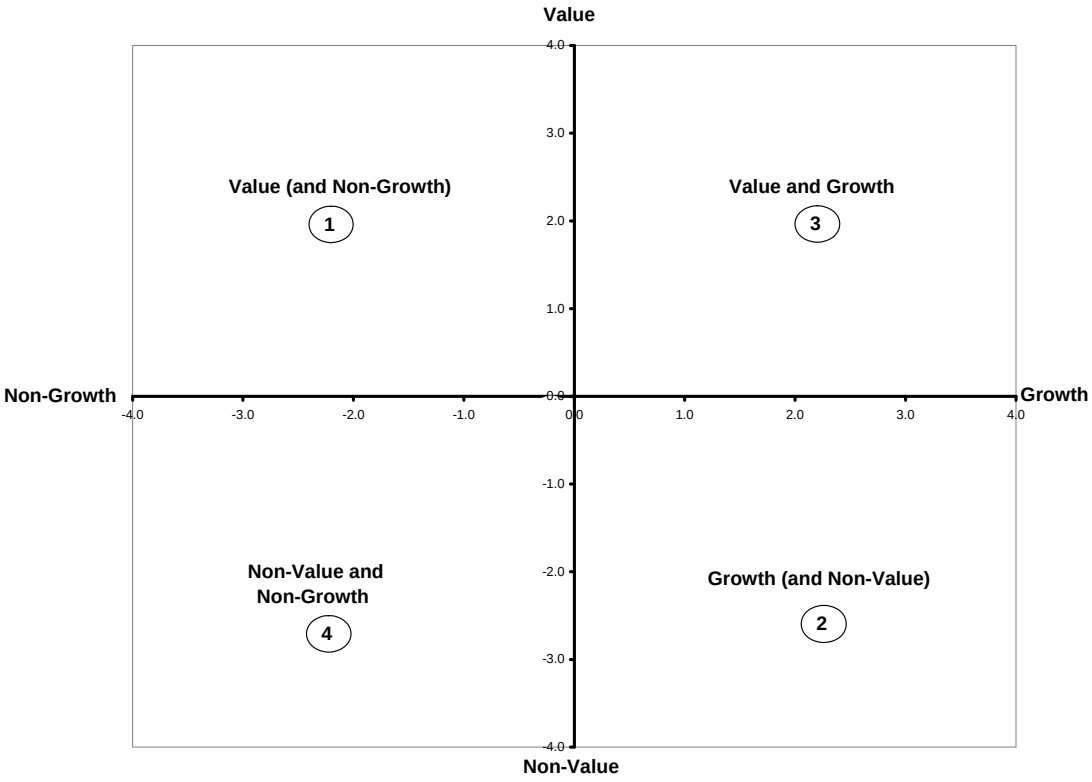
The growth investment style characteristics for index construction are defined using the following five variables:

- Long-term forward earnings per share (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)
- Long-term historical sales per share (SPS) growth trend (LT his SPS G)

1.3.2 Two-Dimensional Framework

Using the variables mentioned above, value z-scores and growth z-scores are calculated and used to determine the overall style characteristics of each security in the MSCI value and growth style space, as depicted in Exhibit 1. In the two-dimensional framework, non-value does not necessarily mean growth, and vice versa. Additionally, some securities can exhibit both value and growth characteristics, while others may exhibit neither.

Exhibit 1 – MSCI Value and Growth Style Space



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.

Hence, under the two-dimensional framework for style segmentation, a security can have the following four style characteristics:

1. A security with a positive value z-score and a negative or zero growth z-score is situated in the Value (and Non-Growth) quadrant as it exhibits clear value characteristics.
2. A security with a negative or zero value z-score and a positive growth z-score is situated in the Growth (and Non-Value) quadrant as it exhibits clear growth characteristics.
3. A security with a positive value z-score and a positive growth z-score is situated in the Value and Growth quadrant as it exhibits both value and growth characteristics.
4. A security with a negative or zero value z-score and a negative or zero growth z-score is situated in the Non-Value and Non-Growth quadrant as it exhibits both non-value and non-growth characteristics.

1.3.3 Index Design

The objective of the value and growth indices is to divide constituents of an underlying market capitalization index, into a value index and a growth index, each targeting 50% of the free float-adjusted market capitalization of the underlying market capitalization index. The market capitalization of each constituent should be fully represented in the combination of the value index and the growth index, and, at the same time, should not be "double-counted". A security may, however, be represented in both the value index and the growth index at a partial weight.

1.3.4 Universe for Style Segmentation

MSCI adopts a market capitalization index specific approach in conducting the style segmentation of the value and growth indices. Securities in each market capitalization index are allocated to the appropriate value and growth indices. The same style segmentation process is applied independently and consistently across all market capitalization indices.

The consistent application of index methodology to all market capitalization indices also makes it possible to apply a "building block" approach in the construction of broad market style indices. Under this approach, individual value and growth indices can be aggregated to create various meaningful and comparable broad market style indices.

The value and growth style classification and allocation is applied at the security level rather than at the company level and the value and growth indices exist only for the investable market segment and index.

1.3.5 Construction of the Value and Growth Indices

In order to achieve the above-mentioned index design, MSCI constructs and maintains the value and growth indices by allocating securities and their free float-adjusted market capitalizations to the appropriate value and growth indices, during the semi-annual style index reviews of May and November.

MSCI's construction of the value and growth indices for each market capitalization index involves the following five steps:

- Determining the values of the variables used to specify value and growth characteristics for each security.
- Calculating the z-scores of each variable for each security.
- Aggregating the style z-scores for each security to determine the security's overall style characteristics.
- Assigning initial style inclusion factors for each security.
- Achieving the 50% free float-adjusted market capitalization target by allocating securities to the value and growth indices after applying buffer rules.

1.4 Free Float-Adjusting Constituent Weights in US Equity Indices

Although the full market capitalization of companies is used as the basis for determining the various market capitalization segments and indices, MSCI free float-adjusts the market capitalization of constituents in the US Equity Indices in order to reflect the availability of shares from the perspective of US domestic investors.

MSCI defines the domestic free float of a security as the proportion of shares outstanding that are deemed available for purchase in the public equity markets by US domestic investors. Therefore, domestic free float excludes strategic investments in a company, such as stakes held by federal, state and local governments and their agencies, controlling shareholders and their families, the company's management or another company. No foreign ownership limit is applied in the domestic free float calculation.

1.5 Global Industry Classification Standard (GICS)

MSCI has designed, in conjunction with Standard & Poor's, the Global Industry Classification Standard (GICS), which provides a universal approach to industry classification of securities and forms the basis for achieving MSCI's objective of reflecting broad and fair industry representation in its international equity indices. MSCI applies the GICS to the construction and maintenance of its US Equity Indices. Common features between MSCI US domestic and international equity indices, such as the use of the GICS, improves investors' ability to better measure and monitor the risk and attribute the performance of global equity portfolios.

In the next sections, we review each of these factors and steps in detail.

1.6 Initial Construction of US Equity Indices and its History

MSCI started calculating and maintaining the ongoing Investable Market Index on December 2, 2002 with a base level of 1000 as of November 29, 2002. The initial construction of this index used market capitalizations as of November 25, 2002 and no buffer rules were applied on the Market Capitalization or Style Indices. MSCI started calculating and maintaining the ongoing Broad Market Index and the Micro Cap Index on June 2, 2003 with a base level of 1000 as of May 30, 2003.

In addition, MSCI has calculated daily price and total return index levels for the Investable Market Index, from May 31, 1992 to November 29, 2002. The methodology used for the historical calculation is basically the same as that of the ongoing index. The main difference is the use of full market capitalization weights for the historical indices instead of free float-adjusted market capitalization weights for the ongoing indices.

Section 2: Constructing the US Market Capitalization Indices

MSCI undertakes an index construction process for the market capitalization indices, which involves:

- Creating the US equity universe.
- Screening securities for investability.
- Assigning securities to appropriate market capitalization indices, after applying buffer rules.

Once securities have been selected as index constituents, the full market capitalization of all selected constituents is adjusted for free float available to US domestic investors. In addition, they are classified in their appropriate industry classification based on the Global Industry Classification Standard (GICS).

2.1 Creating the US Equity Universe

The index construction process begins with the creation of the US equity universe.

MSCI includes in the US equity universe all listed equity securities, or listed securities that exhibit characteristics of equity securities, of US incorporated companies listed on the NYSE, AMEX or the NASDAQ (both NASDAQ National Market and NASDAQ Small Cap Market). Shares of non-US incorporated companies, investment trusts (other than REITs), mutual funds, equity derivatives, limited partnerships, limited liability companies and business trusts that are structured to be taxed as limited partnerships, and royalty trusts are generally not eligible for inclusion in the universe.

When appropriate, some non-US incorporated companies trading in the US may also be considered for inclusion in the US equity universe based on a number of factors described in Appendix I, entitled "Country Classification of Securities". Additionally, some US incorporated companies trading in the US may be excluded from the US equity universe.

Some of the factors used to determine the appropriate country classification include the company's main equity trading markets, shareholder base and geographical distribution of operations (in terms of assets and production). In addition, the company's regulatory filings provide useful insights regarding the company and the regulator's perception of its relevant country affiliation.

A comprehensive review of the total US equity universe is conducted to create the US equity universe in order to ensure a broad and fair representation of the full breadth of investment opportunities across the total US equity universe in the US Equity Indices.

2.2 Screening Securities for Investability

After determining the US equity universe, MSCI screens securities for investability using various factors. Each security of a company is screened and selected for index inclusion based on its own merits, as different share classes of a company are not assimilated. As such, the inclusion or deletion of one security does not imply the automatic inclusion or deletion of the other securities of the same company.

The assessment of a security's investability is determined with the following screens and a security must pass all the screens in order to be considered for index inclusion in the Investable Market Index:

- Liquidity.
- Length of trading.
- Company and security free float.
- Relative security free float-adjusted market capitalization.

For securities that are considered for inclusion or are currently included in the Micro Cap Index, the liquidity screen and the relative security free float-adjusted market capitalization screens are not applied. In addition, all new companies and securities that are considered for inclusion in the Micro Cap Index must have a company full market capitalization of at least USD 20 million. Current eligible constituents of the Micro Cap Index can remain in the Micro Cap Index, unless their company full market capitalization falls below USD 10 million

Companies that migrate from the Micro Cap Index to the Investable Market Index must have adequate liquidity and must pass other investability criteria applicable for the Investable Market Index.

2.2.1 Liquidity

All securities that are considered for inclusion or are currently included in the Investable Market Index must be characterized by adequate liquidity, which is measured along two dimensions. One is based on the level of a stock price and the other is a relative liquidity screening using a direct relative liquidity measure known as the Annualized Traded Value Ratio (ATVR).

Concerning the level of a stock price, there may be liquidity issues for securities trading at a very low or a very high stock price. By and large, the issue of securities trading at a very low stock price is addressed by the stock exchanges directly, with rules to delist securities trading below a stock price of USD 1. However, no comparable rules exist for securities trading at a very high stock price. Hence, a limit of USD 5,000 has been set and securities with stock prices above USD 5,000 fail the liquidity screening.

The relative liquidity screening is conducted by ranking all securities in the US equity universe in descending order of ATVR after excluding those securities trading above USD 5,000.

The ATVR of each security is calculated in a 3-step process described below:

- First, monthly median traded values are computed using the daily median traded value, multiplied by the number of days in the month that the security traded. 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. The daily median traded value is the median of the daily traded values in a given month.
- Second, the monthly median traded value ratio is obtained by dividing the monthly median traded value of a security by its full market capitalization at the end of the month.
- Third, the ATVR is obtained by taking the average of the monthly median traded value ratios of the previous 12 months - or the number of months for which this data is available- and multiplying it by 12.

Securities that belong to the top 99.5% of the cumulative security full market capitalization of the US equity universe in descending order of ATVR, after excluding those securities trading above USD 5,000, are eligible for inclusion in the Investable Market Index.

Existing Investable Market Index constituents can remain in the index until they fall below 99.75% of the cumulative security full market capitalization as described above. Current Micro Cap Index securities that migrate to the Investable Market Index can be added to the Investable Market Index if they rank within 99.75% of the cumulative security full market capitalization as described above.

Securities that have failed the liquidity screening previously or have been excluded from the indices as their ATVR fell below the 99.75% level are eligible for inclusion only when they rank within the top 99.25% of the cumulative security full market capitalization as described above.

2.2.2 Length of Trading

A seasoning period of at least three calendar months is required for all new issues of small companies at the time of the eligible US equity universe creation. This seasoning period helps MSCI assess the investability of securities of small companies, which are defined as those having company full market capitalization rank below 750 in the Investable Market Index.

IPOs and newly listed securities with a company full market capitalization rank equal to or above 750 in the Investable Market Index do not need to satisfy this condition.

2.2.3 Company and Security Free Float

Securities with a company DIF less than 0.10 and/or a security DIF less than 0.15 are generally not eligible for inclusion in the Broad Market Index.

For a security of a company with a company DIF less than 0.10 and/or security DIF less than 0.15 to be eligible for inclusion to the Investable Market Index, the free float-adjusted market capitalization of the security must represent at least:

- 5 basis points of the current Investable Market Index.

In the case of an existing Investable Market Index constituent, if the company DIF decreases to less than 0.10 and/or the security DIF decreases to less than 0.15, or if an existing constituent that was included in the index with a company DIF below 0.10 and/or a security DIF below 0.15 experiences a further decrease in DIF, in order to remain in the index, the free float-adjusted market capitalization of the security must represent at least:

- 5 basis points of the current Investable Market Index, if the existing constituent experienced decreases in free float after its inclusion in the indices.

2.2.4 Relative Security Free Float-Adjusted Market Capitalization

In general, all securities that are considered for inclusion in the Investable Market Index should have a free float-adjusted security market capitalization representing at least 10% of the company full market capitalization.

For a security with a free float-adjusted security market capitalization representing less than 10% of the company full market capitalization to be eligible for inclusion in the Investable Market Index, the free float-adjusted market capitalization of the security must represent at least:

- 5 basis points of the current Investable Market Index.

For an existing Investable Market Index constituent with a free float-adjusted security market capitalization representing less than 10% of the company full market capitalization to be eligible to remain in the indices, the free float-adjusted market capitalization of the security must represent at least:

- 2.5 basis points of the current Investable Market Index, if the existing constituent was previously included in the indices with a free float-adjusted security market capitalization representing less than 10% of the company full market capitalization and this proportion relative to the company has not decreased since then.
- 5 basis points of the current Investable Market Index, if the existing constituent experienced decreases in the free float-adjusted security market capitalization relative to the company full market capitalization after its inclusion in the indices.

2.3 Assigning Securities to Market Capitalization Indices

Assigning securities to the appropriate market capitalization indices involves a fine balance between the following objectives:

- Reflecting changes in the market capitalization size of companies and their securities.
- Reconstituting the indices to contain the number of companies originally used to define each market capitalization index.
- Avoiding unnecessary index turnover.

Hence, a careful comparison of a security's old and new market capitalization rank and index is necessary.

The process of assigning securities to their market capitalization indices involves:

- Preliminarily assigning securities to a market capitalization index based on their new company full market capitalization rank.
- Using buffer rules to manage the migration of securities between market capitalization indices.
- Assigning the securities to their final market capitalization index.

2.3.1 Preliminary Attribution of Securities to Market Capitalization Indices

After selecting the eligible and investable securities of companies, these are preliminarily assigned to their new market capitalization indices. This is achieved by ranking all selected securities of companies in descending order of company full market capitalization and selecting securities of companies for each market capitalization index until the aggregate number of companies is reached. Company full market capitalization incorporates the full market capitalization of all listed and unlisted securities of the same company.

The table in the next page illustrates the company full market capitalization rank range and number of companies in each market capitalization index.

Market Capitalization Indices	Company Full Market Capitalization Rank Range	Number of Companies
MSCI US Large Cap 300	1 - 300	300
MSCI US Mid Cap 450	301 - 750	450
MSCI US Small Cap 1750	751 - 2500	1750
MSCI US Micro Cap	Eligible companies included in top 99.5% of the US Equity Universe, but not part of IMI.	No set number of companies is targeted.
MSCI US Prime Market 750	1 - 750	750
MSCI US Investable Market 2500	1 - 2500	2500
MSCI US Broad Market	Represents at least 99.5% of the US Equity Universe	No set number of companies is targeted.

The Broad Market Index is the combination of the Investable Market Index and Micro Cap Index, and represents at least 99.5% of the US equity universe.

For the Micro Cap Index, no fixed number of companies is targeted. All securities that are included in the top 99.5% of the US equity universe and are not part of the Investable Market Index are preliminarily attributed to the Micro Cap Index provided their company full market capitalization is at least USD 20 million.

2.3.2 Migration of Securities between Market Capitalization Indices

The migration of securities between market capitalization indices is controlled by using buffer zones. However, in order to avoid that constituents, which repeatedly fall within the buffer zones end up distorting the representation of the various market capitalization indices, a maximum is set to the length of time constituents can remain in the buffer zones during the semi-annual index reviews.

2.3.2.1 Buffer Zones

For an existing constituent with a company full market capitalization rank falling outside of the original market capitalization segment range definition to be eligible to remain in its current market capitalization index, its company full market capitalization rank must lie within the following buffer zones:

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

	Large Cap	Mid Cap	Small Cap	Micro Cap
Market Capitalization Segment Definition	1-300	301-750	751-2500	
Upside Buffer Zone		201-300	551-750	1851-2500
Downside Buffer Zone	301-450	751-1100	2501-3000	

An asymmetrical buffer zone consisting of 100 companies on the upside and 150 companies on the downside is used around the market capitalization cut-off levels between the large cap and the mid cap indices. For example, a constituent company and its securities leave the large cap index when its company full market capitalization rank falls below 450. Similarly, a constituent company and its securities in the Mid Cap Index enter the large cap index when it reaches company full market capitalization rank of 200.

Likewise, an asymmetrical buffer zone consisting of 200 companies on the upside and 350 companies on the downside is applied around the market capitalization cut-off levels between the mid cap and the small cap indices. Finally, at the lower end of the market capitalization spectrum, asymmetrical buffer zone, consisting of 650 companies on the upside and 500 companies on the downside is applied around the market capitalization cut-off point of the small cap and the micro cap indices.

The buffer zones are used to manage constituent migration during quarterly index reviews and semi-annual index reviews. During the quarterly index reviews, buffer zones are used within the Investable Market Index and the Micro Cap Index separately, and hence there is no migration of constituents between the two indices. During the semi-annual index reviews, the buffer zones are used across all constituents within the eligible US equity universe and therefore, there is migration of companies and their securities across the broad market index.

2.3.2.2 Maximum Length of Time in the Buffer Zones

If a constituent falls in the same buffer zone for four consecutive semi-annual index reviews, it will be re-classified to the appropriate market capitalization index at the fourth semi-annual index review.

Under this rule, for instance, if a large cap constituent is ranked between 301 and 450 for four consecutive semi-annual index reviews, it is re-classified in the Mid Cap Index at the fourth semi-annual index review. Likewise, if a Mid Cap Index constituent is ranked between 201 and 300 for four consecutive semi-annual index reviews, it is re-classified in the large cap index. In addition, if a mid cap

constituent is ranked between 751 and 1100 for four consecutive semi-annual index reviews, it is re-classified in the Small Cap Index. In the case of a small cap constituent, if it is ranked between 551 and 750 for four consecutive semi-annual index reviews, it is re-classified in the Mid Cap Index. If the small cap constituent is ranked between 2501 and 3000 for four consecutive semi-annual index reviews, it is re-classified in the Micro Cap Index. Likewise, if a Micro Cap Index constituent is ranked between 1851 and 2500 for four consecutive semi-annual index reviews, it is re-classified in the Small Cap Index, provided it passes the investability screens for the Investable Market Index.

This re-classification rule is only applicable during the semi-annual index reviews.

For further details on the quarterly index review and the semi-annual index review, see Section 4, entitled "Maintaining the US Equity Indices".

2.3.3 Final Attribution of Securities to Market Capitalization Indices

After using the buffer rules to manage the migration of constituents, securities of companies within each market capitalization index are ranked again by descending company full market capitalization and the number of companies is counted. If the number of companies in an index is less than the original number of companies that correspond to the index, the securities of the largest companies from the next largest index are migrated into the index until the original number of companies is reached. On the other hand, if the number of companies in an index is more than the original number of companies used to define the market capitalization index, the securities of the smallest companies within that index are migrated out of the index and into the next largest index until the original number of companies is reached.

For instance, after applying the buffer rules, if the number of companies in the large cap index is more than 300, the smallest securities by company full market capitalization in the large cap index are migrated to the Mid Cap Index from the large cap index until the number of companies in the large cap index equals 300. If the number of companies is less than 300, the largest securities by company full market capitalization in the Mid Cap Index are migrated to the large cap index until the number of companies equal 300. This step is repeated for all the other market capitalization indices of the US Equity Indices.
It is only at the semi-annual index reviews that the final attribution of securities to market capitalization index occurs, ensuring that the market capitalization indices in the investable market segment contain the number of companies originally used to define each market capitalization segment.

All securities that are included in the top 99.5% of the US equity universe and are not part of the Investable Market Index will be included in the Micro Cap Index, provided they pass the investability screen for Micro Cap Index securities as outlined in section 2.2 and their company full market capitalization is at least USD 20 million. Current eligible constituents of the Micro Cap Index are not deleted from the Micro Cap Index, until their company full market capitalization falls below USD 10 million, they cross the micro cap upper buffer of rank of 1850 or they are added to the Investable Market Index to fill any vacancies created.

2.4 Adjusting the Full Market Capitalization of Selected Securities for Free Float

After selecting and assigning the securities to their appropriate market capitalization indices, MSCI calculates the free float-adjusted market capitalization of each security in order to represent the securities

in the US Equity Indices at their investable weight. The process of free float-adjusting market capitalization involves:

- Defining and estimating the free float available to US domestic investors for each security.
- Assigning a free float-adjustment factor to each security.
- Calculating the free float-adjusted market capitalization of each security.

2.4.1 Defining and Estimating Free Float

In the context of the US Equity Indices, MSCI defines the free float of a security as the proportion of shares outstanding that are deemed available for purchase in the public equity markets by US domestic investors. In practice, limitations on free float available to US domestic investors include strategic and other shareholdings not considered part of available free float.

For further details on the MSCI free float definition, see Appendix II, entitled "Free Float Definition and Estimation Guidelines".

2.4.1.1 Estimation of Free Float Available to US Domestic Investors

The free float of a security is estimated as its total number of shares outstanding less shareholdings classified as strategic and/or non-free float. Examples of shares excluded from free float are stakes held by strategic investors such as governments, corporations, controlling shareholders and management. No foreign ownership limit is taken into consideration in the free float calculation.

Non-Free Float Shareholdings (%)	=	Number of Shares Classified as Non-Free Float divided by the Total Number of Shares

Free Float (%)	=	100% minus Non-Free Float Shareholdings (%)

2.4.2 Assigning a Free Float-Adjustment Factor

MSCI free float-adjusts the market capitalization of each security in the MSCI US Equity Indices using an adjustment factor, referred to as the Domestic Inclusion Factor (DIF).

- For securities with free float greater than 15%, the DIF is equal to the estimated free float, rounded up to the closest 5%.
- For securities with free float less than 15%, the DIF is equal to the estimated free float, rounded to the closest 1%.
-

2.4.3 Calculating the Free Float-Adjusted Security Market Capitalization

The free float-adjusted market capitalization of a security is calculated as the product of the DIF and the security's full market capitalization.

Free Float-Adjusted Market Capitalization = DIF times the Security's Full Market Capitalization

The example below illustrates the calculation of the free float-adjusted market capitalization of securities.

Example:
Calculating Free Float-Adjusted Market Capitalization of Securities:

Suppose ABC Corp has two listed securities, Class A and B, and one unlisted security, Class C.

	Class A	*Class B*	*Class C*
Total number of shares outstanding	10,000,000	10,000,000	10,000,000
Number of shares classified as non-free float	4,300,000	8,760,000	10,000,000
Non-free float shareholding (%)	43.0%	87.6%	100%
Free float (%)	57.0%	12.4%	0%
Domestic Inclusion Factor (DIF)	**0.60**	**0.12**	**0**
Market price ($)	500	100	500*
Full market capitalization ($ mm)	5,000	1,000	5,000
Free float-adjusted market capitalization ($ mm)	**3,000**	**120**	**0**

* Where each Class C share can be converted into 1 Class A share. To price unlisted securities for the calculation of company market capitalization, MSCI uses the price of the listed security to which the unlisted security can be converted into, adjusted for the conversion ratio. The conversion ratio is defined as the number of listed securities for which each unlisted security will be converted into. For example, if each unlisted security is converted into two listed securities, then the conversion ratio is 2. If the unlisted security is not convertible to another listed security, or if the conversion ratio is not available, it is assumed to be convertible to the listed security that displays the most similar characteristics as the unlisted security.

2.5 Classifying Securities under the Global Industry Classification Standard (GICS)

All selected securities are assigned to the industry that best describes their business activities. To this end, MSCI has designed, in conjunction with Standard & Poor's, the Global Industry Classification Standard (GICS). This comprehensive classification scheme provides a universal approach to industries worldwide and forms the basis for achieving MSCI's objective of reflecting broad and fair industry representation in its indices.

Under the Global Industry Classification Standard (GICS), each company is assigned uniquely to one sub-industry according to its principal business activity. Therefore, a company can only belong to one industry grouping at each of the four levels of the GICS, which consists of 10 sectors, 24 industry groups, 68 industries, and 154 sub-industries.

For further details on the GICS, see Appendix III, entitled "Global Industry Classification Standard (GICS)".

Section 3: Constructing the US Value and Growth Indices

After constructing the US market capitalization indices based on rules described in Section 2, MSCI constructs the value and growth indices for each of the large cap, mid cap and small cap indices, which involves:

- Determining the values of the variables used to specify value and growth characteristics for each security.
- Calculating the z-scores of each variable for each security.
- Aggregating the style z-scores for each security to determine the security's overall style characteristics.
- Assigning initial style inclusion factors for each security.
- Achieving the 50% free float-adjusted market capitalization target by allocating securities to the value and growth indices after applying buffer rules.

3.1 Variables Used to Specify Value and Growth Characteristics

The value and growth indices construction process begins by determining the values of the variables used to specify value and growth characteristics.

The value investment style characteristics for index construction are defined using the following three variables:

- Book value to price ratio (BV / P)
- 12-month forward earnings to price ratio (E fwd / P)
- 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.

The growth investment style characteristics for index construction are defined using the following five variables:

- Long-term forward earnings per share (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)
- 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.

In addition, sales are typically not relevant for financial companies. Therefore, no long-term historical SPS growth trend is calculated for securities classified in the Banks (4010) and Diversified Financials (4020) industry groups, other than securities classified in the Multi-Sector Holdings (40201030) sub-industry, under the Global Industry Classification Standard (GICS).

For further details on the GICS, see Appendix III, entitled "Global Industry Classification Standard (GICS)," and for further details on definitions and computations of the variables, see Appendix IV, entitled "Variable Definitions and Computations".

3.2 Standardizing the Variable Values for Each Security

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 Variables

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 V, 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, as it is the most systematically associated with the concept of growth and it captures growth style attributes relatively more effectively than other variables. Consequently, forward-looking and historical measures of growth are equally weighted in computing the growth z-score.

Computing the growth z-score differs from computing the value z-score because missing variable z-scores are not excluded from the calculation and their z-scores are set to zero (i.e., to the average of the market capitalization index). This is because variables used to define growth investment style characteristics are less correlated to one another compared to those that are used to define value investment style characteristics. Hence, excluding missing variables from the growth z-score calculation could result in a biased growth z-score that is influenced too significantly by variable z-scores that are not missing. In addition, this treatment ensures that in cases where many variables are missing, the resulting growth z-score is close to the market average.

The long-term historical SPS growth trend is not used to specify growth characteristics for securities classified in the Banks (4010) and Diversified Financials (4020) industry groups, other than securities classified in the Multi-Sector Holdings (40201030) sub-industry, 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:

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

For a financial company:

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

Example:
Calculating the Growth Z-Score:

	Security A	*Security B*	*Security C*
Long-term forward EPS growth rate z-score	-0.19	0.68	-1.20
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	Not Available
Long-term historical SPS growth trend z-score	0.10	Not Relevant (Financial Company)	0.50
Growth Z-Score	**0.17**	**0.34**	**-0.42**

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 historical EPS growth rate variable is missing for Security C, and it will be treated as 0 and the denominator will still be 6.

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 with 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 indices. 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. As 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 and the remaining 65% of the security's free float-adjusted market capitalization is allocated to the growth index. Exhibit 2 on the next page 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:

$$value\ contribution = \frac{value\ z\text{-}score^2}{\text{distance}^2} = \frac{value\ \ z\text{-}score^2}{value\ z\text{-}score^2 + growth\ z\text{-}score^2}$$

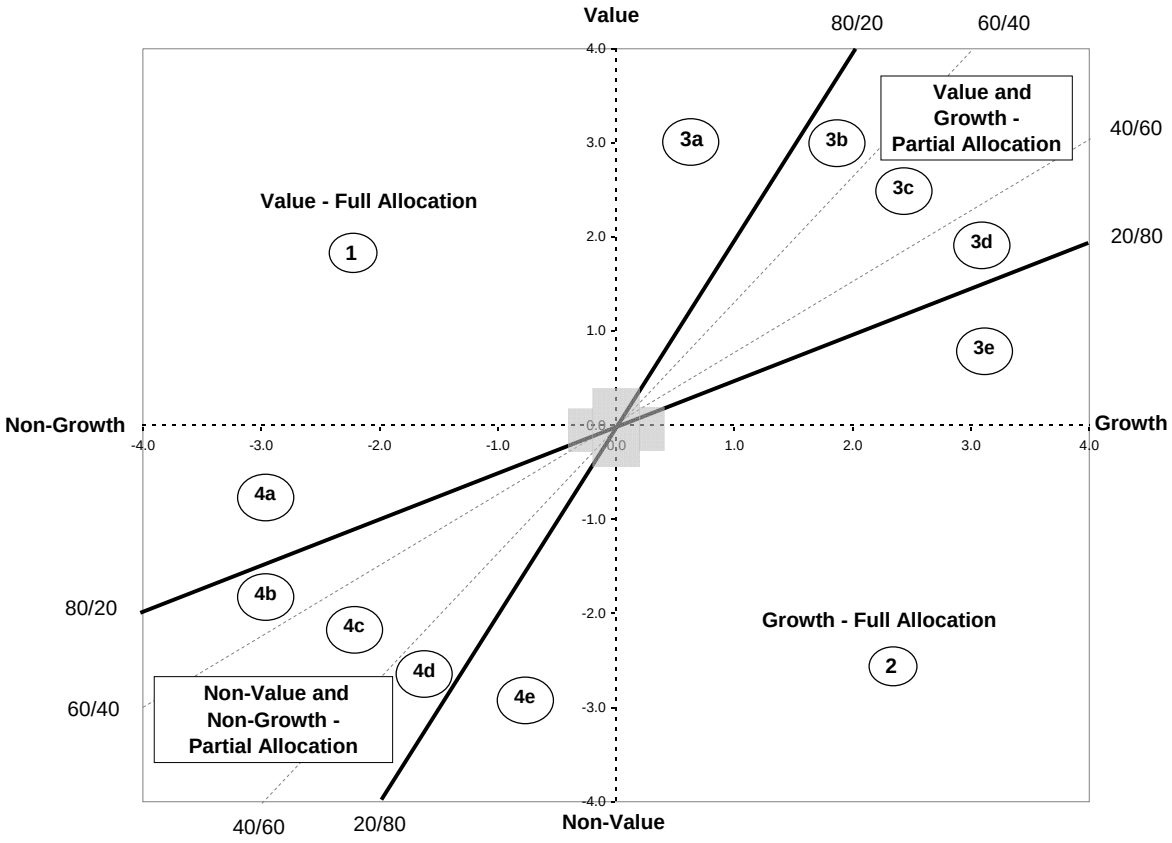
$$growth\ contribution = \frac{growth\ z\text{-}score^2}{\text{distance}^2} = \frac{growth\ \ z\text{-}score^2}{value\ z\text{-}score^2 + growth\ z\text{-}score^2}$$

$$value\ contribution + growth\ contribution = 1$$

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 2, 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 2 – 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 Indices

The value and growth indices target a 50% free float-adjusted market capitalization representation for each of the value and growth indices 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 indices.

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 indices, 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 2.

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 market capitalization index, its free float-adjusted market capitalization can be partially allocated to the value and growth indices 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 indices 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	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**	**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.

Section 4: Maintaining the US Equity Indices

The MSCI US Equity Indices are maintained with the objective of reflecting the evolution of the US equity markets, including the evolution of the market's market capitalization and style segments on a timely basis. In maintaining the indices, emphasis is also placed on their continuity and on minimizing unnecessary index turnover.

In this regard, the market capitalization and value and growth indices are fully reviewed on a semi-annual basis, at the end of May and November, and the market capitalization indices are partially reviewed at the end of February and August. In addition, consistent with the index methodology employed in maintaining existing MSCI international equity indices, MSCI reflects corporate events in the indices as they occur.

Maintaining the US Equity Indices involves two main dimensions. The first is related to the maintenance of the constituents of the US Equity Indices, including additions to and deletions from the indices, changes in Domestic Inclusion Factors (DIFs), changes in number of shares and changes in industry classification. The second is the style maintenance of the securities, including the maintenance of the 8 value and growth variables.

Overall, index maintenance can be described by the following three broad categories of implementation of changes.

- Semi-annual index reviews, intended to reconstitute the indices on the basis of a new US equity universe while taking buffer rules into consideration. Semi-annual index reviews intend to ensure that the broad market index represents at least 99.5% of the US equity universe. During the May semi-annual index reviews, the free float of all constituents and non-constituents is also systematically reassessed.
- Quarterly index reviews, aimed at promptly reflecting significant moves of securities within the Investable Market Index and other significant market events and their corresponding impact on DIFs.
- Ongoing event-related changes, which are generally implemented in the indices as they occur.

4.1 Semi-Annual Index Review

The semi-annual index review involves a comprehensive review of the market capitalization indices as well as the value and growth indices. During the review, changes in the investability of constituents and non-constituents are also assessed. In addition, during the May semi-annual index review, the free float of all constituents and non-constituents is also systematically reassessed.

4.1.1 Semi-Annual Index Review Process for Market Capitalization Indices

During each semi-annual index review, a new US equity universe is identified and companies and their securities are assigned to the appropriate market capitalization indices after accounting for the buffer rules, and the number of companies in the market capitalization indices, within the Investable Market

Index is brought back to the original number as outlined in Section 2. In addition, the Broad Market Index is adjusted to represent at least 99.5% of the US equity universe.

4.1.2 Semi-Annual Index Review Changes in DIFs and Number of Shares

During the May and November semi-annual index reviews, significant changes in free float estimates and corresponding changes in the DIFs for constituents, related to relatively large events, are reflected in the indices. Changes may result from the following:

- Large market transactions, involving strategic shareholders that are publicly announced. (For example, transactions made by way of immediate bookbuilding and other processes).
- Secondary offerings of existing shares that, given the lack of sufficient notice, were not reflected immediately.
- Corrections resulting from the reclassification of shareholders from strategic to non-strategic and vice versa.
- Update of DIFs following the public disclosure of the new shareholder structure for companies involved in mergers, acquisitions or spin-offs, where different from MSCI's pro forma free float estimate at the time of the event.
- Large conversions of exchangeable bonds and other similar securities into already existing shares.
- End of lock-up periods or expiration of loyalty incentives for non-strategic shareholders, which determine the reclassification of these shareholdings and result in an increase in free float.
- Changes in DIFs as a result of other events of similar nature.

In addition, during the May semi-annual index review, a detailed review of the shareholder information used to estimate free float for constituent and non-constituent securities is conducted. The review is comprehensive, covering all aspects of shareholder information.

For further details on DIF changes that are implemented during a semi-annual index review, see Appendix VII entitled "Quarterly and Semi-Annual Index Review Changes in DIFs".

During the May and November semi-annual index reviews, updates in number of shares are also implemented. They are generally small changes in a security's shares outstanding and result from amongst other things:

- Exercise of options or warrants and employee stock option plans.
- Conversion of convertible bonds or other instruments, including periodic conversion of preferred stocks, and small debt-to-equity swaps.
- Periodic share buybacks.
- Increases of less than 5% in a security's number of shares resulting from acquisition of non-listed companies.
- Other changes in number of shares resulting from events that could not be implemented on or near the effective dates, and where no price adjustment factor (PAF) is necessary.
- Share cancellations.

Updates in number of shares implemented as part of the semi-annual index review could also trigger a review of the free float of the security. Any resultant changes in Domestic Inclusion Factor (DIF) are implemented simultaneously. Updates in number of shares policy applies to both May and November semi-annual index reviews.

4.1.3 Semi-Annual Index Review Process for Value and Growth Indices

During the semi-annual index review, new value z-scores and growth z-scores are calculated for the pro forma market capitalization index constituents and after applying the buffer rules, securities are allocated to the value and growth indices, targeting 50% of the free float-adjusted market capitalization within each market capitalization index as outlined in Section 3.

4.1.4 Semi-Annual Index Review Frequency and Timing of Implementation

The semi-annual index review is conducted every 6 months and implemented as of the close of the last business day of May and November.

4.1.5 Date of Data Used for Semi-Annual Index Review

In general, data as of the end of March and the end of September is used to create the eligible US equity universe and to determine the values of the fundamental and forward looking data used to determine style characteristics for the May and the November semi-annual style index reviews respectively.

The cut-off date for market capitalization and prices is generally any one of the last 10 business days of April and October for the May and the November semi-annual style index reviews respectively. This same price is used for the calculation of the 3 price based ratios used to determined value style characteristics.

4.2 Quarterly Index Review

The quarterly index review process is designed to ensure that the indices continue to be an accurate reflection of evolving equity markets. This is achieved by promptly reflecting significant moves of constituents within the Investable Market Index at the time of the quarterly index review. In addition, other significant market events affecting constituents and their corresponding impact on DIFs, which were not captured in the Investable Market Index and the Micro Cap Index at the time of their actual occurrence, are also reflected at the quarterly index review.

During a quarterly index review, only the market capitalization indices are reviewed using buffer zones described in Section 2.3.2.1 and only securities affected by changes in the market capitalization indices are also reviewed for style.

Quarterly index reviews may result in changes in DIFs, updates in number of shares or changes in the market capitalization and/or style indices for existing constituents. There are no new additions to or deletions from the Investable Market Index and the Micro Cap Index at the quarterly index review, unless due to a corporate event or early additions coinciding with the quarterly index review or deletions that result from corrections to the US equity universe.

4.2.1 Quarterly Index Review Changes in Constituents of the Market Capitalization Indices

During the quarterly index reviews, the market capitalization rankings are determined within the Investable Market Index only. During a quarterly index review, the existing constituents of the Investable Market Index are reviewed for market capitalization using the buffer zones as described in Section 2.3.2.1. Constituents lying outside of the buffer zones are moved to the appropriate market capitalization index and are not replaced by other companies and securities. Therefore, during a quarterly index review, the market capitalization indices are not brought back to the original number of companies used to specify each market capitalization index within the Investable Market Index.

4.2.2 Quarterly Index Review Changes in DIFs and Number of Shares

The scope of the changes in DIFs at the quarterly index reviews is equivalent to the scope of the November semi-annual index review changes in DIFs, as described in Section 4.1.2 entitled "Semi-Annual Index Review Changes in DIFs and Number of Shares."

Changes in number of shares during the quarterly index reviews are those typically implemented during semi-annual index reviews, as outlined in Section 4.1.2.

For further details on DIF changes that are implemented during a quarterly index review, see Appendix VII entitled "Quarterly and Semi-Annual Index Review Changes in DIFs".

4.2.3 Quarterly Index Review Changes in Constituents of the Value and Growth Indices

During the quarterly index review, style review is conducted only for securities affected by changes in the market capitalization indices. Hence, once the new market capitalization index has been determined for the affected securities, these are reviewed for style, based on their value z-scores and growth z-scores computed using the latest available values of the eight variables and the daily market capitalization weighted means and standard deviations available for each of the variables within their corresponding market capitalization index. As there is no new allocation process involved, no buffer rules are applied during the style analysis at the quarterly index review. For further details on the daily calculations, see Section 4.3, entitled "Ongoing Event-Related Changes".

4.2.4 Quarterly Index Review Frequency and Timing of Implementation

The implementation of changes resulting from quarterly index reviews occurs on only two dates throughout the year: as of the close of the last business day of February and August.

4.2.5 Date of Data Used for Quarterly Index Review

In general, the cut-off date for market capitalization and prices used for the February and August quarterly index review is any one of the last 10 business days of January and July respectively. This same price is used for the calculation of the 3 price based ratios used to determined value style characteristics.

4.3 Ongoing Event-Related Changes

Ongoing event-related changes to the indices are the result of mergers, acquisitions, spin-offs, delistings, reorganizations and other similar corporate events. They can also result from capital reorganizations in the form of equity offerings, bonus issues, stock splits and other similar corporate actions that take place on a continuing basis. These changes are generally reflected in the indices at the time of the event.

In order to assess the impact of significant events, MSCI maintains a daily ranking of constituents in the current Broad Market Index in descending order of company full market capitalization, as well as a daily calculation of market capitalization weighted means and standard deviations for each of the 8 value and growth variables within each market capitalization index in the Investable Market Index. These rankings and calculations are based on the previous day's closing market capitalization.

The appropriate post-event market capitalization index of a company and its securities can be determined by comparing the company's post-event full market capitalization with the daily rankings. Once the appropriate market capitalization index has been determined, the securities are reviewed for style, based on their value z-scores and growth z-scores computed using the latest available values of the eight variables and the daily calculation of market capitalization weighted means and standard deviations of their corresponding market capitalization indices. During the market capitalization and style analysis related to corporate events, the number of companies in the market capitalization indices are not brought back to their original number and the 50% free float-adjusted market capitalization is not targeted in the value and growth indices. In additions, buffer rules do not apply.

General principles that are applied in the treatment of these ongoing event-related changes are described in the following pages. The handling of ongoing event-related changes can be classified in two broad categories:

- Corporate events affecting existing index constituents.
- Corporate events affecting non-index constituents.

4.3.1 Corporate Events Affecting Existing Index Constituents

Corporate events can affect existing index constituents in various ways:

- Changes in characteristics of existing constituents.
- Early inclusions of non-index constituents.
- Early deletions of existing index constituents.

4.3.1.1 Changes in Characteristics of Existing Constituents

Changes in characteristics of existing constituents include changes in their market capitalization, style characteristics 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 is 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 indices 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 float estimation related to the event. In addition, when appropriate, the number of shares changes resulting from the corporate event also incorporate any pending updates in number of shares.

Increases in number of shares and changes in DIFs resulting from all equity offerings as well as increases in DIFs resulting from secondary offerings representing at least 5% of the security's number of shares will be implemented as soon as practicable after the offering is priced. Generally, implementation takes place as of the close of the same day that the pricing of the shares is made public. If this is not possible, the implementation will take place as of the close of the following trading day. An equity offering involves the issuance of new shares by a company while a secondary offering involves the distribution of current shareholders' existing shares in a listed company and are usually pre-announced by a company or by a company's shareholders and open for public subscription during a pre-determined period.

In order to reflect significant changes in market capitalization of existing constituents in the Investable Market Index in a timely fashion while minimizing index turnover, the market capitalization and style characteristics of a security are reviewed simultaneously with the event, if the market capitalization change implied by the event, including potential update in number of shares for the security, is deemed significant. Significant market capitalization change is defined as an increase of 50% or greater, or a decrease of 33% or more in the company's pre-event full market capitalization.

However, following the market capitalization review, if the post event entity remains in the same market capitalization index, the style characteristics of the affected securities are not reviewed if any of the following criteria is met:

1. When two constituents within the same market capitalization index are involved in mergers and acquisitions and their Value Inclusion Factors (VIFs) are equal.
2. Decreases in market capitalizations due to buybacks of shares.
3. Increases in market capitalizations due to issuances of new shares in order to raise cash, unless it is intended for the payment of an acquisition in the very near term.

The guidelines regarding significant market capitalization changes described above apply in most corporate events cases. For corporate events not described above or combinations of different types of corporate events and other exceptional cases, MSCI will determine the most appropriate implementation method and announce it prior to the changes becoming effective in the indices.

The above rule regarding significant events does not apply to constituents of the Micro Cap Index unless they are involved in a corporate event with an Investable Market Index constituent and the event is considered significant as described above, in which case a size and style analysis will be performed. If a significant change in market capitalization causes the Micro Cap Index constituent's full company market capitalization to go below USD 10 million, the constituent will be considered for early deletion from the Micro Cap Index.

Changes in industry classification resulting from corporate events are generally implemented simultaneously with the event. Other changes in industry classification are implemented at the end of the month.

4.3.1.2 Early Inclusions of Non-Index Constituents

When there is a corporate event affecting index constituents, non-index constituents that are involved in the corporate event are generally considered for immediate inclusion to replace the constituents affected in the US Equity Indices. All early inclusions are conditional upon the non-index constituents passing all the investability screens described in Section 2.2 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. In addition, if a constituent's share class is converted into another share class that is new or currently not in the index, this results in the inclusion of one or more share classes in the indices to replace the constituent.

Such non-index constituents are generally included in the same market capitalization and value and growth indices as the affected index constituents, since they are considered to be a continuation of the index constituents. However, if the difference between the post-event market capitalization of the non-index constituents and the respective index constituents is deemed significant, as discussed in section 4.3.1.1, a market capitalization and style review is conducted for the non-index constituents. Thereafter, they are included in the appropriate market capitalization indices based on their market capitalization rankings within the current broad market index, and the appropriate value and growth indices based on their style attribution within the relevant market capitalization indices.

Securities spun-off from existing constituents are also considered for inclusion at the time of the event. A systematic market capitalization and style review is conducted for all spun-off securities from existing Investable Market Index constituents provided that they pass all the investability screens described in Section 2.2 with the exception of the length of trading and liquidity screens. Thereafter, they are included in the appropriate market capitalization indices based on their market capitalization rankings within the current broad market index, and the appropriate style indices based on their style attribution within the relevant market capitalization indices.

Securities spun-off from existing Micro Cap Index constituents are eligible for inclusion in the Micro Cap Index only, provided their company full market capitalization is at least USD 10 million and they pass all the investability screens described in Section 2.2 with the exception of the length of trading and liquidity screens.

4.3.1.3 Early Deletions of Existing Index Constituents

MSCI will remove from the US Equity Indices as soon as practicable securities of companies that will be delisted, companies that file for bankruptcy and companies that file for protection from their creditors and/or are suspended for which a return to normal business activity and trading is unlikely in the near future.

When the primary exchange price is not available, MSCI will delete securities at an over the counter or equivalent market price when such a price is available and deemed relevant. If no over the counter or equivalent price is available, the company will be deleted at the smallest price of USD 0.01 at which a security can trade on a given exchange.

For securities that are suspended, MSCI will carry forward the market price prior to the suspension during the suspension period.

In addition, when a constituent company is involved in a corporate event, the securities of the constituent company are removed from the indices if due to the event they no longer pass the investability screens described in Section 2.2. Conversions of a constituent's share class into another share class resulting in the deletion of one or more share classes in the indices are also handled in the same manner.

4.3.2 Corporate Events Affecting Non-Index Constituents

4.3.2.1 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 Equity Indices at the time of the semi-annual index review. However, for IPOs and newly listed securities which are significant in market capitalization and are ranked as one of the top 750 largest companies in the current Broad Market Index as of the close of its first trading day, an early inclusion outside of the semi-annual index review is considered, if they pass all the investability screens described in Section 2.2, with the exception of the length of trading and liquidity screens.

If the decision is made to include an IPO or a newly listed security 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 or the next semi-annual index review.

Securities may also be considered for early inclusion in other significant cases, including but not limited to those resulting from removal or relaxation of FOLs, a large additional offering of an already listed security, consolidation or restructuring in the industry giving rise to a large new company. Such cases will be treated in the same way as IPOs of significant size.

For significant IPOs and all other early inclusions, a market capitalization and style review is conducted. Thereafter, they are included in the appropriate market capitalization indices based on their market

capitalization rankings within the current Investable Market Index, and the appropriate style indices based on their style attribution within the relevant market capitalization indices.

4.4 Announcement Policy

4.4.1 Semi-Annual Index Review

The results of the semi-annual index reviews are announced at least two weeks in advance of their effective implementation dates as of the close of the last business day of May and November.

4.4.2 Quarterly Index Review

The results of the quarterly index reviews are announced at least two weeks in advance of their effective implementation dates as of the close of the last business day of February and August.

4.4.3 Ongoing Event-Related Changes

All changes resulting from corporate events are announced prior to their implementation in the MSCI Indices.

The changes to the Investable Market Index are typically announced at least ten business days prior to these changes becoming effective in the indices as an "expected" announcement, or as an "undetermined" announcement, when the effective dates are not known yet or when aspects of the event are uncertain. MSCI sends "confirmed" announcements at least two business days prior to events becoming effective in the indices, provided that all necessary public information concerning the event is available. The full list of all new and pending changes is delivered to clients on a daily basis, at 5:30 PM US Eastern Standard Time (EST) through the Advance Corporate Events (ACE) File.

In exceptional cases, events are announced during market hours for same or next day implementation. Announcements made by MSCI during market hours are usually linked to late company disclosure of corporate events, or unexpected changes to previously announced corporate events.

Both equity offerings and secondary offerings for US securities in the Investable Market Index will be confirmed through an announcement during market hours for same or next day implementation, as the completion of the events cannot be confirmed prior to the notification of the pricing.

Early deletions of constituents due to bankruptcy or other significant cases are announced as soon as practicable prior to their implementation in the MSCI Indices.

A more descriptive text announcement is sent to clients of the Investable Market Index for significant events that meet any of the following criteria:

1. Early additions and deletions of constituents described in Sections 4.3.1.3 and 4.3.2.1.
2. Migration of constituents from one market capitalization and/or value and growth index to another.
3. Changes in free float-adjusted market capitalization equal to or larger than US$ 5 billion.
4. Significant market capitalization changes as described in Section 4.3.1.1.

If warranted, MSCI may make additional announcements for events, which are complex in nature and would benefit from additional clarification.

For the Micro Cap Index, MSCI only sends "confirmed" announcements at least two business days prior to events becoming effective in the index, provided that all necessary public information concerning the event is available. The full list of "confirmed" changes is delivered to clients on a daily basis at 5:30 PM US Eastern Standard Time (EST) through the Advance Corporate Events (ACE) File.

4.4.3.1 IPOs and Other Early Inclusions

Early inclusions of large IPOs or newly listed securities are announced no earlier than shortly after the close of the first day of trading and no later than before the opening of the third day of trading in the market where the company has its primary listing.

Early inclusions of already listed securities, which previously failed the investability screens due to low free float and/or security free float-adjusted market capitalization, following large secondary offerings of new and/or existing shares are announced no earlier than shortly after the end of the offer period.

It is MSCI policy not to comment on future listed equity securities, including their industry classification under the Global Industry Classification Standard (GICS), their country classification and their potential inclusions in an MSCI Index. The same applies to non-index constituents that are already listed with pending large events.

4.4.3.2 Global Industry Classification Standard (GICS)

Non-event related changes in industry classification at the sub-industry level are announced at least two weeks prior to their implementation as of the close of the last business day of each month.

Appendices

Appendix I: Country Classification of Securities

This appendix outlines the guidelines MSCI uses to determine the country classification of equity securities.

Each of the securities followed in the MSCI universe is classified in one and only one country.
In general, all companies' equity securities are classified in the country in which they are incorporated and where they have their primary listing. In addition, a security can only be eligible for inclusion in a country index if it is listed in that country. This approach determines the country classification of the vast majority of the cases.

One exception is when a company is incorporated in one country, but has its primary listing in a different country. If the country of incorporation is a tax haven or a country that is not part of MSCI ACWI, then the security's primary listing might be used to determine the country of classification, unless other factors lead to another decision.

In the USA, consideration is also given to the type of financial statements filed by the company. Companies that are listed in the US but incorporated in a country that is not covered by MSCI ACWI or in a tax haven may be included in the USA index universe provided that they file a Form 10-K / 10-Q. There may be exceptions to the above rule, due to historical reasons or market perception for example.

Special cases

Exceptions to the general framework can be made in cases for securities that have more than one primary listing, or when a company has its operations in one country but is listed in another. In such circumstances, MSCI determines the appropriate country of classification using a set of considerations, the most important of which are:

- The company's main equity trading markets and its shareholder base.
- The geographical distribution of its operations (in terms of assets and production).
- The location of its headquarters; and
- The country in which investors consider the company to be most appropriately classified.

Change of Incorporation

In the event that a company already classified in a country by MSCI subsequently re-incorporates in another country it generally will remain within the country in which it was initially classified. However, it may be re-classified into its new country of incorporation if, in addition to the incorporation change, the company's geographical profile has been or will be fundamentally modified. Changes in the country classification of a company's securities generally takes place in the context of the May Annual Index Review, except if the change in country classification is the result of a corporate event, in which case the company's securities may be reclassified simultaneously with the change in incorporation or at a Quarterly Index Review following the corporate event.

When MSCI changes a company's country classification, the company's equity securities are not automatically included in the index of its new country even if it was a constituent of its original country's index. These securities would have to meet all constituent selection criteria for the index of the new country.

Review and Maintenance

MSCI periodically reviews the country classification of companies not classified into their country of incorporation. MSCI also periodically reviews the status of stock exchanges and/or market sections to determine whether securities listed on such exchanges or sections will become part of the universe.

Appendix II: Free Float Definition and Estimation Guidelines

MSCI defines the free float of a security as the proportion of shares outstanding that is deemed available for purchase in the public equity markets by US investors[1]. In practice, limitations on the investment opportunities available to US institutional investors include:

- **Strategic and other non-free float shareholdings**: Stakes held by private or public shareholders whose investment objectives or other characteristics suggest that those holdings are not likely to be available in the market. In practice, disclosure requirements generally do not permit a clear determination of these investment objectives. Therefore, MSCI classifies shareholdings as free float or non-free float based on a categorization of investor types into non-strategic and strategic respectively.

Classification of Shareholder Types

STRATEGIC SHAREHOLDER TYPES (NON-FREE FLOAT)	
Governments	Shareholdings owned by governments and affiliated entities are generally classified as non-free float.
Companies	Shares owned by companies. This includes treasury shares owned by the company itself.[1]
Banks	Shareholdings by banks are considered as strategic, excluding shareholdings held in trust on behalf of third parties that are deemed to be non-strategic.
Principal officers and board members	Shares owned by the company's principal officers or members of the Board of Directors, including shares owned by individuals or families that are related to or closely affiliated with the company's principal officers, members of the Board of Directors, or founding members deemed to be insiders.
Employees	Shares of the employing companies, which are held in a variety of ways including plans sponsored by the employer for the purpose of retirement and savings plans, incentive compensation programs and other deferred and employee pension funds. Includes shares held by both officers and non-officers.

1 If the treasury shares are included in the total shares outstanding used for the calculation of indices, they are taken into account the calculation of free float. Alternatively, treasury shares can be taken out of the total security shares outstanding used for the calculation of the indices and therefore not taken into consideration for the free float calculation.

NON-STRATEGIC SHAREHOLDER TYPES (FREE FLOAT)	
Individuals	Shares owned by individuals, excluding shares owned by individuals or families that are related to or closely affiliated with the company's principal officers or members of the Board of Directors or founding members deemed to be insiders, and, also excluding those shareholdings held by individuals, the significant size of which suggests that they are strategic in nature.
Investment funds, mutual funds and unit trusts	Shares owned in investment funds, mutual funds and unit trusts, including shares owned in passively managed funds.
Security brokers	Non-strategic interests held by broker dealers (e.g.: trades in the process of settlement, holdings in the process of being transferred, as part of underwriting activity etc), unless held within the same group or the nature of holding is deemed strategic.
Pension funds	Shares owned in employee pension funds, excluding shares of the employing company, its subsidiaries or affiliates.
Insurance companies	In principle, all stakes held by insurance companies are part of free float. For exceptions to this general principle, please refer to the additional discussion on insurance companies presented in the next page.
Social security funds	Shares owned in social security funds, unless the fund's management is deemed to exert influence over the management of the company.

In the event that the above categories should not appropriately capture the nature of a specific shareholding, its classification as free float or non-free float will be determined based on a more extensive analysis.

Special Cases

The following guidelines will be applied in analyzing the special cases set forth below:

- **Nominees or trustees:** Shareholdings registered in the name of a nominee or trustee are classified as strategic or non-strategic based on an analysis of who the ultimate beneficial owner of the shares is, according to the shareholder types described above.

- **Government agencies and government-related investment funds:** Shareholdings of government agencies and government-related investment funds are classified based on an analysis of

the objective of the investment and the extent of government involvement in managing the companies.

- **Insurance companies:** Shareholdings by insurance companies are considered as non-free float, when analysis shows that these holdings are unlikely to be made available as free float in the market. This analysis typically looks at the nature of the insurance business, a company's business practices with its group-related or other companies, and the regulatory environment, including fiscal incentives. These factors, individually or combined, could restrict the insurance company's shareholdings from being made freely available in the stock market. Therefore, the treatment of stakes held by insurance companies may differ from company to company.

- **Depository Receipts:** Shares that are deposited to back the issuance of depository receipts such as ADRs and GDRs are classified as non-strategic, unless it is established that a specific stake held in depository receipts is strategic in nature.

- **Shares with "loyalty" incentives:** In a public offering, special incentives are sometimes provided to retail investors and are subject to a minimum holding period. These shares will not be considered as part of the free float during the minimum holding period if the incentives are deemed to be material. In general, a conditional share bonus in a ratio of 1 to 5 (or an equivalent price discount of $1/6^{th}$), or more, will be considered as material.

- **Lock up periods:** Any shares that are subject to lock up periods will be considered as non-free float during the lock up period. At the end of the lock up period, these shares will be classified as strategic or non-strategic based on the nature of the shareholder.

MSCI's estimation of free float is based solely on publicly available shareholder information obtained from multiple information sources. For each security, all available shareholdings are considered where public data is available, regardless of the size of the shareholding. MSCI continuously strives to improve the quality of its free float estimates and their related Domestic Inclusion Factors (DIFs). Consultation may be conducted with analysts, other industry experts and official company contacts, particularly where disclosure standards or data quality make the estimation of free float difficult. Additional shareholder information may come from better disclosure by companies or more stringent disclosure requirements by a country's authorities. It may also come from MSCI's ongoing examination of new information sources for the purpose of further enhancing free float estimates and better understanding of shareholder structure.

Appendix III: Global Industry Classification Standard (GICS)

Introduction

The Global Industry Classification Standard (GICS) was developed by MSCI in collaboration with Standard & Poor's (S&P) to provide an efficient, detailed and flexible investment tool. It is designed to respond to the global financial community's need for a global, accurate, complete and widely accepted approach to defining industries and classifying securities by industry. Its universal approach to industry classification aims to improve transparency and efficiency in the investment process.

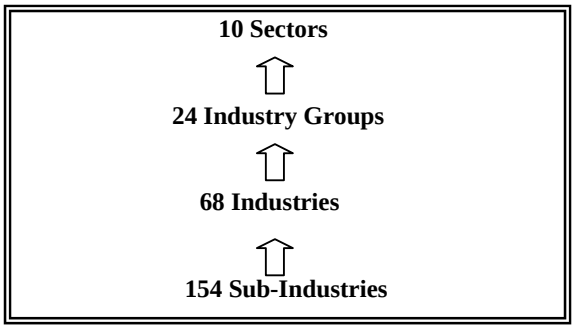
Key Features of GICS

The key features of GICS are that it is:

- Universal: the classification applies to companies globally.
- Accurate: the structure precisely reflects the state of the industries in the equity investment universe.
- Flexible: the classification consists of four levels of analysis, ranging from the most general to the most specialized sub-industry.
- Evolutionary: annual reviews are conducted to ensure that the classification remains fully representative of the universe.

To provide the level of precision critical in the investment process, GICS is designed with four levels of classifications:

The Global Industry Classification Standard (GICS)



GICS has 10 sector classifications:

- Energy
- Materials
- Industrials
- Consumer Discretionary
- Consumer Staples
- Health Care
- Financials
- Information Technology

- Telecommunication Services
- Utilities.

Philosophy and Objectives of GICS

The way in which securities are classified into asset classes forms the basis of many important investment decisions. The relative merits of each security are judged primarily within these asset classes, and investment decisions are taken within this framework.

Approaches to Industry Classification Schemes

While grouping securities by country and regions is relatively straightforward, classifications by industries are more difficult. There are many approaches to developing industry classification schemes. Some of them are discussed below.

At one extreme, is a purely statistical approach, which is solely financial market-based and backward looking, using past returns. Aggregations are formed around correlation, and this often yields non-intuitive groupings that are dissimilar across countries and regions. Another approach attempts to define a priori financial market-oriented groups or themes, such as cyclical, interest rate sensitive, etc. The difficulty, however, lies in finding widely accepted and relatively stable definitions for these themes.

Two other approaches begin with an economic perspective on companies. The first focuses on a production orientation while the other adopts a market or demand orientation in the analysis of companies. The production-oriented approach was effective in the past in its analysis of the microstructure of industries from the standpoint of producers. For instance, it segregated goods and services on the premise that it was a different set of companies that provided each to consumers. As the structure of the global economy evolved, the limitation of this approach became increasingly obvious. The ever-increasing share of discretionary income brought about by economic development, the emergence of the service era, and the availability and accessibility of information with the advent of new communication technology has moved the emphasis from producers to consumers.

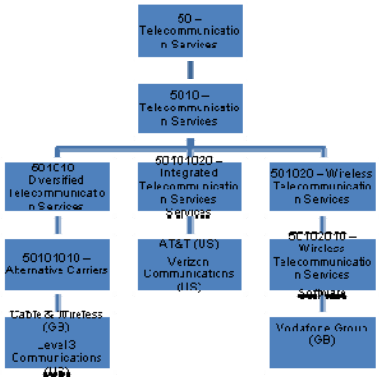
GICS: Market Demand-Oriented

The Global Industry Classification Standard (GICS) is designed to be market demand-oriented in its analysis and classification of companies. For example, drawing the line between goods and services is becoming increasingly arbitrary as they are now commonly sold together. Thus, this distinction between goods and services is replaced by adopting the more market-oriented sectors of "Consumer Discretionary" and "Consumer Staples", which group goods and services sub-industries. In addition, the creation of large stand-alone sectors such as Health Care, Information Technology and Telecommunication Services accurately represents industries that provide significant value to the consumer in today's global, integrated economy. This further contributes to a more uniform distribution of weights among the 10 sectors.

GICS Company Classification

The Global Industry Classification Standard (GICS) is used to assign each company to a sub-industry according to its principal business activity. Since the GICS is strictly hierarchical, a company can only belong to one grouping at each of the four levels.

An Illustration of the GICS – Telecommunication Services Sector:



Classification by Revenue

In order to provide an accurate, complete and long-term view of the global investment universe, a company's revenues often provide a more stable and precise reflection of its activities than earnings. Furthermore, industrial and geographical breakdowns of revenues are more commonly available than earnings broken down the same way for most companies. Nevertheless, company valuations are more closely related to earnings than revenues. Therefore, earnings remain an important secondary consideration in a company's industry classification.

General Guidelines for Classification

The primary source of information used to classify securities is a company's annual reports and accounts. Other sources include brokers' reports and other published research literature. As a general rule, a company is classified in the sub-industry whose definition most closely describes the business activities that generate at least 60% of the company's revenues.

Example: Nokia (FI)

2005 Results	Mobile Phones	Multimedia	Enterprise Solutions	Networks
Revenues	61%	17%	3%	19%
Earnings	72%	17%	0%	17%

Classified as:

GICS Level	GICS Code	Code Description
Sector	45	Information Technology
Industry Group	4520	Technology Hardware & Equipment
Industry	452010	Communications Equipment
Sub-Industry	45201020	Communications Equipment

However, a company engaged in two or more substantially different business activities, none of which contribute 60% or more of revenues, is classified in the sub-industry that provides the majority of both the company's revenues and earnings. When no sub-industry provides the majority of both the company's revenues and earnings, the classification will be determined based on further MSCI research and analysis. In addition, a company significantly diversified across three or more sectors, none of which contributes the majority of revenues or earnings, is classified either in the Industrial Conglomerates sub-industry (Industrial Sector) or in the Multi-Sector Holdings sub-industry (Financials Sector).

Example: General Electric (US)

2005 Results	Infrastructure	Industrial	Healthcare	NBC Universal	Commercial Finance	Consumer Finance
Revenues	29%	23%	10%	10%	14%	13%
Earnings	33%	11%	11%	13%	18%	13%

Classified as:

GICS Level	GICS Code	Code Description
Sector	20	Industrials
Industry Group	2010	Capital Goods
Industry	201050	Industrial Conglomerates
Sub-Industry	20105010	Industrial Conglomerates

In the case of a new issue, the classification will be determined based primarily on the description of the company's activities and pro forma results as given in the prospectus.

Review of Sub-Industry Classification

A company's sub-industry classification will be reviewed either when a significant corporate restructuring occurs or when the new annual report is made available. In any case, in order to provide a stable sub-industry classification, when reviewing a company's classification, changes will be minimized in the sub-industry classification to the extent possible by disregarding temporary fluctuations in the results of a company's different activities.

In the event that the above guidelines should not appropriately capture a particular company's business activity, its classification will be determined based on a more extensive analysis.

GICS (Global Industry Classification Standard)

Effective after close of business (US, EST) Friday August 29, 2008

Sector		Industry Group		Industry		Sub-Industry	
10	Energy	1010	Energy	101010	Energy Equipment & Services	10101010	Oil & Gas Drilling
						10101020	Oil & Gas Equipment & Services
				101020	Oil, Gas & Consumable Fuels	10102010	Integrated Oil & Gas
						10102020	Oil & Gas Exploration & Production
						10102030	Oil & Gas Refining & Marketing
						10102040	Oil & Gas Storage & Transportation
						10102050	Coal & Consumable Fuels
15	Materials	1510	Materials	151010	Chemicals	15101010	Commodity Chemicals
						15101020	Diversified Chemicals
						15101030	Fertilizers & Agricultural Chemicals
						15101040	Industrial Gases
						15101050	Specialty Chemicals
				151020	Construction Materials	15102010	Construction Materials
				151030	Containers & Packaging	15103010	Metal & Glass Containers
						15103020	Paper Packaging
				151040	Metals & Mining	15104010	Aluminum
						15104020	Diversified Metals & Mining
						15104030	Gold
						15104040	Precious Metals & Minerals
						15104050	Steel
				151050	Paper & Forest Products	15105010	Forest Products
						15105020	Paper Products
20	Industrials	2010	Capital Goods	201010	Aerospace & Defense	20101010	Aerospace & Defense
				201020	Building Products	20102010	Building Products
				201030	Construction & Engineering	20103010	Construction & Engineering
				201040	Electrical Equipment	20104010	Electrical Components & Equipment
						20104020	Heavy Electrical Equipment
				201050	Industrial Conglomerates	20105010	Industrial Conglomerates
				201060	Machinery	20106010	Construction & Farm Machinery & Heavy Trucks
						20106020	Industrial Machinery
				201070	Trading Companies & Distributors	20107010	Trading Companies & Distributors
		2020	Commercial & Professional Services	202010	Commercial Services & Supplies	20201010	Commercial Printing
						20201050	Environmental & Facilities Services
						20201060	Office Services & Supplies
						20201070	Diversified Support Services
						20201080	Security & Alarm Services
				202020	Professional Services	20202010	Human Resource & Employment Services
						20202020	Research & Consulting Services
		2030	Transportation	203010	Air Freight & Logistics	20301010	Air Freight & Logistics
				203020	Airlines	20302010	Airlines
				203030	Marine	20303010	Marine
				203040	Road & Rail	20304010	Railroads
						20304020	Trucking
				203050	Transportation Infrastructure	20305010	Airport Services
						20305020	Highways & Railtracks
						20305030	Marine Ports & Services
25	Consumer Discretionary	2510	Automobiles & Components	251010	Auto Components	25101010	Auto Parts & Equipment
						25101020	Tires & Rubber
				251020	Automobiles	25102010	Automobile Manufacturers
						25102020	Motorcycle Manufacturers
		2520	Consumer Durables & Apparel	252010	Household Durables	25201010	Consumer Electronics
						25201020	Home Furnishings
						25201030	Homebuilding
						25201040	Household Appliances
						25201050	Housewares & Specialties
				252020	Leisure Equipment & Products	25202010	Leisure Products
						25202020	Photographic Products
				252030	Textiles, Apparel & Luxury Goods	25203010	Apparel, Accessories & Luxury Goods
						25203020	Footwear
						25203030	Textiles
		2530	Consumer Services	253010	Hotels, Restaurants & Leisure	25301010	Casinos & Gaming
						25301020	Hotels, Resorts & Cruise Lines
						25301030	Leisure Facilities
						25301040	Restaurants
				253020	Diversified Consumer Services	25302010	Education Services
						25302020	Specialized Consumer Services
		2540	Media	254010	Media	25401010	Advertising
						25401020	Broadcasting
						25401025	Cable & Satellite
						25401030	Movies & Entertainment
						25401040	Publishing
		2550	Retailing	255010	Distributors	25501010	Distributors
				255020	Internet & Catalog Retail	25502010	Catalog Retail
						25502020	Internet Retail
				255030	Multiline Retail	25503010	Department Stores
						25503020	General Merchandise Stores
				255040	Specialty Retail	25504010	Apparel Retail
						25504020	Computer & Electronics Retail
						25504030	Home Improvement Retail
						25504040	Specialty Stores
						25504050	Automotive Retail
						25504060	Homefurnishing Retail

30	Consumer Staples	3010	Food & Staples Retailing	301010	Food & Staples Retailing	30101010	Drug Retail
						30101020	Food Distributors
						30101030	Food Retail
						30101040	Hypermarkets & Super Centers
		3020	Food, Beverage & Tobacco	302010	Beverages	30201010	Brewers
						30201020	Distillers & Vintners
						30201030	Soft Drinks
				302020	Food Products	30202010	Agricultural Products
						30202030	Packaged Foods & Meats
				302030	Tobacco	30203010	Tobacco
		3030	Household & Personal Products	303010	Household Products	30301010	Household Products
				303020	Personal Products	30302010	Personal Products
35	Health Care	3510	Health Care Equipment & Services	351010	Health Care Equipment & Supplies	35101010	Health Care Equipment
						35101020	Health Care Supplies
				351020	Health Care Providers & Services	35102010	Health Care Distributors
						35102015	Health Care Services
						35102020	Health Care Facilities
						35102030	Managed Health Care
				351030	Health Care Technology	35103010	Health Care Technology
		3520	Pharmaceuticals, Biotechnology & Life Sciences	352010	Biotechnology	35201010	Biotechnology
				352020	Pharmaceuticals	35202010	Pharmaceuticals
				352030	Life Sciences Tools & Services	35203010	Life Sciences Tools & Services
40	Financials	4010	Banks	401010	Commercial Banks	40101010	Diversified Banks
						40101015	Regional Banks
				401020	Thrifts & Mortgage Finance	40102010	Thrifts & Mortgage Finance
		4020	Diversified Financials	402010	Diversified Financial Services	40201020	Other Diversified Financial Services
						40201030	Multi-Sector Holdings
						40201040	Specialized Finance
				402020	Consumer Finance	40202010	Consumer Finance
				402030	Capital Markets	40203010	Asset Management & Custody Banks
						40203020	Investment Banking & Brokerage
						40203030	Diversified Capital Markets
		4030	Insurance	403010	Insurance	40301010	Insurance Brokers
						40301020	Life & Health Insurance
						40301030	Multi-line Insurance
						40301040	Property & Casualty Insurance
						40301050	Reinsurance
		4040	Real Estate	404020	Real Estate Investment Trusts (REITs)	40402010	Diversified REIT's
						40402020	Industrial REIT's
						40402030	Mortgage REIT's
						40402040	Office REIT's
						40402050	Residential REIT's
						40402060	Retail REIT's
						40402070	Specialized REIT's
				404030	Real Estate Management & Development	40403010	Diversified Real Estate Activities
						40403020	Real Estate Operating Companies
						40403030	Real Estate Development
						40403040	Real Estate Services
45	Information Technology	4510	Software & Services	451010	Internet Software & Services	45101010	Internet Software & Services
				451020	IT Services	45102010	IT Consulting & Other Services
						45102020	Data Processing & Outsourced Services
				451030	Software	45103010	Application Software
						45103020	Systems Software
						45103030	Home Entertainment Software
		4520	Technology Hardware & Equipment	452010	Communications Equipment	45201020	Communications Equipment
				452020	Computers & Peripherals	45202010	Computer Hardware
						45202020	Computer Storage & Peripherals
				452030	Electronic Equipment, Instruments & Components	45203010	Electronic Equipment & Instruments
						45203015	Electronic Components
						45203020	Electronic Manufacturing Services
						45203030	Technology Distributors
				452040	Office Electronics	45204010	Office Electronics
		4530	Semiconductors & Semiconductor Equipment	453010	Semiconductors & Semiconductor Equipment	45301010	Semiconductor Equipment
						45301020	Semiconductors
50	Telecommunication Services	5010	Telecommunication Services	501010	Diversified Telecommunication Services	50101010	Alternative Carriers
						50101020	Integrated Telecommunication Services
				501020	Wireless Telecommunication Services	50102010	Wireless Telecommunication Services
55	Utilities	5510	Utilities	551010	Electric Utilities	55101010	Electric Utilities
				551020	Gas Utilities	55102010	Gas Utilities
				551030	Multi-Utilities	55103010	Multi-Utilities
				551040	Water Utilities	55104010	Water Utilities
				551050	Independent Power Producers & Energy Traders	55105010	Independent Power Producers & Energy Traders

GICS Structure Review Frequency

MSCI and Standard & Poor's are committed to ensuring that the GICS structure remains relevant and up-to-date. This is accomplished through an annual review of the structure. This review includes a detailed internal analysis to develop a proposal for potential structural changes and public request for comments and in-depth client consultations with various market participants as a means of obtaining feedback on proposed structural changes.

Appendix IV: 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

1. Book Value to Price Ratio (BV / P)

The BV / P calculation is as follows:

$$BV / P = \text{book value per share} / \text{price of security}$$

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

2. 12-month Forward Earnings to Price Ratio (E fwd / P)

The E fwd / P is calculated as follows:

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

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

- EPS_1 is the consensus of analysts' earnings estimates for fiscal year 1
- EPS_2 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}

3. 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

1. 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.

2. 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

- EPS_0 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 31, 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%**

3. 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.

4. Long-term Historical EPS Growth Trend (LT his EPS G) and
5. 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:

$$\tilde{\tilde{\tilde{EPS}}} = \sum_{i=1}^{n} \frac{|EPS_i|}{n} \qquad \tilde{\tilde{\tilde{SPS}}} = \sum_{i=1}^{n} \frac{|SPS_i|}{n}$$

The growth trend is finally obtained as follows:

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

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 V: 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 VI: Policy Regarding Market Closures During Index Reviews

For both the quarterly index reviews and the semi-annual index reviews, the following principles apply in case of market closures on the day of implementation. As a reminder, the effective implementation dates for quarterly index reviews are as of the close of the last business day of February and August. The effective implementation dates for the semi-annual index reviews are as of the close of the last business day of May and November.

Market Closures Due to Scheduled Stock Market Holidays

When the NYSE and/or the NASDAQ are closed on the "as of the close of" date due to stock market holiday, the change will be effective on the next day, using the price of the previous day's close.

Unexpected Market Closures

In the event that the NYSE and/or the NASDAQ fail to open for trading and remains closed for the entire trading day on the effective implementation date of the rebalancing due to an unexpected market closure, MSCI will, in principle, postpone the rebalancing of the US Equity Indices. MSCI will rebalance the US Equity Indices as of the close of the first business day that both the NYSE and the NASDAQ reopens for trading and closing prices are available.

Market Outage during the Trading Day

In the event that the NYSE and/or the NASDAQ are affected by an outage during the trading day on the effective implementation date, MSCI will determine its pricing policy for on a case by case basis. In making its decision, MSCI will take into consideration a number of factors including, the time and duration of the outage, information on the outage provided by the specific stock exchange, and other relevant market information.

MSCI will communicate all decisions taken with respect to market outages during the day through the regular client communication channels.

Appendix VII: Quarterly and Semi-Annual Index Review Changes in DIFs

Quarterly Index Review changes in DIF

As stated under section 4.2.2 "Quarterly Index Review Changes in DIFs and Number of Shares", significant changes in free float estimates and corresponding changes in the DIFs for constituents related to relatively large events are reflected in the indices at the quarterly index reviews. DIF changes resulting from large market transactions involving strategic shareholders, that are publicly announced (For example transactions made by way of immediate bookbuilding and other processes, or secondary offerings that were not implemented immediately), will be implemented during a quarterly index review provided they satisfy one of the following conditions:

- The absolute size of the DIF change is 0.15 or more, or,
- For securities classified in the US, the change in free float-adjusted market capitalization resulting from the DIF change represents at least USD 1bn.

The thresholds above only apply to changes in DIFs at the quarterly index reviews.

Buffer rule for DIF changes at Quarterly and Semi-Annual Index Reviews

DIF changes resulting from a change in free float of less than 1% will not be implemented, except in cases of corrections.

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