MSCI Methodology Book

MSCI
China A Style
Index Series
Methodology

INDEX CONSTRUCTION OBJECTIVES AND METHODOLOGY FOR
THE MSCI CHINA A ABSOLUTE VALUE AND GROWTH INDEX SERIES
AND THE MSCI CHINA A VALUE AND GROWTH INDEX SERIES

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<u>Notice and Disclaimer</u>

About MSCI Barra

MSCI Barra develops and maintains equity, fixed income, multi-asset class, REIT and hedge fund indices that serve as benchmarks for an estimated USD 3 trillion on a worldwide basis. Barra's risk models and analytics products help the world's largest investors analyze, measure and manage portfolio and firm-wide investment risk. MSCI Barra is headquartered in New York, with research and commercial offices

around the world. Morgan Stanley, a global financial services firm and a market leader in securities, asset management, and credit services, is the majority shareholder of MSCI Barra, and Capital Group International, Inc. is the minority shareholder.

MSCI China A Style Index Series Methodology

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Section 1: MSCI China A Style Index Series Methodology Overview

1.1 General

1.1.1 Introduction

For over 30 years, MSCI Barra has been constructing global equity benchmark indices that contribute to the international investment management process. These indices are designed to serve as relevant and accurate performance benchmarks and 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 Equity Index Series fulfills the needs of a wide variety of international investors. In constructing its equity indices, MSCI Barra 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.

Since 1997, MSCI Barra has been serving the needs of international style investors with its Global Value and Growth Index Series. From 1997 to May 2003, the value and growth indices were constructed based on a single-dimensional framework that allocated securities in a MSCI Standard Country Index into either value or growth based on their Price to Book Value ratios (P/BV). After May 2003, MSCI Barra began to apply 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.

In 2005 MSCI Barra launched the MSCI China A Index, which is its first index for the China domestic market. The success of this index formed the basis for the introduction of the MSCI China A Style Indices, which are designed to reflect the style effects in the China A market, just as the MSCI Global Value and Growth Indices are designed to reflect the style effects in international equity markets. Due to the unique features of the China A market, two separate families of Value and Growth Indices were introduced: the MSCI China A Value and Growth Indices and the MSCI China A Absolute Value and Growth Indices.

The methodology of the MSCI China A Value and Growth Indices is consistent with that of the MSCI Global Value and Growth Indices. For the MSCI China A Absolute Value and Growth Indices, modifications to that methodology are made to better reflect the style effects of the China A share market. In particular, this second family of indices excludes the non-value & non-growth securities that style managers would not consider as part of their opportunity set.

In designing the MSCI China A Style Indices, MSCI Barra strived to attain several key objectives: first, to represent the opportunity sets available to style managers; second, to more precisely reflect the value and growth investment process of investors in the China A share market; and third, to offer performance benchmarks and asset allocation tools for style investing, as well as efficient indexation support for active investment strategies.

1.1.2   A Partition of the MSCI China A Index Series

The MSCI China A Style Indices are constructed from the constituents of the underlying country index, which is the MSCI China A Index. Essentially, the MSCI China A Style Indices are subsets of the MSCI China A Index Series. Therefore, common index attributes such as free float estimation, number of shares and industry classification are also identical for constituents of the style indices. Consequently, changes in the underlying MSCI China A Index Series will have an impact on the MSCI China A Style Indices. The changes include additions, deletions, changes in Domestic Inclusion Factors (DIFs), updates in number of shares and changes in industry classification.

1.2   Defining the Value and Growth Investment Styles and Indices

In constructing the MSCI China A 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.

1.2.1   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 four variables:

- 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), based on the last three years' data
- Long-term historical sales per share (SPS) growth trend (LT his SPS G), based on the last three years' data

1.2.2   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
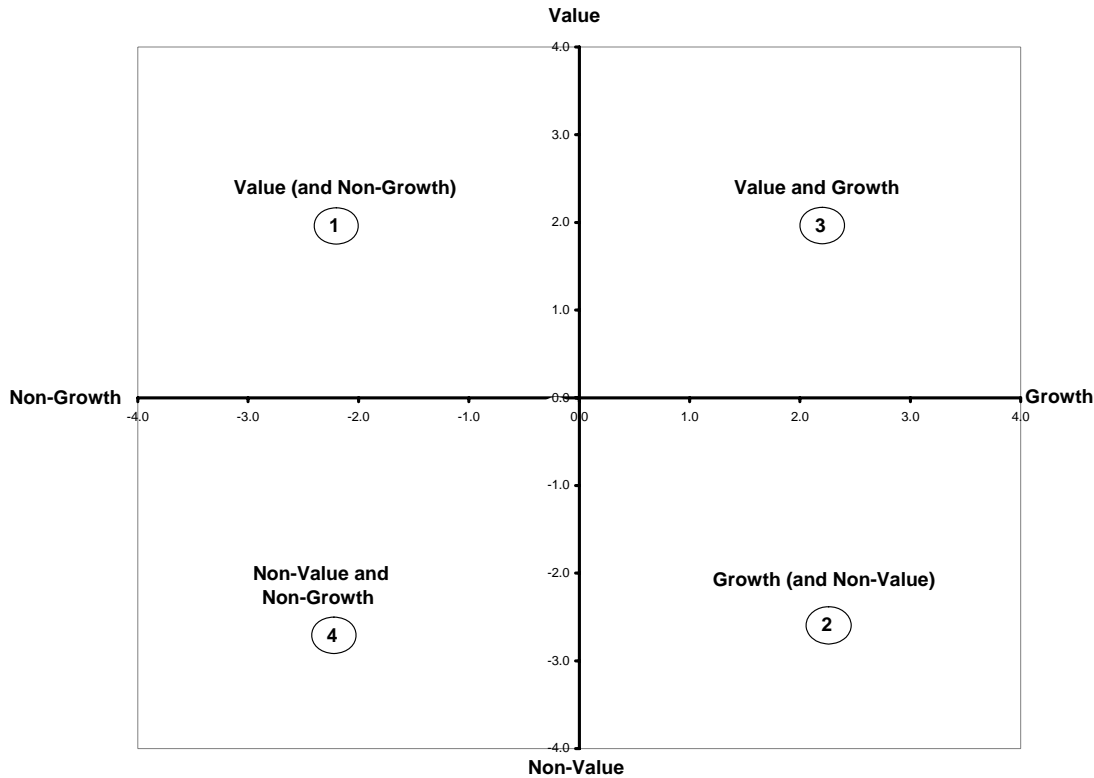
Note: The values on the axes are z-scores. The point where the value and non-value axis intersects growth and non-growth axis, i.e., the origin, is located at a z-score of zero for each axis.

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.

1.2.3   Index Design

The MSCI China A Style Indices contain two families of indices: the MSCI China A Value and Growth Indices and the MSCI China A Absolute Value and Growth Indices. The former family follows the methodology of the MSCI Global Value and Growth Index Series and is intended for asset allocation, while the latter family adopts an approach that excludes securities that are neither value nor growth to better capture the style characteristics of the China A share market and to reflect the investment process of style managers in that market.

The design of the MSCI China A Value and Growth Indices involves dividing constituents of the underlying MSCI China A Index into a value index and a growth index, each targeting 50% of the free float-adjusted market capitalization of the underlying 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.

In the design of the MSCI China A Absolute Value and Growth Indices, constituents of the underlying MSCI China A Index with value characteristics are attributed to the absolute value index, while those displaying growth characteristics are assigned to the absolute growth index. Securities having both growth and value characteristics are attributed to both of these indices, while non-value & non-growth securities are excluded altogether.

1.2.4   Universe and Approach for Style Segmentation

In the MSCI Global Value and Growth Index Series, MSCI Barra has adopted a country approach in conducting the style segmentation of the value and growth indices, with the same style segmentation process being applied independently and consistently across all MSCI Standard country indices. The same principle is applied for the MSCI China A Style Indices, whose constituents are drawn from the universe of the underlying MSCI China A Index.

Please note that the value and growth style classification and allocation is applied at the security level rather than at the company level.

1.2.5   Construction of the MSCI China A Style Index Series

In order to achieve the above-mentioned index design, MSCI Barra 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 Barra's construction of the value and growth indices for the MSCI China A 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.
- Allocating securities to the value and growth indices after applying buffer rules.

In the next section, we review each of these steps in detail.

Section 2: Constructing the MSCI China A Style Index Series

2.1 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 four variables:

- 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), based on the last three years' data
- Long-term historical sales per share (SPS) growth trend (LT his SPS G), based on the last three years' data

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

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) [SM].

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

2.2 Calculating the Z-Scores

After computing the seven variable values for each security, each of the seven variable values are standardized within the universe of the MSCI China A 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.

2.2.1 Winsorizing the Variable

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

To do this, for a given variable, the values for all securities are first ranked by ascending order within the universe of the MSCI China A 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 seven 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.

2.2.2 Calculating the Z-Scores

After winsorizing all the seven variables within the MSCI China A Index, the z-score for each of the seven 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 the MSCI China A 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 MSCI China A Index
- σ is the free float-adjusted market capitalization weighted market standard deviation using winsorized variables in the MSCI China A Index

For further details on the calculation of the market mean and the standard deviation, see Appendix II, 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 country index	2.50			
Standard deviation of dividend yield for the country 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.

2.3 Aggregating the Style Z-Scores

After standardizing each of the seven variable values for each security, MSCI Barra 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 four 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.

2.3.1 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:

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

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	Not Available
Dividend yield z-score	0.72	-1.16	-2.00
Value Z-Score	**0.80**	**0.50**	**-1.80**

2.3.2 Calculating the Growth Z-Score

The growth z-score is computed as the equally weighted average of the z-scores from the four growth 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 MSCI China A 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)[SM]. In this case, only three variables are averaged, rather than replacing the sales growth trend with a zero value.

The growth z-score is calculated as follows:

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

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

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

For a financial company:

$$Growth\ Z\text{–}Score = \frac{1}{3}\left(Z_g + Z_{ST\ fwd\ EPS\ G} + Z_{LT\ his\ EPS\ G}\right)$$

Example:
Calculating the Growth Z-Score:

	Security A	Security B *(Financial company)*	Security C
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	0.50
Growth Z-Score	**0.34**	**0.11**	**-0.025**

Security A has all 4 variables available. Its growth z-score is simply the sum of the 4 variables divided by 4. 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 3 in the denominator. Finally, the long-term historical EPS growth rate variable is missing for Security C, and so its value will be treated as 0 and the denominator will still be 4.

2.3.3 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

2.4   Assigning Initial Style Inclusion Factors

From this point the construction methodology differs for the MSCI Value and Growth Index Series and the MSCI Absolute Value and Growth Series, and so each of these will be described separately below.

2.4.1   Case I : MSCI China A Value and Growth Index Series

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.

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:

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

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

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

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 China A Value and Growth Style Space, Allocating Initial VIF & GIF
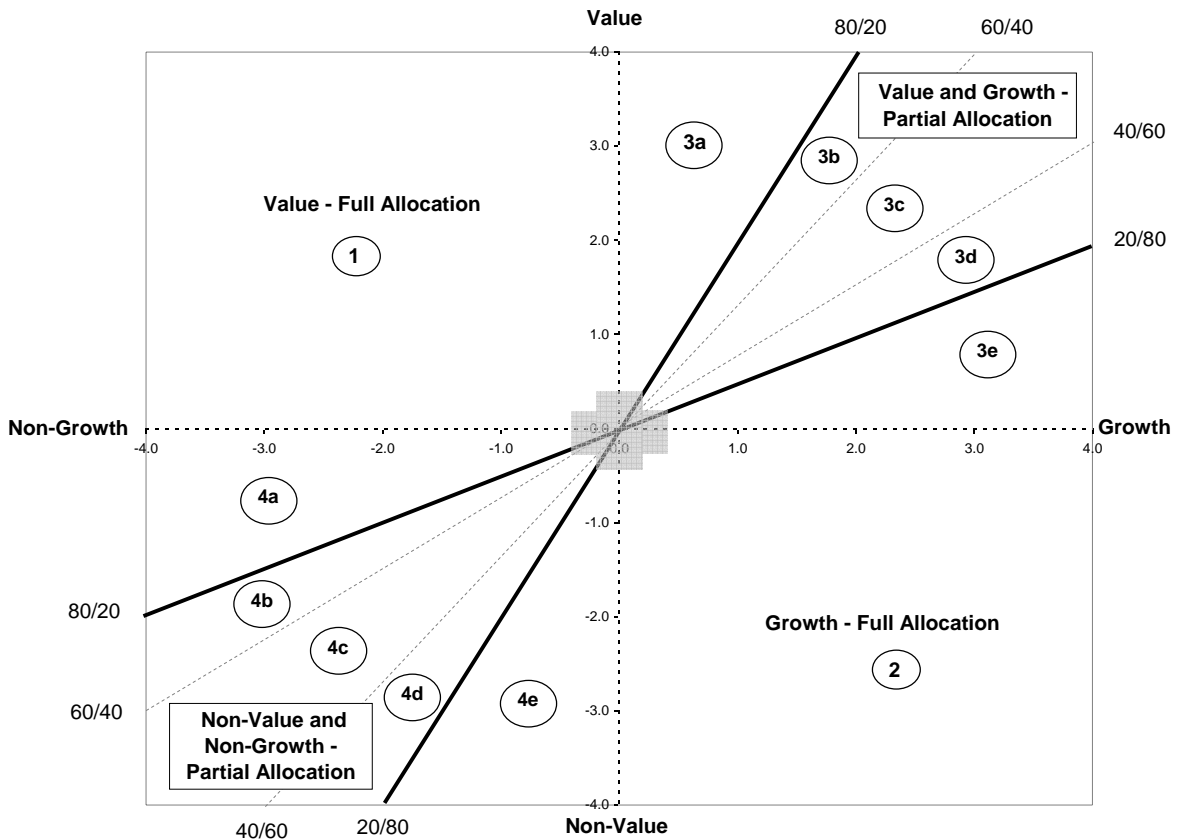
Note: The values on the axes are z-scores. The point where the value and non-value axis intersects growth and non-growth axis, i.e., the origin, is located at a z-score of zero for each axis.

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.

2.4.2   Case II : MSCI Absolute Value and Growth Index Series

The methodology for assigning initial style inclusion factors for MSCI Absolute Value and Growth Indices is much more straightforward. After obtaining the value and growth z-scores for securities in the underlying MSCI China A Index, all securities with positive value z-scores are allocated to the absolute value index and assigned a VIF of one, while those with positive growth z-scores are assigned to the absolute growth index with a GIF of one. This is shown graphically in Exhibit 3 below. It is important to note that the processes determining VIF and GIF values are entirely independent, and so the order in which they are conducted does not matter.

**Exhibit 3 – MSCI China A Absolute Value and Growth Style Space,
Allocating Initial VIF & GIF**
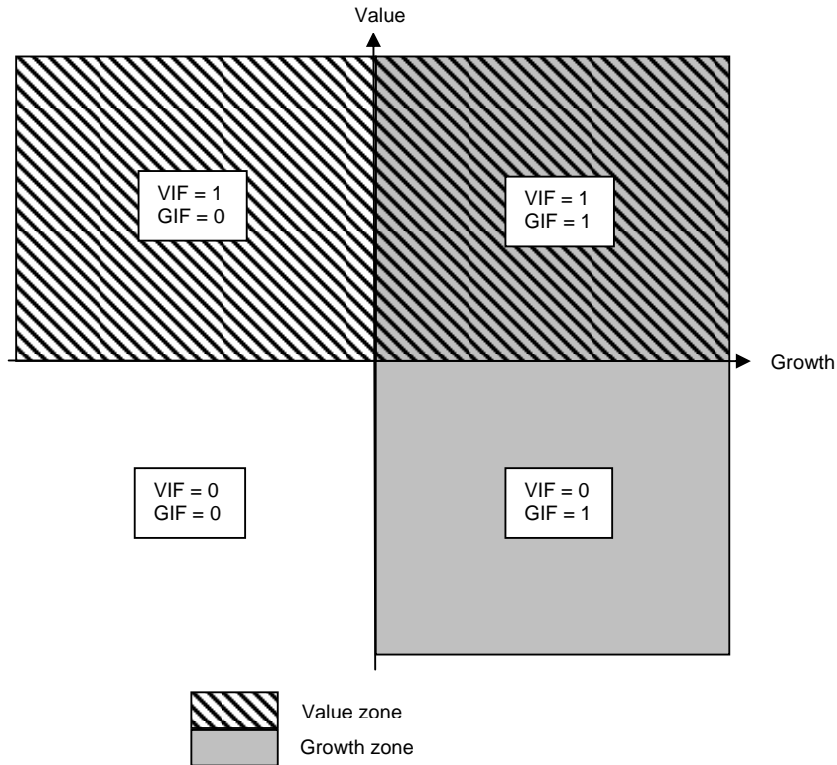
2.5 Allocating Securities to the Value and Growth Indices

Having determined the style inclusion factors, the allocation process to the Value and Growth Indices will be explained below. Again, it is necessary to differentiate between the case of the MSCI China A Value and Growth Index Series and that of the MSCI China A Absolute Value and Growth Index Series, and so they will be covered separately below.

2.5.1 Case I : MSCI China A Value and Growth Index Series

The MSCI China A Value and Growth Indices target a 50% free float-adjusted market capitalization representation for both the MSCI China A Value and Growth Indices. 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.

2.5.1.1 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:

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

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

2.5.1.2 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 will 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.

	Security A	Security B	Security C
Example: **Reassigning Style Inclusion Factors Based on Buffer Rule:**			
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 pro forma value and growth z-scores do not fall 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.

2.5.1.3 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 farthest 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 MSCI China A Index, its free float-adjusted market capitalization is allocated to the value or growth index that comes closest to the 50% target. If the middle security has a free float-adjusted market capitalization weight of more than 5% in the MSCI China A 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		Post Buffer VIF		Final VIF
			Value	Growth			
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 farthest 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		Post Buffer VIF		Final VIF
			Value	Growth			
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
…	…	…	…	…	…		…
W	…	…	46.6%	47.2%	…		…
X	**0.33**	**5.3%**	**48.5%**	**50.6%**	**0.00**	Reallocated	**0.35**
Y	0.32	0.9%	49.4%	50.6%	**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 MSCI China A Index. According to its post buffer VIF, it should have been allocated to the growth index, resulting in a cumulative growth index weight of 47.2%+5.3% = 52.5%, which is above the 50% target. However, in this case where X is the "middle security", 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.

2.5.2 Case II : MSCI China A Absolute Value and Growth Index Series

The MSCI China A Absolute Value and Growth Index Series does not have a 50/50 target split between value and growth. This eliminates the need for sorting, in contrast to what is required in the MSCI China A Value and Growth Index Series. The MSCI China A Absolute Value and Growth Index Series has its own set of buffer rules.

For both the value as well as growth z-scores, the buffers are simply the interval between -0.2 and 0.2. If a constituent of the absolute value index gets a value z-score in this interval, then its VIF would remain unchanged from the previous semi-annual review. Likewise, for a constituent in the absolute growth index, its GIF would remain unchanged if its growth z-score falls within the buffer interval. Recall that the allocation for the MSCI Absolute Value and Growth Indices are independent, and so a security may be in the buffer zone in one case but not the other, and whether it gets included in one index has no bearing on its inclusion in the other.

Section 3: Maintaining the MSCI China A Style Index Series

The MSCI China A Style Indices are maintained with the objective of reflecting the evolution of style segments within each country universe on a timely basis. In maintaining the indices, emphasis is also placed on their continuity and on minimizing unnecessary index turnover.

Maintaining the MSCI China A Style Indices involves two main dimensions. The first is the style maintenance of constituents resulting from reviews of the Value and Growth Indices, which take place on a semi-annual basis. The second aspect involves changes driven by the underlying country index, the MSCI China A Index, which may occur as a result of the quarterly index reviews, the annual full country index reviews or ongoing event-related changes. The changes in this second category include additions to and deletions from the MSCI China A Index, changes in Domestic Inclusion Factors (DIFs), updates in number of shares and changes in industry classification.

The style index maintenance for the MSCI China A Style Indices can be described by the following two broad categories:

- Semi-annual style index reviews.
- Style review outside of the semi-annual style index reviews.

3.1   Semi-Annual Style Index Review

The style review of the value and growth indices is conducted at the end of each May and November, coinciding with the May annual full country index review and the November quarterly index review of the underlying MSCI China A Index.

During the style review, new value and growth z-scores are calculated for the pro forma MSCI China A 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 the MSCI China A Index as outlined in Section 2.

Values of the fundamental data used to determine style characteristics are maintained on a monthly basis. For the May and the November semi-annual style index reviews, fundamental and forward looking data as of the end of March and the end of September are used respectively. The review 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. The prices from that same date are used for the calculation of the three price based ratios used to determined value style characteristics.

3.2   Security Style Review Outside of the Semi-Annual Style Index Reviews

Style reviews outside the semi-annual style index reviews are conducted for new securities in cases of additions to the underlying MSCI China A Index, or for constituents that have experienced significant changes in style characteristics due to corporate events.

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

3.2.1   Additions of Constituents Outside of the Semi-Annual Style Index Review

Additions of constituents to the value and growth index families outside the regular index reviews can result from:

- Inclusions to the underlying MSCI China A Index during the February and August quarterly index reviews, or
- Inclusions to the MSCI China A Index due to M&As, spin-offs, large IPOs and other early inclusions as described in the MSCI China A Index Methodology Guide.

In the case of the MSCI Value and Growth Index family, these inclusions would automatically find themselves into one of the value and growth indices, or both if none of the two characteristics is sufficiently dominant.

In the case of the MSCI Absolute Value and Growth Indices, the inclusions from the above two sources would additionally have to be screened to see if their value or growth z-scores are sufficiently high to justify inclusion into the absolute value and growth indices. Specifically, their respective z-scores would have to be positive to be included in these style indices. Since the value and growth screening processes are independent, a security may possibly be added to one, two or none of the two absolute style indices.

3.2.2   Changes in Characteristics of Constituents Linked to Corporate Events

In order to reflect significant style changes of constituents resulting from ongoing event-related changes while minimizing index turnover, style characteristics of the affected securities are reviewed if the full market capitalization change implied by the event 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, characteristics of the affected securities are not reviewed even if there are significant market capitalization changes in the following cases:

1. When two constituents within the same country 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.
4. Share reunification.

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 Barra will determine the most appropriate implementation method and announce it prior to the changes becoming effective in the MSCI China A Style Indices.

Appendices

Appendix I: Variable Definitions and Computations

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

All forward variables are based on consensus analysts' estimates and are provided by a specialized data vendor. For all other fundamental data, MSCI Barra's own data are used. In certain circumstances, such as for securities recently listed or undergoing significant events where forward-looking data are not yet available, MSCI Barra uses an average of analyst estimates available from other sources.

Variables Used to Define Value Investment Style Characteristics

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

    The BV / P calculation is as follows:

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

    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:

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

    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 January 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	8	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}	**0.67**	**N/A**	**1.04**

For security B, estimates for June 30, 2006 are not available. Since M is smaller than 8, 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)

$$D / P = \text{Current Annualized Dividend per Share} / \text{Price of Security}$$

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.

Yields are gross, before withholding tax.

Variables Used to Define Growth Investment Style Characteristics

1. 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:

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

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}.

<div>

Example:

Calculating the Short-term forward EPS growth rate as of the January 20, 2005:

	Security A	*Security B*	*Security C*
Fiscal Year End	Dec 31, 2004	Nov 30, 2004	Mar 31, 2004
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%**

</div>

2. 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.

3. **Long-term Historical EPS Growth Trend (LT his EPS G) and**
4. **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 squares method) is applied to the last 3 yearly restated EPS and SPS respectively.

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

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

Then, an average absolute EPS or SPS is estimated:

$$\widetilde{E\widetilde{P}\widetilde{S}} = \sum_{i=1}^{n} \frac{|EPS_i|}{n} \qquad\qquad \widetilde{S\widetilde{P}\widetilde{S}} = \sum_{i=1}^{n} \frac{|SPS_i|}{n}$$

The growth trend is finally obtained as follows:

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

In order to compute a meaningful long-term historical growth trend for the EPS and SPS, 3 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 three 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, 2000	0	0.29	8.57
Fiscal Year End 1	Dec 31, 2001	12	0.92	8.87
Fiscal Year End 2	Dec 31, 2002	24	1.41	11.50
a			0.05	0.12
a, annualized			0.60	1.44
$\widetilde{E\widetilde{P}\widetilde{S}}$ & $\widetilde{S\widetilde{P}\widetilde{S}}$			0.87	9.65
Growth Trend			**69.0%**	**14.9%**

Appendix II: 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:

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

The market standard deviation is computed as follows:

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

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

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

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

Please note that only securities with non-missing variables are included in the market mean and standard deviation.