

Index Methodology Guide for the FactSet China Games and Entertainment Index™

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Index Introduction and Objective

1.1 Index Overview

The FactSet China Games and Entertainment Index is an equity benchmark designed to track the performance of the domestic entertainment industry in China. The index captures Chinese companies that are focusing on providing entertainment services and related products. This includes media content providers, media production & broadcasting, online games, sports and performing arts entertainment, games and entertainment software.

The FactSet China Games and Entertainment Index is a float-adjusted modified market capitalization weighted index reconstituted and rebalanced semi-annually.

The FactSet China Games and Entertainment Index is calculated and maintained by Solactive AG – the Calculation Agent – based on a methodology developed by FactSet. It is calculated on a price return, total return and net total return basis in offshore China Renminbi (RMB) in CNH. The price return, total return, and net total return values of the Index are calculated on real-time and an end-of-day basis, from Monday to Friday 1:00 a.m. to 10:50p.m. CET (Central European Time).

Whenever possible, constituent changes to the index are announced five business days before becoming effective.

1.2 Inception Date and Base Value

The Index Inception Date was March 24, 2017 with a base value of 100.00. The inception date refers to when the first back-tested index value was calculated. The back test is based on a similar methodology used to calculate the index when it was officially launched on June 29th, 2021.

1.3 Index Valuation Days

Index Valuation Days are business days, Monday to Friday.

1.4 Commencement Date

The index commencement date was June 29th, 2021. Commencement date refers to when the index was officially launched with continuous and end-of-day calculations.

1.5 Reconstitution and Rebalance Schedule

The index is reconstituted and rebalanced semi-annually after the close of the 4th Friday of March and September each year (“Reconstitution Day” and “Rebalance Day”).

If any of the existing or new index components is not trading on Reconstitution Day/Rebalance Day due to an exchange holiday, the reconstitution/rebalance is moved to the next business day.

The data used to reconstitute and rebalance the index is as of the close of 2nd Friday of March and September (“Selection Day”). Subsequent adjustment to the index composition may be made to account for corporate actions that occur between the Selection Day and the Reconstitution Day or Rebalance Day.

Index Construction

2.1 Constituent Selection and Weighting Schema

1. The securities are issued by companies which are either headquartered or incorporated in China or Hong Kong and are listed on one of the following stock exchanges: Hong Kong Stock Exchange, Shanghai Stock Exchange, Shenzhen Stock Exchange,¹ New York Stock Exchange (NYSE), and NASDAQ
2. The securities are common stocks or ADRs.
3. The securities have a minimum three-month Average Daily Trading Value (ADTV) of HKD \$20 million. Existing constituent may remain in the index if its three-month ADTV is greater than HKD \$15 million.
4. If a company has multiple share classes, only include the most liquid issue based on the highest three-month ADTV on Selection Day.
5. Select securities classified to one of the following 23 FactSet Revere Business Industry Classification Systems Focus (“RBICS Focus”) at its Level 5 Industries.
 - Amusement and Recreation Centers
 - Console Games Software
 - Consumer Content Providers
 - Cruise Lines
 - Handheld/Smart Phone Games Software
 - Home and Office Multimedia Software
 - Hotels, Motels and Resorts
 - Media Industry Electronics Manufacturing*
 - Multi-Type Accommodation Providers
 - Multi-Type Home and Office Software
 - Online Game Websites and Software
 - Other Arts, Entertainment and Recreation Providers
 - Other Entertainment and Programming Providers
 - Other Games Software
 - Publishing
 - Radio and Television Broadcasting
 - Specialized Design and Engineering Software**

¹ For securities that are listed in Shanghai Stock Exchange and Shenzhen Stock Exchange, only include the listings that are eligible for trading on Shanghai and Shenzhen Stock Connect Program. SZSE ChiNext and SSE STAR Board securities are eligible.

- Spectator Sports and Performing Arts
- Television Cable and Broadcast Networks
- Tour Operators
- Toy, Game, Hobby and Musical Instrument Products
- Travel Agencies
- Video Entertainment and Programming Providers

* Exclude companies classified to RBICS L6 - Electronic Display and Billboard Manufacturing

** Must also be classified to "Technology > Software > Design/Engineering > Software Development > Development Environments > General" in Revere Hierarchy.

6. For securities that remain after steps 1 to 5, rank securities' total market capitalization, in descending order. Select top 30 ranked securities.

If the number of securities is less than 30 after the aforementioned steps 1 to 5, the list of RBICS Level 5 industries in step 5 shall be expanded based on consultation with FactSet Index Committee and this Index Methodology will be updated to reflect the expanded list of Subindustries.

7. Apply the free float adjusted modified market capitalization weighting methodology to securities that remain after steps 1 to 6 by dividing their individual float-adjusted modified market capitalization to the sum float-adjusted modified market capitalization of all securities.

Individual security weights are capped at 9.0%, and excess weights are redistributed proportionally among remaining uncapped securities. If this redistribution leads to additional security weights exceeding 9.0%, the aforementioned redistribution process is repeated iteratively until no security weight exceeds 9.0%.

Aggregated weight of securities under RBICS L5 "Hotels, Motels and Resorts", "Multi-Type Accommodation Providers", and "Travel Agencies" is capped at 10% and excess weights are redistributed proportionally among remaining uncapped securities. If this redistribution leads to additional individual security weights exceeding 9.0%, the aforementioned redistribution process is repeated iteratively until no security weight exceeds 9.0%.

In addition to the above selection schema, FactSet may at its discretion and in consultation with index licensee, modify one or more selection criterion to ensure relevant and timely capture of the theme. Any modifications shall be announced 60 days prior to annual Reconstitution Day.

2.2 Index Return Formulas

The price, total and net total returns levels of the index are calculated using the following formulas.

$$I_{(t)} = \frac{\sum_{i=1}^n S_{i(t)} \times P_{i(t)} \times FX_{i(t)}}{D_{(t)}}$$

where:

$I_{(t)}$ = Index value on Index Valuation Day (t)
 $D_{(t)}$ = Divisor on Index Valuation Day (t)
 n = Number of stocks in the index
 $P_{i(t)}$ = Closing price of stock (i) on Index Valuation Day (t)
 $S_{i(t)}$ = Number of allocated shares of stock (i) on Index Valuation Day (t)
 $FX_{i(t)}$ = WM Reuters FX rate published at 4:00pm London time on Index Valuation Day (t) required to convert closing price of stock (i) in index currency, RMB.

and on Inception Date, where (t) = 0, the initial divisor is calculated as follows:

$$D_{(0)} = \frac{\sum_{i=1}^n S_{i(0)} \times P_{i(0)} \times FX_{i(0)}}{I_{(0)}}$$

where:

$I_{(0)}$ = Price Returns Index value on Index Inception Date
 $D_{(0)}$ = Divisor on Index Inception Date
 n = Number of stocks in the index on Index Inception Date
 $P_{i(0)}$ = Price of stock (i) on Index Inception Date
 $S_{i(0)}$ = Number of allocated shares of stock (i) on Index Inception Date
 $FX_{i(t)}$ = WM Reuters FX rate published at 4:00pm London time on Index Inception Date required to convert closing price of stock (i) in index currency, RMB.

Allocated shares (“S”) are the number of shares required for each constituent such that all constituents are float-adjusted modified market capitalization weighted. Allocated shares (“S”) would be adjusted accordingly to account for Corporate Actions.

Net total return is calculated to account for the effect of tax withholding on dividends by adjusting dividend taken out due to tax payment.

2.3 Index Divisor Adjustments

From time to time, the index divisor is adjusted to account for corporate actions that could distort index value and continuity using the following formula:

$$D_{(t+1)} = D_{(t)} \times \frac{\sum_{i=1}^n AS_{i(t+1)} \times AP_{i(t+1)} \times FX_{i(t)}}{\sum_{i=1}^n S_{i(t)} \times P_{i(t)} \times FX_{i(t)}}$$

where:

$D_{(t+1)}$ = Divisor for Index Valuation Day (t+1) after CA and rebal adjustment
 $D_{(t)}$ = Divisor for Index Valuation Day (t)
 $AP_{i(t+1)}$ = Adjusted price of stock (i) calculated for open on Index Valuation Day (t+1) after CA adjustment
 $P_{i(t)}$ = Closing price of stock (i) on Index Valuation Day (t)
 $S_{i(t)}$ = Number of allocated shares of stock (i) on Index Valuation Day (t)
 $AS_{i(t+1)}$ = Adjusted number of allocated shares of stock (i) for open on Index Valuation Day (t+1) after CA adjustment.

Divisor adjustments are generally implemented on the date the corporate action becomes effective, such that for example, the ex-dividend date rather than the payment date is used to time the divisor adjustment.

Find below a detailed calculation for AP, AS, and S in case of corporate actions and rebalancing.

$AP_{i(t)}$ = Adjusted price of stock (i) is determined for the open on Index Valuation Day (t) shall mean:

- If index constituent opens ex-date in respect of the corporate action, then $AP_{i(t)}$ is determined as per Corporate Action Adjustment Section.
- Otherwise

$$AP_{i(t)} = P_{i(t-1)}$$

$S_{i(t)}$ = Number of allocated shares of stock (i) on Index Valuation date (t) is determined as

$$S_{i(t)} = AS_{i(t)}$$

$AS_{i(t)}$ = Adjusted number of allocated shares of stock (i) for open on Index Valuation Day (t) after CA adjustment is determined as:

- If such day opens immediately following the Rebalancing Day (t-1) and if:
 - index constituent opens ex-date in respect to corporate action, then $AS_{i(t)}$ is determined as per Corporate Action Adjustment Section with $S_{i(t-1)}$ replace with:

$$S_{i(t-1)} = \frac{I_{(t-1)} \times Weight_{i(t-1)}}{P_{i(t-1)} \times FX_{i(t-1)}}$$

- index constituent does not opens ex-date in respect to corporate action, then $AS_{i(t)}$ is determined as:

$$AS_{i(t)} = \frac{I_{(t-1)} \times Weight_{i(t-1)}}{P_{i(t-1)} \times FX_{i(t-1)}}$$

- On any other day:

- index constituent opens ex-date in respect to corporate action, then $AS_{i(t)}$ is determined as per Corporate Action Adjustment Section
- Otherwise:

$$AS_{i(t)} = S_{i(t-1)}$$

where $Weight_{i(t-1)}$ is determined as per Section 2.1.

2.4 Corporate Action Adjustments

Special Cash Dividend:

$$AP_{i,t} = P_{i,t-1} - D_{i,t} \times FX_{d,t-1}$$

Where

t = Index Valuation Date (t) is ex-date for corporate action.

D_{i,t} = Dividend amount corresponding to stock (i) with ex-date (t).

FX_{d,t-1} = WM Reuters FX rate published at 4:00pm London time fixing on Index Valuation Day (t) required to convert dividend amount in underlying stock currency, RMB.

Spin-off Adjustment

On effective date, the spun-off security will be added to Index with a Price of 0 and the price of the parent company will remain unchanged.

$$AP_{i,t,s} = P_{i,t-1} - P_{f,t-1} \times \text{Share Ratio}_{f,t} \times FX_{j,t-1}$$

Where

P_{f,t-1} = Closing price of Spin-off stock on Index Valuation Date (t-1).

FX_{j,t-1} = WM Reuters FX rate published at 4:00pm London time on Index Valuation Day (t) required to convert price of spun-off company to constituent stock currency, RMB.

Rights Issue Adjustment

$$AP_{j,t} = \frac{P_{j,t-1} + C_{j,t} \times \text{Share Ratio}_{j,t}}{1 + \text{Share Ratio}_{j,t}}$$

$$AS_{j,t} = S_{j,t-1} \times (1 + \text{Share Ratio}_{j,t})$$

Where

C_{j,t} = Official tender price.

Stock Splits Adjustment

$$AP_{j,t} = \frac{P_{j,t-1}}{\text{Share Ratio}_{j,t}}$$

$$AS_{j,t} = S_{j,t-1} \times \text{Share Ratio}_{j,t}$$

Stock distribution

$$AP_{j,t} = P_{j,t-1} \times \frac{1}{1 + \text{Share Ratio}_{j,t}}$$

$$AS_{j,t} = S_{j,t-1} \times (1 + \text{Share Ratio}_{j,t})$$

Index Maintenance

Constituent changes may occur between review periods due to corporate events that disqualify their eligibility for index inclusion. Adjustments to corporate events are described below:

3.1 Corporate Actions – Delisting

A constituent is removed immediately after being delisted from its primary markets.

3.2 Corporate Actions – Merger or Acquisition

If a merger or acquisition results in one constituent acquiring another, the acquiring company remains a constituent, and the acquired company is removed. If a non-constituent acquires a constituent, the acquired constituent is removed. If a constituent acquires a non-constituent, the acquiring constituent remains a constituent.

3.3 Corporate Actions – Spin-off

If a constituent spins or splits off a portion of its business, both the spun-off company and the parent company (the entity representing the existing constituent) will be kept in the index, and be considered for removal from the index at the next Reconstitution or Rebalance Day should they fail to meet the eligibility criteria in Section 2.1.

3.4 Corporate Actions – Bankruptcy

If a constituent is delisted after bankruptcy, it will be removed immediately with a price of 0 from the index.

Index Calculation and Data Correction

4.1 Index Calculation

Price, Total Return, and Net Total Return values for the FactSet China Games and Entertainment Index are calculated by Solactive AG. The price, total and net total return values are calculated on a continuous and end-of-day basis by using the trading price for each component in the index from relevant exchanges and markets. Index values are rounded to 2 decimal places and divisors are rounded to 6 decimal places.

If trading in a stock is suspended prior to the market opening, the stock's adjusted closing price from the previous day will be used in the index calculation until trading commences. If trading in a stock is suspended while the relevant market is open, the official closing price published by relevant exchange for that stock will be used for all subsequent index calculations until trading resumes.

In case of exceptional market conditions disrupting normal closing auction, or causing official closing prices not being available, Solactive and FactSet reserve the right to utilize other prices in the calculation of the official closing level.

4.2 Data Correction

Incorrect index constituent data, corporate action data, or index divisors will be corrected upon detection. If such errors are discovered within five days of occurrence, they will be corrected retroactively on the day of discovery. If discovered after five days, corrective actions will be decided based on the errors' significance and feasibility of a correction.

4.3 Decision Making in Undocumented Events

A FactSet Index Committee consisting of select employees of FactSet Research Systems Inc. is responsible for amending rules as documented in the Index Methodology Guide due to undocumented or extraordinary events.

Additional Information

5.1 Contact Information

FactSet Research Systems Inc.
One Sansome St. Floor 19
San Francisco, CA 94104
Tel.: 1.415.645.0967 Fax: 1.415.645.0901
Contact: GoIndexing@factset.com

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Version 1.0	June 21 st , 2021	
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