

S&P China A Style Indices *Methodology*

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Introduction

Index Objective

The S&P China A Style Indices represent a comprehensive style index solution by building separate style and pure-style indices, making available a consistent set of stock-level style scores and style indices.

Highlights

The **Style** index series divides the constituents of each parent index equally into growth and value indices. This series covers all stocks in the parent index universe, and uses the conventional market cap-weighting scheme. Stocks that do not fall into Pure Style baskets have their market caps distributed between growth and value indices.

The **Pure Style** index series identifies one-third of the parent index's members as Pure Growth and one-third as Pure Value. There are no overlapping stocks, and these indices do not have the size bias induced by market capitalization weighting. Rather, stocks are weighted in proportion to their relative style attractiveness.

This methodology was created by S&P Dow Jones Indices to achieve the aforementioned objective of measuring the underlying interest of each index governed by this methodology document. Any changes to or deviations from this methodology are made in the sole judgment and discretion of S&P Dow Jones Indices so that the index continues to achieve its objective.

Index Family

S&P China A Style Indices are applied to the S&P China A 100, the S&P China A 200, and the S&P China A SmallCap 300 indices. These and related indices are outlined below:

S&P China A 100. The S&P China A 100 gauges the performance of the large-cap segment of the China A-share market.

S&P China A 200. The S&P China A 200 represents the mid-cap segment of the China A-share market.

S&P China A SmallCap 300. The S&P China A SmallCap 300 gauges the performance of small companies, as measured by cap size, in the China A-share market.

S&P China A 300. Combining the S&P China A 100 and the S&P China A 200, the S&P China A 300 is an efficient way to create a relatively liquid and broad market portfolio of the China A-share market.

Supporting Documents

This methodology is meant to be read in conjunction with supporting documents providing greater detail with respect to the policies, procedures and calculations described herein. References throughout the methodology direct the reader to the relevant supporting document for further information on a specific topic. The list of the main supplemental documents for this methodology and the hyperlinks to those documents is as follows:

Supporting Document	URL
S&P Dow Jones Indices' Equity Indices Policies & Practices Methodology	Equity Indices Policies & Practices
S&P Dow Jones Indices' Index Mathematics Methodology	Index Mathematics Methodology
S&P Dow Jones Indices' Float Adjustment Methodology	Float Adjustment Methodology
S&P Dow Jones Indices' Global Industry Classification Standard (GICS) Methodology	GICS Methodology

This methodology was created by S&P Dow Jones Indices to achieve the aforementioned objective of measuring the underlying interest of each index governed by this methodology document. Any changes to or deviations from this methodology are made in the sole judgment and discretion of S&P Dow Jones Indices so that the index continues to achieve its objective.

Eligibility Criteria

The S&P China A Style Indices are derived from a headline (parent) index. A style index cannot have a constituent that is not also a member of the parent index.

For information on the eligibility criteria of the headline (parent) indices used in creating the S&P China A Style Indices, please refer to the S&P China A-Share Indices Methodology document available at www.spdji.com.

Index Construction

Evaluating Growth and Value at the Stock Level

Style Factors. The Style indices measure growth and value along two separate dimensions, with four factors used to measure growth and five factors used to measure value. The list of factors used is outlined in the table below.

Growth Factors	Value Factors
Three-Year Earnings per Share Growth Rate	Earnings to Price Ratio
Three-Year Book per Share Growth Rate	Operating Cash Flow to Price Ratio
Return on Equity (ROE)	Sales to Price Ratio
Long-Term Debt to Equity	Dividend Yield
	Book to Price Ratio

The list of factors that can be considered a determinant of either growth or value characteristics is based on S&P Dow Jones Indices research to estimate which factors most effectively differentiate growth and value styles within the China A-Share market. This analysis was undertaken based on a factor's ability to provide time series and cross-sectional differentiation. The variables used above ranked among the top three in either cross-sectional or time series analysis.¹

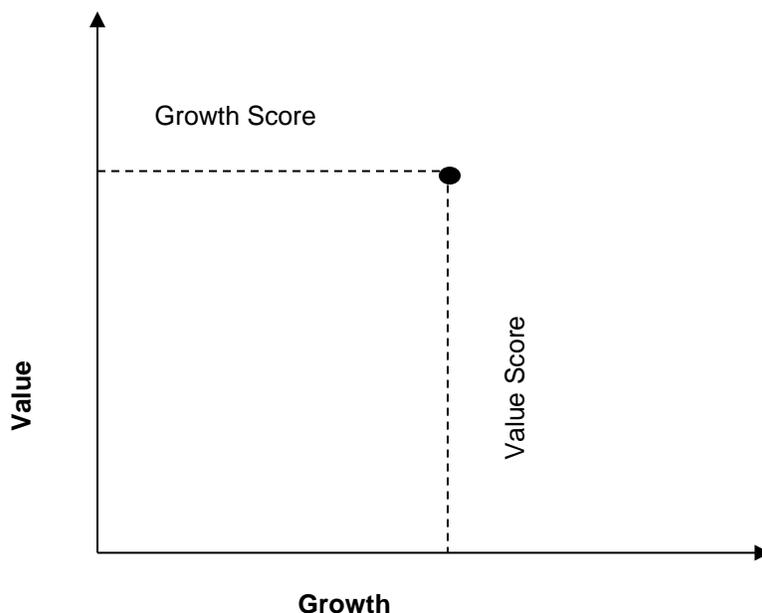
Style Scores. Raw values for each of the above factors are calculated for each company in the A-share universe. These raw values are then standardized by dividing the difference between each stock's raw score and the mean of the entire set by the standard deviation of the entire set. A Growth Score for each company is computed as the average of the standardized values of the four growth factors. Similarly, a Value Score for each company is computed as the average of the standardized values of the five value factors.

The simple averaging process assumes each factor is equally important. Different factors will clearly have different discriminating powers over time, but the equal weighting approach is chosen to meet the design goal of simplicity.

At the end of this step each stock has a Growth Score and a Value Score, as shown below, with growth and value being measured along separate dimensions.

¹ For more details, refer to Dash, Srikant and Murphy, Phillip, "Estimating Style Factors in China's A-Share Market," S&P Dow Jones Indices (2007).

Exhibit 1: Measuring Growth and Value Along Separate Dimensions



For Stock X:

$G_{i,x}$ = Standardized value of Growth Factor I for stock X, I=1 to 4.

$V_{j,x}$ = Standardized value of Value Factor J for stock X, J=1 to 5.

SG_X = Growth Score of X = $1/4 (G_{1,x} + G_{2,x} + G_{3,x} + G_{4,x})$.

SV_X = Value Score of X = $1/5 (V_{1,x} + V_{2,x} + V_{3,x} + V_{4,x} + V_{5,x})$.

Establishing Style Baskets

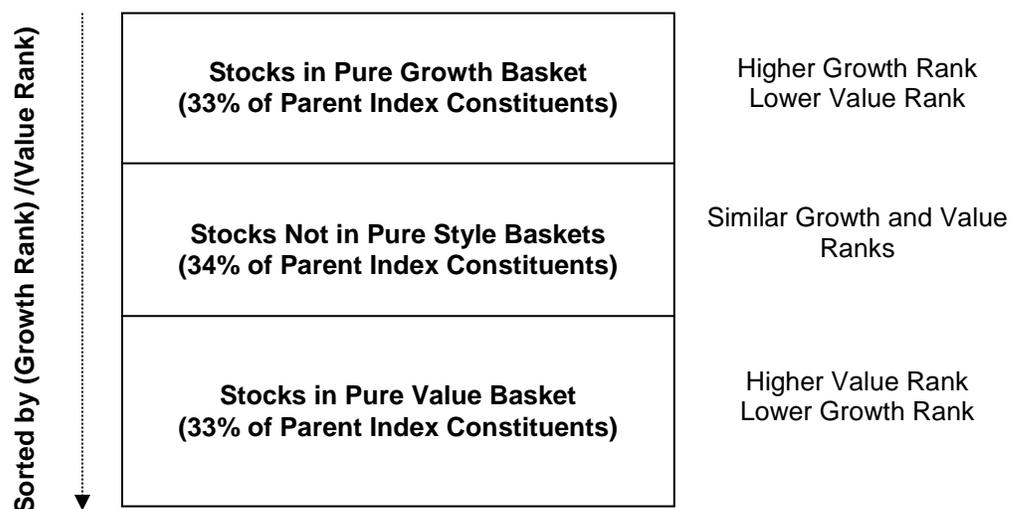
Stocks within each parent index are ranked based on growth and value scores. A stock with a high Value Score would have a higher Value Rank, while a stock with a low Value Score would have a lower Value Rank. For example, the S&P China A 100 constituent with the highest Value Score would have a Value Rank of 1, while the constituent with the lowest would have a Value Rank of 100. The same holds true for Growth Scores and Ranks.

The index constituents are then sorted in ascending order of the ratio Growth Rank/Value Rank. The stocks at the top of the list have a higher relative Growth Rank (or high Growth Score) and a lower relative Value Rank (or low Value Score) and, therefore, exhibit pure growth characteristics. The stocks at the top of the list, comprising 33% of the parent index constituents, are designated as the Pure Growth basket.

The stocks at the bottom of the list have a higher relative Value Rank (and Value Score) and a lower relative Growth Rank (and Growth Score) and, therefore, exhibit pure value characteristics. The stocks at the bottom of the list, comprising 33% of the parent index constituents, are designated the Pure Value basket.

The stocks in the middle of the list have neither pure growth nor pure value characteristics.

Exhibit 2: Pure Style Baskets



Growth and Value Indices

As described earlier, one of the design goals is to construct a Style index series that divides the membership of each parent index equally into growth and value indices, while limiting the number of stocks that overlap across both. This series is to be exhaustive (i.e., covering all stocks in the parent index universe), and is to use the conventional market capitalization-weighting scheme.

The Pure Style baskets described in the prior section are natural starting points for the Style indices' construction. All of the members of the Pure Value basket are assigned to the Value index, and all of the members of the Pure Growth basket are assigned to the Growth index.

The middle constituents have similar relative growth and value ranks. Their market capitalization is distributed among the Style indices based on their distances from the midpoint of the Pure Growth basket and the midpoint of the Pure Value basket, as detailed below. The midpoint of each Pure Style region is calculated as the average of Value Scores and Growth Scores of stocks in the Pure Style basket.

For Stock X:

$W_{V,X}$ = Percent of Market Capitalization of Stock X in the Value Index.

$W_{G,X}$ = Percent of Market Capitalization of Stock X in the Growth Index.

$W_{V,X} = D_{G,X} / (D_{G,X} + D_{V,X})$.

$W_{G,X} = D_{V,X} / (D_{G,X} + D_{V,X})$.

$W_{V,X} + W_{G,X} = 1$.

where $D_{G,X}$ and $D_{V,X}$ represent the distances of Stock X from the midpoint of each Pure Style basket.

The algorithm for computation of $D_{G,X}$ and $D_{V,X}$ is shown in Appendix I.

Further, from the practical point of view of constructing easily replicable baskets, it is essential to avoid very small fractions of a stock's market capitalization being in a particular Style index. Therefore, the weights are rounded as follows:

If $W_{V,X} \geq 0.8$, $W_{V,X} = 1.0$ and $W_{G,X} = 0$.

If $W_{G,X} \geq 0.8$, $W_{G,X} = 1.0$ and $W_{V,X} = 0$.

No mathematical procedure is employed to force equal market capitalization for the growth and value indices, since price movements of constituent stocks would result in inequality immediately following any reconstitution.

It is also worth noting that the assignment of the market capitalization of stocks not in Pure Style baskets to growth and value indices allows graduated moves, and avoids churning of stocks between indices at each reconstitution.

The index is calculated following S&P Dow Jones Indices' market capitalization-weighted, divisor-based index methodology. For example, for the S&P China A 200 Value index:

$$\text{Index Value}_t = \frac{\text{Index Market Value}_t}{\text{Index Divisor}_t}$$

$$\text{Index Market Value}_t = \sum_{X \rightarrow I}^N IWF_{X,t} * \text{Index Shares}_{X,t} * W_{V,X} * \text{Price}_{X,t}$$

where:

$IWF_{X,t}$ = Investable Weight Factor of Stock X on date t.

$\text{Index Shares}_{X,t}$ = Shares used for Stock X in the S&P China A 200 on date t.

$W_{V,X}$ = Percent of market capitalization of Stock X in the S&P China A 200 Value index, calculated as per the previous section. This is calculated once a year on the rebalancing date, or is specified when a new stock is added to the parent index between rebalancing dates.

$\text{Price}_{X,t}$ = Price used for stock X in the S&P China A 200 index computation on date t.

N = Number of stocks in the S&P China A 200 Value index on date t (note that $N < 200$).

Other Style indices are constructed similarly. Corporate actions and index changes are implemented in the same manner as other market capitalization-weighted indices.

Please refer to the section on Index Maintenance for information on the treatment of corporate actions.

Please refer to the S&P China A-Shares Indices Methodology for information on the Investable Weight Factors (IWF).

Pure Growth and Pure Value Indices

This series is based on identifying up to one-third of the parent index membership as Pure Growth and up to one-third as Pure Value. There are no overlapping stocks and index constituents are weighted by their Style Scores. Therefore, the Pure Style baskets are the only regions of interest in constructing the Pure Style indices.

The constituents of the Pure Value index are all stocks for which $W_V = 1$ and $SV > 0.25$. Similarly, the starting universe for the Pure Growth index is stocks for which $W_G = 1$ and $SG > 0.25$. In other words, all constituents of the Pure Value basket except those with the lowest value scores are members of the Pure Value index. Similarly, all constituents of the Pure Growth basket except those with the lowest growth scores are members of the Pure Growth index.

Further, to avoid stocks with outlying high Style Scores having a very large weight in the index, all Style Scores are capped at 2.00 in the Pure Style indices. In other words, for the Pure Style indices, $SV = 2.00$ if $SV > 2.00$, and $SG = 2.00$ if $SG > 2.00$.

The index is calculated following the divisor-based methodology of the S&P Equal Weight indices. For example, for the S&P China A 200 Pure Value index,

$$\text{Index Value}_t = \frac{\text{Index Market Value}_t}{\text{Index Divisor}_t}$$

$$\text{Index Market Value}_t = \sum_{X \rightarrow I}^n IWF_{X,t} * \text{Modified Index Shares}_{X,t} * \text{Price}_{X,t}$$

where:

$IWF_{X,t}$ = Investable Weight Factor of Stock X on date t.

$\text{Price}_{X,t}$ = Price used for Stock X in the S&P China A 200 Pure Value index computation on date t.

N = Number of Stocks in S&P China A 200 Pure Value index on date t (note that $n \leq N$, the count from the previous page).

$\text{Modified Index Shares}_{X,t}$ = Shares used for Stock X on date t.

This term is calculated in the following manner:

$$\text{Modified Index Shares}_{X,t} = \text{Index Shares}_{X,t} * PWF_{X,t}$$

The Pure Weight Factor (PWF) term ensures the index weights each stock with its Style Score. This is accomplished by setting the PWF at the rebalancing date, d , as follows:

$$PWF_{X,d} = k * SV_X / (IWF_{X,d} * \text{Index Shares}_{X,d} * \text{Price}_{X,d})$$

The constant k is used as a multiplier since $SV_X / (IWF_{X,d} * \text{Index Shares}_{X,d} * \text{Price}_{X,d})$ results in a very small value.

The PWF is set only once a year at the index rebalancing. Therefore, only at the rebalancing will the stocks be weighted in exact proportion to their Style Scores. The weights of stocks in a Pure Style index between rebalancings will depend on their relative price performances.

Since Pure Style indices are score-weighted, weights (and, therefore, Modified Index Shares) of individual stocks are not be affected by corporate actions such as stock splits, spin-offs and rights offerings. Between rebalancings, the PWF will be adjusted to ensure there is no change in a stock's Modified Index Shares after such a corporate action. This ensures that, in practical terms, most corporate actions do not necessitate any action on the part of a portfolio manager tracking the index. Because of this feature, this series has lower number of turnover events in a given year than the Style index series.

For more information on the Index calculation methodology, please refer to S&P Dow Jones Indices' Index Mathematics Methodology.

Style Indices Versus Pure Style Indices

Style indices and Pure Style indices have different characteristics addressing distinct needs. These differences are summarized below.

Exhibit 3: Differences Between Style Index Series and Pure Style Index Series

Characteristic	Style Index Series	Pure Style Index Series
Universe coverage	Exhaustive, all parent index stocks are covered	Only Pure Style stocks are covered
Overlapping stocks	Stocks that do not have Pure Growth or Pure Value characteristics have their market capitalization divided between Growth and Value indices in proportion to their distance from the pure regions	None
Weighting scheme	Market capitalization-weighted	Style attractiveness-weighted
Breadth	Broader	Narrower
Usage	Exposure to the broad style market (for example, relative value exposure)	Pure style exposure (for example, deep value exposure) or “style spread” strategies, quantitative analysis

For a more detailed explanation of the differences between the two series, including historical data, see the white paper titled “Unveiling the Next Generation of Style Indexing for the China A-Share Market” available at www.spdji.com.

Index Maintenance

Rebalancing

The S&P China A Style Indices are rebalanced once a year in June. The rebalancing date is the third Friday of June, which coincides with the June quarterly share changes for the S&P China A 300.

Style Scores, market-capitalization weights, growth and value midpoint averages, and the Pure Weight Factors (PWFs), where applicable across the various Style indices, are reset only once a year at the June rebalancing.

Other changes to the S&P China A Style Indices are made on an as-needed basis, following the guidelines of the parent index. Changes in response to corporate actions and market developments can be made at any time. Constituent changes are typically announced for the parent index 10 business days before they are scheduled to be implemented.

For more information on standard index maintenance for all related indices, please refer to the S&P China A-Share Indices Methodology document located on our Web site, www.spdji.com.

Currency, Currency Hedged, and Risk Control Indices

Additional currency, currency hedged, and risk control versions of the indices may be available. For a list of available currency, currency hedged, and risk control indices, please contact Client Services at index_services@spglobal.com.

For more information on currency, currency hedged, and risk control indices, please refer to S&P Dow Jones Indices' Index Mathematics Methodology.

Base Dates

The indices (Price Return and Total Return Series) have a base date of February 27, 2004. The base value for each index on that date is 1000.

Index Changes for Style Indices

Parent Index Action	Adjustment Made to the Style Index	Divisor Adjustment Required?
Constituent Change	<p>If the constituent being dropped is a member of the Style index, it is removed from the index.</p> <p>S&P Dow Jones Indices will announce W_V and W_G for the replacement stock. If W_V is non-zero the stock is added to the Value index; if W_G is non-zero the stock is added to the Growth index. The replacement stock can, therefore, be added to both the Growth and Value indices, or to only one of them.</p> <p>W_V and W_G for the new stock are calculated using GICS industry-level averages for stocks outside the current S&P China A-Share coverage, and retain their old values for inter-index moves.</p>	Yes
Share Changes Between Quarterly Share Adjustments	Share count follows the parent index share count.	Yes
Quarterly Share Changes	Share count follows the parent index share count. In addition, new W_V and W_G for all constituent stocks change at the June rebalancing. These will be pre-announced in a manner similar to quarterly share changes.	Yes
Spin-Off	Please refer to the Treatment of Spin-offs in <i>S&P Dow Jones Indices' Equity Indices Policies & Practices</i> document.	Yes
Rights Offering	The price is adjusted to the Price of the Parent Company minus (the Price of the Rights Subscription/Rights Ratio).	Yes
Stock Split	Shares are multiplied by and price is divided by the split factor.	No
Special Dividends	The price of the stock making the special dividend payment is reduced by the per share special dividend amount after the close of trading on the day before the ex-date.	Yes

Index Changes for Pure Style Indices

Parent Index Action	Adjustment made to Pure Style Index	Divisor Adjustment Required?
Constituent Change	<p>If the constituent being dropped is a member of the Pure Style index, it is removed from the Pure Style index.</p> <p>The replacement stock can be added to either the Pure Growth or the Pure Value index, or to neither. The S&P China A 300 and S&P China A SmallCap 300 indices will include the weight at which the stock will enter a Pure Style index.</p> <p>The weight is simply the ratio of the capped Style Score of the added stock divided by the sum of Style Scores of all index constituents.</p> <p><i>For index computation purposes, PWF_G or PWF_V for the new stock are calculated accordingly using the formula in Appendix 2.</i></p>	Yes
Share Changes Between Quarterly Share Adjustments	The weights of the stocks are unchanged.	No
Quarterly Share Changes	The weights of the stocks are unchanged during March, September & December quarterly share changes. For the annual rebalancing, new constituents and their weights are announced 10 business days before the June quarterly date. At the rebalancing, the weight of each stock is simply proportional to its capped Style Score.	Only on the June quarterly adjustment date, since it coincides with the annual rebalancing of the Pure Style indices.
Spin-Off	Please refer to the Treatment of Spin-offs in <i>S&P Dow Jones Indices' Equity Indices Policies & Practices</i> document.	No
Rights Offering	The weights of the stocks are unchanged. Price follows the parent index price change. To keep the weights of the stocks unchanged following price change, Modified Index Shares are adjusted for the stock whose shares are being changed.	No
Stock Split	Shares are multiplied by and price is divided by the split factor.	No
Special Dividends	Price of the stock making the special dividend payment is reduced by the per share special dividend amount after the close of trading on the day before the ex-date.	Yes

For more information, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices document.

Index Data

Construction of Style and Pure Style indices across the size spectrum allows for a complete suite of benchmarking and style investing indices catering to distinct market needs. This is shown below. All of the indices have history starting in March 2004.

Suite of Indices across the Asset Allocation Spectrum

	Value	Blend	Growth
Large-Cap	<ul style="list-style-type: none"> • S&P China A 100 Value • S&P China A 100 Pure Value 	S&P China A 100	<ul style="list-style-type: none"> • S&P China A100 Growth • S&P China A 100 Pure Growth
Mid-Cap	<ul style="list-style-type: none"> • S&P China A 200 Value • S&P China A 200 Pure Value 	S&P China A 200	<ul style="list-style-type: none"> • S&P China A 200 Growth • S&P China A 200 Pure Growth
Small-Cap	<ul style="list-style-type: none"> • S&P China A SmallCap Value • S&P China A SmallCap Pure Value 	S&P China A SmallCap 300	<ul style="list-style-type: none"> • S&P China A SmallCap 300 Growth • S&P China A SmallCap 300 Pure Growth
Large-Mid	<ul style="list-style-type: none"> • S&P China A 300 Value • S&P China A 300 Pure Value 	S&P China A 300	<ul style="list-style-type: none"> • S&P China A 300 Growth • S&P China A 300 Pure Growth

Style and Pure Style indices derived for the S&P China A 300 are simply combinations of the Style and Pure Style indices of its subset indices.

For example, the S&P China A 300 Pure Value index is comprised of the Pure Value index constituents of the S&P China A 100 and the S&P China A 200. Construction of Pure Style baskets and assignment of style weight factors, as shown in *Exhibit 2*, are only done at the S&P China A 100, the S&P China A 200 and the S&P China A SmallCap 300 index levels. Index returns and stock-level style scores are available from March 2004. Scores are reviewed and the indices are rebalanced every June.

Total Return Indices

Total return indices are calculated in a manner similar to that used in the S&P China A 300 and S&P China A SmallCap 300. The distinction between ordinary cash dividends and special dividends is the same as for the S&P China A 300 and S&P China A SmallCap 300, with no separate announcement being made.

For more information on the tax rates used in the calculation of net return indices, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices document.

Index Governance

Index Committee

The index is maintained by the Asia Indices Index Committee. All committee members are full-time professional members of S&P Dow Jones Indices' staff. The committee meets regularly. At each meeting, the Index Committee may review pending corporate actions that may affect index constituents, statistics comparing the composition of the index to the market, companies that are being considered as candidates for addition to the index, and any significant market events. In addition, the Index Committee may revise index policy covering rules for selecting companies, treatment of dividends, share counts or other matters.

S&P Dow Jones Indices considers information about changes to its indices and related matters to be potentially market moving and material. Therefore, all Index Committee discussions are confidential.

S&P Dow Jones Indices' Index Committees reserve the right to make exceptions when applying the methodology if the need arises. In any scenario where the treatment differs from the general rules stated in this document or supplemental documents, clients will receive sufficient notice, whenever possible.

In addition to the daily governance of indices and maintenance of index methodologies, at least once within any 12-month period, the Index Committee reviews the methodology to ensure the indices continue to achieve the stated objectives, and that the data and methodology remain effective. In certain instances, S&P Dow Jones Indices may publish a consultation inviting comments from external parties.

For information on Quality Assurance and Internal Reviews of Methodology, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices document.

Index Policy

Announcements

Index additions and deletions follow the S&P China A 300 index. No separate announcements are made.

For additions to the China Style and Pure Style Indices, S&P Dow Jones Indices will announce the constituents and their respective weights when the parent index announcement is made.

For more information on S&P Dow Jones Indices' announcements, please refer to the Announcements Policy found in S&P Dow Jones Indices' Equity Indices Policies & Practices document.

Holiday Schedule

The indices are calculated daily, throughout the calendar year. The only days an index is not calculated are on days when all exchanges where the index's constituents are listed are officially closed.

A complete holiday schedule for the year is available at www.spdji.com.

Unexpected Exchange Closures

For information on Unexpected Exchange Closures, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices document.

Recalculation Policy

For information on the recalculation policy, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices document.

Real-Time Calculation

Real-time, intra-day, index calculations are executed for certain indices, whenever any of their primary exchanges are open. Real-time indices are not restated.

For information on Calculations and Pricing Disruptions, Expert Judgment and Data Hierarchy, please refer to S&P Dow Jones Indices' Equity Indices Policies & Practices document.

Contact Information

For any questions regarding an index, please contact: index_services@spglobal.com.

Index Dissemination

Index levels are available through S&P Dow Jones Indices' Web site at www.spdji.com, major quote vendors (see codes below), numerous investment-oriented Web sites, and various print and electronic media.

Tickers

The table below lists headline indices covered by this document. All currency, currency hedged, risk control, and return type versions of the below indices that may exist are also covered by this document. Please contact index_services@spglobal.com for a complete list of indices covered by this document.

Index	Bloomberg	Reuters
S&P China A100 Growth	CSP100G	.SPC100G
S&P China A 100 Pure Growth	CSP100PG	.SPC100PG
S&P China A 100 Pure Value	CSP100PV	.SPC100PV
S&P China A 100 Value	CSP100V	.SPC100V
S&P China A 200 Growth	CSP200G	.SPC200G
S&P China A 200 Pure Growth	CSP200PG	.SPC200PG
S&P China A 200 Pure Value	CSP200PV	.SPC200PV
S&P China A 200 Value	CSP200V	.SPC200V
S&P China A 300 Growth	CSP300G	.SPC300G
S&P China A 300 Pure Growth	CSP300PG	.SPC300PG
S&P China A 300 Pure Value	CSP300PV	.SPC300PV
S&P China A 300 Value	CSP300V	.SPC300V
S&P China A SmallCap 300 Growth	CSPSCG	.SPCSCG
S&P China A SmallCap 300 Pure Growth	CSPSCPG	.SPCSCPG
S&P China A SmallCap 300 Pure Value	CSPSCPV	.SPCSCPV
S&P China A SmallCap 300 Value	CSPSCV	.SPCSCV

FTP

Daily constituent and index level data are available via FTP subscription.

For product information, please contact S&P Dow Jones Indices, www.spdji.com/contact-us.

Web site

For further information, please refer to S&P Dow Jones Indices' Web site at www.spdji.com.

Appendix I

Calculating Distances from Pure Growth Regions

First, the midpoints of the Pure Growth and Pure Value baskets are estimated.

AV_G = Average of Growth scores of Pure Value basket members.

AV_V = Average of Value scores of Pure Value basket members.

AG_G = Average of Growth scores of Pure Growth basket members.

AG_V = Average of Value scores of Pure Growth basket members.

These four variables are calculated once a year at the annual rebalancing.

For each Stock, X, that does not belong to a pure basket, $D_{G,X}$ and $D_{V,X}$ are the distances from the Pure Growth basket and the Pure Value basket. As detailed in the section *Index Construction*, the stock's Growth and Value scores are SG_X and SV_X .

Calculation of $D_{G,X}$

If $(SG_X \geq AG_G)$,

$$D_{G,X} = |SV_X - AG_V|$$

Else if $(SV_X \leq AG_V)$,

$$D_{G,X} = |AG_G - SG_X|$$

Else,

$$D_{G,X} = \sqrt{((SV_X - AG_V)^2 + (AG_G - SG_X)^2)}$$

Calculation of $D_{V,X}$

If $(SV_X \geq AV_V)$,

$$D_{V,X} = |SG_X - AV_G|$$

Else if $(SG_X \leq AV_G)$,

$$D_{V,X} = |AV_V - SV_X|$$

Else,

$$D_{V,X} = \sqrt{((SV_X - AV_V)^2 + (AV_G - SG_X)^2)}$$

Appendix II

Calculating PWFs for Additions Between Rebalancings

The following derive the equations used to calculate the PWFs for additions between rebalancings. Note that index users need not calculate PWFs – S&P Dow Jones Indices will announce the weight at which stocks will be added to an index for all additions that are made between rebalancings. The PWFs are simply used in index computation to assign stocks their appropriate weights.

Case 1: One stock is being added to a Pure Style index

The following are known variables:

$$\begin{aligned} F &= \text{Float-adjusted market capitalization of added stock} \\ &= P * IWF * \text{Index Shares} \end{aligned}$$

$$s = \text{Capped Style Score of Stock X being added}$$

$$S = \text{Sum of capped Style Scores of all constituents of the Pure Style index (including the stock that is being added)}$$

$$I = \text{Index Market Value before addition (but after deletions, if applicable)}$$

$$= \sum_{X=1}^N IWF_{X,t} * \text{Index Shares}_{X,t} * PWF_X * \text{Price}_{X,t}$$

The following is the unknown variable:

$$\text{PWF} = \text{Weighting factor to ensure the stock goes in at a weight proportional to its Style Score}$$

Because of score weighting, the weight of a stock in the index after addition should be equal to the ratio of its capped Style Score to that of the sum of the capped Style Scores of all constituents.

$$(F * \text{PWF}) / (I + F * \text{PWF}) = s/S$$

Solving for PWF:

$$\text{PWF} = (I * s) / [F * (S - s)]$$

Case 2: Two stocks are being added to a Pure Style index

Let the variable definitions be the same as above and be denoted by subscripts 1 and 2 for each of the added stocks.

Since stock weights are proportional to their capped Style Scores, it follows that:

$$(F_1 * PWF_1) / (F_2 * PWF_2) = s_1/s_2$$

As before, the weight of an added stock is in proportion to its score. Therefore:

$$(F_1 * PWF_1)/(1 + F_1 * PWF_1 + F_2 * PWF_2) = s_1/S$$

Substituting $(F_2 * PWF_2)$ from the first equation into the second, and solving for PWF_1 :

$$PWF_1 = (1 * s_1) / [F_1 * \{S - (s_1 + s_2)\}]$$

Similarly,

$$PWF_2 = (1 * s_2) / [F_2 * \{S - (s_1 + s_2)\}]$$

For cases with more than two stocks, the above equation can be extended.

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