

# S&P Dow Jones Indices

A Division of **S&P Global**

# S&P/TAIFEX RMB Indices *Methodology*

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# Introduction

## Index Objective, Highlights, and Index Family

The S&P/TAIFEX RMB Indices are designed to track the performance of the inverse of the nearest quarterly month RTF or RHF futures contract traded on the Taiwan Futures Exchange (TAIFEX). The indices are calculated on a daily basis. The RTF and RHF futures contracts are quoted in Chinese renminbi (RMB) per U.S. dollar (USD), while the S&P/TAIFEX RMB Indices are denominated in USD.

The index family consists of the following indices:

- S&P/TAIFEX RTF RMB Index
- S&P/TAIFEX RHF RMB Index

For each index, both an excess return (ER) and total return (TR) version are calculated.

## 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' Commodities Indices Policies & Practices Methodology	<a href="#">Commodities Indices Policies &amp; Practices</a>
S&P Dow Jones Indices' Index Mathematics Methodology	<a href="#">Index Mathematics Methodology</a>

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 Construction

The S&P/TAIFEX RMB Indices are constructed from the nearest quarterly month futures contract traded on the TAIFEX. The table below lists the contracts and symbols.

Index	Underlying Futures Contract	Symbol
S&P/TAIFEX RTF RMB (USD) Index	USD/CNT FX Futures	RTF
S&P/TAIFEX RHF RMB (USD) Index	USD/CNH FX Futures	RHF

Each index measures the return from a long position in the inverse of the first quarterly month futures contract. Over a five-day rolling period every quarter, starting 10 trading days and ending six trading days prior to the futures last trade day (including the last trade day), the index rolls to the second quarterly month contract, with 20% of the portfolio being rolled each day.

## Calculation of the Excess Return Index

On any business day of the underlying futures,  $t$ , the index ER is calculated as follows:

$$IndexER_t = IndexER_{t-1} * (1 + CDR_t) \quad (1)$$

where:

$IndexER_{t-1}$  = The Index Excess Return on the preceding business day, defined as any date on which the index is calculated.

$CDR_t$  = Contract Daily Return, as determined by the following formula:

$$CDR_t = \frac{TDWO_t}{TDWI_{t-1}} - 1 \quad (2)$$

where:

$t-1$  = The preceding business day.

$TDWO_t$  = Total Dollar Weight Obtained on  $t$ , as determined by the following formula for each of the indices:

$$TDWO_t = \sum_{i=1}^2 CRW_{i,t-1} * \frac{1}{DCRP_{i,t}} \quad (3)$$

$TDWI_{t-1}$  = Total Dollar Weight Invested on  $t-1$ , as determined by the following formula for each of the indices:

$$TDWI_{t-1} = \sum_{i=1}^2 CRW_{i,t-1} * \frac{1}{DCRP_{i,t-1}} \quad (4)$$

where:

$CRW_{i,t}$  = Contract Roll Weight of the  $i^{\text{th}}$  RTF/RHF Futures Contract on date  $t$ .

$DCRP_{i,t}$  = Daily Contract Reference Price of the  $i^{\text{th}}$  RTF/RHF Futures Contract on date  $t$ .

## Contract Roll Period

The Roll Period is five days, which starts ten days prior to the future's last trade day (including the last trade day) and ends after the close of the sixth trading day prior to the futures last trade day (including the last trade day). The last trade day is the third Wednesday of the delivery month.

In calculating the Excess Return of each of the indices, the Contract Roll Weights ( $CRW_{i,t}$ ) of each of the contracts in the index, on a given day,  $t$ , are determined as follows:

Day of the Roll Period (t)	The Contract Roll Weight of the First Nearby Contract Expiration ( $CRW_{1,t}$ )	The Contract Roll Weight of the Roll Contract Expiration ( $CRW_{2,t}$ )
First	0.8	0.2
Second	0.6	0.4
Third	0.4	0.6
Fourth	0.2	0.8
Fifth	0.0	1.0

The following table provides an example roll period showing the mechanics of the roll period based on the last trade dates of the underlying futures contracts:

Date	Roll Out	Roll In	Last Trade	Roll Begins	Roll Ends
12/5/2017	RTFZ7	RTFH8			
12/6/2017	RTFZ7	RTFH8			
12/7/2017	RTFZ7	RTFH8		X	
12/8/2017	RTFZ7	RTFH8			
12/11/2017	RTFZ7	RTFH8			
12/12/2017	RTFZ7	RTFH8			
12/13/2017	RTFH8	RTFM8			X
12/14/2017	RTFH8	RTFM8			
12/15/2017	RTFH8	RTFM8			
12/18/2017	RTFH8	RTFM8			
12/19/2017	RTFH8	RTFM8			
12/20/2017	RTFH8	RTFM8	X		
12/21/2017	RTFH8	RTFM8			

In addition to the transactions described above, the weight of each index component is also adjusted every day to ensure that the change in total dollar exposure for the index is only due to the price change of each contract and not due to using a different weight for a contract trading at a higher price.

## Calculation of the Total Return Index

A total return version of each of the indices is calculated, which includes interest accrual on the notional value of the index based on the three-month U.S. Treasury rate, as follows:

$$IndexTR_t = IndexTR_{t-1} * (1 + CDR_t + TBR_t) \quad (5)$$

where:

$IndexTR_{t-1}$  = The index TR on the preceding business day.

$CDR_t$  = Contract Daily Return as defined in equation (2).

$TBR_t$  = Treasury Bill Return, as determined by the following formula:

$$TBR_t = \left[ \frac{1}{1 - \frac{91}{360} * TBAR_{t-1}} \right]^{\frac{\Delta t_t}{91}} - 1 \quad (6)$$

where:

$\Delta t_t$  = The number of calendar days between the current and previous business days.

$TBAR_{t-1}$  = The most recent weekly high discount rate for 91-day U.S. Treasury bills effective on the preceding U.S. business day. Generally the rates are announced by the U.S. Treasury on each Monday. On Mondays that are U.S. bank holidays, Friday's rates apply.

### Currency of Calculation and Additional Index Return Series

In addition to the indices detailed in this methodology, additional return series versions of the indices may be available, including, but not limited to: currency, currency hedged, decrement, fair value, inverse, leveraged, and risk control versions. For a list of available indices, please refer to [S&P DJI's All Indices by Methodology Report](#).

*For information on various index calculations, please refer to S&P Dow Jones Indices' Index Mathematics Methodology.*

### Base Date and History Availability

Index history availability, base dates and base values are shown in the table below.

Index	Launch Date	First Value Date	Base Date	Base Value
S&P/TAIFEX RTF RMB Index (USD) ER	03/23/2018	07/31/2015	07/31/2015	100
S&P/TAIFEX RTF RMB Index (USD) TR	03/23/2018	07/31/2015	07/31/2015	100
S&P/TAIFEX RHF RMB Index (USD) ER	03/23/2018	07/31/2015	07/31/2015	100
S&P/TAIFEX RHF RMB Index (USD) TR	03/23/2018	07/31/2015	07/31/2015	100

# Index Governance

## **Index Committee**

The S&P/TAIFEX Index Committee maintains the S&P/TAIFEX RMB Indices. The Index Committee is composed of full time employees of S&P Dow Jones Indices and the TAIFEX. The Committee meets at least annually. At each meeting, the Committee reviews any significant market events. In addition, the Committee may revise index policy for timing of contract rolls 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' Commodities Indices Policies & Practices Methodology.*

# Index Policy

## **Announcements**

Announcements of the daily index values are made after the market close each day.

## **Holiday Schedule**

The indices are calculated daily, throughout the calendar year. The indices follow the TAIFEX holiday schedule.

*A complete holiday schedule for the year is available at [www.spdji.com](http://www.spdji.com).*

*For information on Calculations and Pricing Disruptions, Market Disruption Events & Holidays During Roll Period, Expert Judgment, Data Hierarchy, Unexpected Exchange Closures, and Error Corrections, please refer to S&P Dow Jones Indices' Commodities Indices Policies & Practices document.*

## **Contact Information**

For questions regarding an index, please contact: [index\\_services@spglobal.com](mailto:index_services@spglobal.com).



# Index Dissemination

Index levels are available through S&P Dow Jones Indices' Web site at [www.spdji.com](http://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 versions of the below indices that may exist are also covered by this document. Please refer to [S&P DJI's All Indices by Methodology Report](#) for a complete list of indices covered by this document.

Index	Bloomberg	Reuters
S&P/TAIFEX RTF RMB Index (USD) ER	SPTRTFUP	.SPTRTFUP
S&P/TAIFEX RTF RMB Index (USD) TR	SPTRTFUT	.SPTRTFUT
S&P/TAIFEX RHF RMB Index (USD) ER	SPTRHFUP	.SPTRHFUP
S&P/TAIFEX RHF RMB Index (USD) TR	SPTRHFUT	.SPTRHFUT

## Index Data

Daily index level data is available via subscription.

For product information, please contact S&P Dow Jones Indices, [www.spdji.com/contact-us](http://www.spdji.com/contact-us).

## Web site

For further information, please refer to S&P Dow Jones Indices' Web site at [www.spdji.com](http://www.spdji.com).

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