

**S&P China Sovereign Bond 1-10
Year Spread Adjusted Index**
Methodology

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Introduction

Index Objective

The S&P China Sovereign Bond 1-10 Year Spread Adjusted Index is designed to track the performance of Chinese sovereign bonds denominated in Chinese yuan (CNY) in the 1-to-10 year maturity range. The index accounts for the spread difference between bid/mid and mid/ask prices in order to reflect the costs faced by funds tracking the index.

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' Fixed Income Policies & Practices Methodology	Fixed Income Policies & Practices
S&P Dow Jones Indices' Fixed Income Index Mathematics Methodology	Index Mathematics Methodology

This index methodology was created by S&P Dow Jones Indices to achieve the aforementioned objective of measuring the underlying interest of the 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

Eligibility Factors

Country. Securities must be issued in China and traded in Chinese bond markets (Shanghai Stock Exchange, Shenzhen Stock Exchange and Chinese interbank market).

Currency. Securities must be denominated in Chinese yuan (CNY).

Maturity. Each bond must have a maturity greater than or equal to one year but less than or equal to ten years from the rebalancing effective date. No bond matures in the index.

Issuer. Securities must be sovereign bonds issued by the Chinese government. Sovereign bonds must be listed on all three bond market platforms (Shanghai Stock Exchange, Shenzhen Stock Exchange and Chinese interbank market).

Ratings. No ratings criteria are applied.

Coupon Type. Securities must be fixed rate non-zero coupon bonds.

Exclusions. The following bond types are specifically excluded from the index:

- STRIPS
- Inflation-linked securities
- Floating-rate notes
- Callable bonds
- Puttable bonds

Size. Each security must have a minimum par amount outstanding of CNY 10 billion, as of the rebalancing reference date.

Settlement. Bonds issued prior to the rebalancing reference date (regardless of the settlement date). The index settlement convention is T+1. For month ends that fall on a weekend, the interest accrued during the month will be reflected within the calendar month, regardless of settlement convention. For rates that are not available at month-end (e.g. a rate with an unknown reset), the accrual will be based on the current rate and adjusted the first business day of the next month.

Pricing. Mid pricing provided by Thomson Reuters. Bonds not priced by the designated pricing source are ineligible for index inclusion.

Index Construction

Index Calculations

Weighting. The index is constructed using a market value weighting scheme.

Calculation. The total return is calculated by aggregating the interest return, which reflects the return due to paid and accrued interest, and price return, which reflects the gains or losses due to changes in the end-of-day price and principal repayments. The index value on the last business day of each month is adjusted by a rebalancing cost factor in order to reflect the costs faced by funds tracking the index.

For further details regarding the rebalancing cost factor, please refer to *Appendix I*.

For other information regarding Index Calculations, please refer to S&P Dow Jones Indices' Fixed Income Mathematics Methodology.

Index Maintenance

Rebalancing

The index is reviewed and rebalanced in accordance with its stated schedule. The Index Committee reserves the right to make adjustments to the index at any time that it believes appropriate.

Additions, deletions and other changes to the index arising from the rebalancing are made provided the security's reference information and pricing are available by designated pricing and data providers on the rebalancing reference date. Changes to the index are published on the announcement date and become effective on the rebalancing date. Information related to the rebalancing is obtained and disseminated after the close of business.

Rebalancing Schedule	
Rebalance time period	Monthly
Rebalancing Date	Last day of the rebalancing period (T)
Announcement Date	T minus 2
Reference Date	T minus 3

All days reflect after the close and count business days

Currency and Currency Hedged Indices

The index is calculated in Chinese yuan, U.S. dollars, British pounds, Canadian dollars, euros, Hong Kong dollars, Japanese yen, Singapore dollars and Swiss francs.

Spot foreign exchange rates, as supplied by Reuters at 04:15 PM Sydney Time, are used in the end-of-day calculation of the foreign currency versions of the index, except as noted below.

The U.S. dollar and Hong Kong dollar versions of the index are calculated using the USD/CNH and USD/HKD Treasury Market Association ("TMA") fixing rates, respectively. These rates are calculated by Thomson Reuters and published daily at 11:15 AM Hong Kong Time.

Additional currency and currency hedged versions of the indices, as well as maturity, sector and rating-based sub-indices, may be available. For a list of available sub-indices and tickers, please refer to S&P Dow Jones Indices' Fixed Income Index Directory available at www.spdji.com.

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

Base Date and History Availability

Index history availability, base date and base value are shown in the table below.

Index	Launch Date	First Value Date	Base Date	Base Value
S&P China Sovereign Bond 1-10 Year Spread Adjusted Index	06/05/2015	12/31/2009	12/31/2009	100

Index Governance

Index Committee

S&P Dow Jones Indices' Asia Fixed Income Index Committee maintains the indices. All committee members are full-time professionals at S&P Dow Jones Indices. Meetings are held quarterly and whenever deemed appropriate.

The Index Committee oversees the management of the indices, including determinations of intra-rebalancing changes, maintenance and inclusion policies, and other matters affecting the maintenance and calculation of the indices.

In fulfilling its responsibilities, the Index Committee has full and complete discretion to (i) amend, apply, or exempt the application of index rules and policies as circumstances may require and (ii) add, remove, or by-pass any bond in determining the composition of an index.

The Index Committee may rely on any information or documentation submitted to it or gathered by it that the Index Committee believes to be accurate. The Index Committee reserves the right to reinterpret publicly available information and to make changes to the indices based on a new interpretation of that information at its sole discretion. All Index Committee discussions are confidential.

The Index Committee is separate from and independent of other analytical groups at S&P Global. In particular, the Index Committee has no access to or influence on decisions by S&P Global Ratings analysts.

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' Fixed Income Policies & Practices document.

Index Policy

Announcements

Announcements of any relevant information pertaining to the index are made after market close. Index announcements are distributed to index subscribers by email.

Holiday Schedule

The index is calculated daily throughout the calendar year, except January 1st (New Year's Day).

Rebalancing

The Index Committee may change the date of a given rebalancing for reasons including market holidays occurring on or around the scheduled rebalancing date. Any such change will be announced with proper advance notice where possible.

End-of-Day Calculation

Index levels are calculated at the end of each business day via S&P Dow Jones Indices' Web site. This may be subject to change.

Index Releases

Releases are issued by S&P Dow Jones Indices at the end of the business day.

Recalculation Policy

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

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

Contact Information

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

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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, maturity, sector and rating-based sub-indices as well as 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 (Total Return Index)	Ticker
S&P China Sovereign Bond 1-10 Year Spread Adjusted Index	SPBCNS2T
S&P China Sovereign Bond 1-10 Year Spread Adjusted Index (USD)	SPBCNS2U
S&P China Sovereign Bond 1-10 Year Spread Adjusted Index (GBP)	SPBCNS2G
S&P China Sovereign Bond 1-10 Year Spread Adjusted Index (CAD)	SPBCNS2A
S&P China Sovereign Bond 1-10 Year Spread Adjusted Index (EUR)	SPBCNS2E
S&P China Sovereign Bond 1-10 Year Spread Adjusted Index (HKD)	SPBCNS2K
S&P China Sovereign Bond 1-10 Year Spread Adjusted Index (JPY)	SPBCNS2J
S&P China Sovereign Bond 1-10 Year Spread Adjusted Index (SGD)	SPBCNS2S
S&P China Sovereign Bond 1-10 Year Spread Adjusted Index (CHF)	SPBCNS2H

FTP

Daily index levels and index 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

The S&P China Sovereign Bond 1-10 Year Spread Adjusted Index uses the conventions for settlement date appropriate to the asset class.

Calculation of Market Values

A market value is calculated for each security in the index as of the close on each day, as follows:

$$MV_t = PAR_t * \frac{(P_t + AI_{t+1})}{100} \quad (1)$$

where:

- MV_t = Market value of the security on day t .
- PAR_t = Par amount of the security on day t .
- P_t = Price of the security on day t .
- AI_{t+1} = Accrued interest¹ on the security up to and including day $t+1$.

If the valuation date is not a trading day, the market value is based on the price as of the immediate prior trading day, plus interest accrued up to the valuation date.

Calculation of Interest Return

The formula for the interest return on an individual security on day t is as follows:

$$IR_t = \frac{\left(PAR_t * \frac{AI_{t+1}}{100} - PAR_t * \frac{AI_t}{100} \right) + Int_{t+1}}{MV_{Beg}} \quad (2)$$

where:

- IR_t = Interest return at time t .
- AI_{t+1} = Accrued interest, up to and including day $t+1$.
- AI_t = Accrued interest, up to and including day t .
- PAR_t = Par amount on day t .
- Int_{t+1} = Interest payment on day $t+1$.
- MV_{Beg} = Market value at the beginning of day t .

¹ AI_{t+1} in (1) is calculated on a calendar date basis and uses the conventions for settlement date appropriate to the asset class. Accordingly, accrued interest is zero on a coupon payment date.

Calculation of Rebalancing Cost Factor

The index is rebalanced after the close on the last business day of each month. To reflect the costs faced by funds tracking the index, the index value on the last business day of each month is adjusted by a Rebalancing Cost Factor as follows:

$$RB_TRIV_t = TRIV_t * (1 - RB_CF_t)^2$$

where:

RB_TRIV_t = Rebalancing Total Return Index Value on day t .

RB_CF_t = Rebalancing Cost Factor, as determined by the following formula:

$$RB_CF_t = \sum_i \frac{Sp_{i,t}}{DP_{i,t}} * Abs(W_i^{After} - W_i^{Before})$$

where:

$DP_{i,t}$ = Dirty price of bond i on day t using the mid-price.

W_i = Weight of bond i in the index.

After = After rebalancing, namely the new portfolio.

Before = Before rebalancing, namely the current portfolio.

t = The rebalancing date (i.e. last business day of the month).

$Sp_{i,t}$ = Price spread of bond i on day t , as determined by the following formulae:

$$Sp_{i,t} = CP_{i,t}^{Ask} - CP_{i,t}^{Mid} \quad \text{where } W_i^{After} > W_i^{Before}$$

$$Sp_{i,t} = CP_{i,t}^{Mid} - CP_{i,t}^{Bid} \quad \text{where } W_i^{After} < W_i^{Before}$$

where:

$CP_{i,t}$ = Clean price of bond i on day t .

² The total return calculation described above accounts for the spread difference between bid/mid and mid/ask prices. The calculation of total return in our standard series relies solely on bid prices. Please refer to the *S&P Pan Asia Bond Index Methodology* for further detail.

Appendix II

Methodology Changes

Methodology changes since January 1, 2015 are as follows:

Change	Effective Date (After Close)	Methodology	
		Previous	Updated
Calculation of Total Returns: Interest Return	10/30/15	Prior to November 2, 2015, interest returns for individual securities on day t were calculated with reference to the change in accrued interest from the previous to current day ($t-1$ to t) and interest payments due on day t .	Interest returns for individual securities on day t are calculated with reference to the change in accrued interest from the current to next day (t to $t+1$) and interest payments due on day $t+1$.
Calculation of Market Values and Relative Weights	10/30/15	Prior to November 2, 2015, the market value of a security on day t was calculated with reference to accrued interest on that security up to and including day t .	The market value of a security on day t is calculated with reference to accrued interest on that security up to and including day $t+1$.
Exchange Rates	09/18/15	The U.S. dollar and Hong Kong dollar versions of the index used spot foreign exchange rates, as supplied by Reuters, for end-of-day index calculation.	The U.S. dollar and Hong Kong dollar versions of the index are calculated using the USD/CNH and USD/HKD Treasury Market Association ("TMA") fixing rates, respectively. ³

³ The U.S. dollar and Hong Kong dollar versions of the index were recalculated from July 1, 2015 to October 1, 2015 to reflect the foreign exchange rate change.

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