



恒生指數
HANG SENG INDEXES

Index Methodology

For Managing the

Hang Seng Short and Leveraged Index Series



Amendment History

	Date	Description
1.0	January 2016	First Issue
1.1	October 2018	Expanded the index series to include a total return version of HSCEI Leveraged Index



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1 Overview

- 1.1 The Hang Seng Short and Leveraged Index Series comprises ten indexes that are the short and leveraged versions of the Hang Seng Index (“HSI”), the Hang Seng China Enterprises Index (“HSCEI”) and the Hang Seng China H-Financials Index (“H-Fin”), with different levels of leverage ratio. The Indexes are designed to replicate the payoff of a short or leveraged portfolio, and can be used as the basis of exchange-traded funds and derivatives.
- 1.2 The Hang Seng Short and Leveraged Index Series is calculated and disseminated real-time every 2 seconds during trading hours on each trading day of the Hong Kong stock market, based on the calendar of the Stock Exchange of Hong Kong (“HKEx”).

Leverage Ratio	Short Index	Leveraged Index
1x	HSI Short Index (“HSISI”) HSCEI Short Index (“HSCEISI”) Hang Seng H-Fin Short Index (“HFINSI”)	-
2x	HSI 2x Short Index (“HSI2SI”) HSCEI 2x Short Index (“HSCEI2SI”) Hang Seng H-Fin 2x Short Index (“HFIN2SI”)	HSI Leveraged Index (“HSILI”) HSCEI Leveraged Index (“HSCEILI”) Hang Seng H-Fin Leveraged Index (“HFINLI”) HSCEI TR 2x Leveraged Index (“HSCEI2LT”)



2 Management Responsibility

Hang Seng Indexes Company Ltd (“HSIL”)

- 2.1 HSIL is responsible for conducting regular reviews in accordance with the Index Methodology.
- 2.2 HSIL is responsible for monitoring company announcements and making ad hoc proposals – which must be approved by the Chairman of the HSI Advisory Committee – if constituent changes between the regular reviews are needed.
- 2.3 HSIL is responsible for seeking the HSI Advisory Committee’s endorsement of any special action in cases where, due to exceptional circumstances, an index review is not conducted according to the Index Methodology.
- 2.4 HSIL is responsible for seeking the HSI Advisory Committee’s endorsement of changes to the Index Methodology.

HSI Advisory Committee

- 2.5 The Committee is responsible for ensuring index reviews are undertaken in accordance with the Index Methodology.
- 2.6 The Committee is responsible for reviewing any actions proposed by HSIL in the event that, due to exceptional circumstances, an index review is not conducted according to the Index Methodology.
- 2.7 The Committee is responsible for reviewing and endorsing all changes to the Index Methodology as proposed by HSIL.
- 2.8 The Committee is responsible for giving advice on any issues related to the Index Methodology.



3 Index Calculation

Short Indexes

- 3.1 The HSI Short Indexes are linked inversely to the movement of the HSI. The HSI Short Index and the HSI 2x Short Index provide the reverse return of the HSI with a leverage factor of one and two respectively. In addition to the reverse performance of the HSI, the HSI Short Indexes also yield the overnight interest rate and reflect the dividends payable in shorting stocks as well as the stamp duty entailed in portfolio rebalancing.
- 3.2 The same principles and objectives apply to the HSCEI Short Indexes and the Hang Seng H-Fin Short Indexes, except the underlying indexes are the HSCEI and the H-Fin respectively.
- 3.3 The formula for the Short Indexes is set out below:

Current Index

=Yesterday's Closing Index × (1+Short Index Return)

Where

Short Index Return = Reverse Return + Interest Income – Stamp Duty Expenses

$$\text{Reverse Return} = -K \times \left(\frac{TRI_t}{TRI_{t-1}} - 1 \right)$$

$$\text{Interest Income} = (K + 1) \times \left(\frac{HIBOR}{365} \right) \times D_{t,t-1}$$

$$\text{Stamp Duty Expenses} = K \times (K + 1) \times \left| \left(\frac{TRI_t}{TRI_{t-1}} - 1 \right) \right| \times \text{Stamp Duty}$$

K : A multiple reflecting the short ratio, which is 1 or 2

$D_{t,t-1}$: Number of calendar days between Day t and Day t-1

HIBOR : Overnight HIBOR (% p.a.) fixing, which is provided by Hong Kong Association of Banks around 11:00 am on previous day

TRI_t : Current Total Return Index of Underlying Index (HSI or HSCEI or H-Fin)

TRI_{t-1} : Yesterday's Total Return Index of Underlying Index (HSI or HSCEI or H-Fin)

Stamp Duty : Rate of stamp duty as a percentage of the amount of stock traded



3 Index Calculation

Leveraged Indexes

- 3.4 The HSI Leveraged Index is an index that is linked to the movements of the HSI with a leverage factor of two. In addition to the amplified return of the HSI, the borrowing cost for leveraging investment in stocks and the stamp duty entailed in portfolio rebalancing is also reflected in the index.
- 3.5 The same principles and objectives apply to the HSCEI leveraged Index and the Hang Seng H-Fin Leveraged Index, except the underlying indexes are the HSCEI and the H-Fin respectively.
- 3.6 The formula for the Leveraged Indexes is set out below:

Current Index

=Yesterday's Closing Index × (1+Leveraged Index Return)

Where

Leveraged Index Return = Amplified Index Return – Interest Expenses – Stamp Duty Expenses

$$\text{Amplified Index Return} = K \times \left(\frac{\text{Underlying } I_t^\wedge}{\text{Underlying } I_{t-1}^\wedge} - 1 \right)$$

$$\text{Interest Expenses} = (K - 1) \times \left(\frac{\text{HIBOR}}{365} \right) \times D_{t,t-1}$$

$$\text{Stamp Duty Expenses} = K \times (K - 1) \times \left| \left(\frac{\text{Underlying } I_t^\wedge}{\text{Underlying } I_{t-1}^\wedge} - 1 \right) \right| \times \text{Stamp Duty}$$

- K : A multiple reflecting the leverage ratio, which is 2
- $D_{t,t-1}$: Number of calendar days between Day t and Day t-1
- HIBOR : Overnight HIBOR (% p.a.) fixing, which is provided by Hong Kong Association of Banks around 11:00 am on previous day
- Underlying I_t : Current Underlying Index (HSI or HSCEI or H-Fin)
- Underlying I_{t-1} : Yesterday's Underlying Index (HSI or HSCEI or H-Fin)
- Stamp Duty : Rate of stamp duty as a percentage of the amount of stock traded

[^] In the calculation of HSCEI TR 2x Leveraged Index, the Total Return Index of HSCEI is used instead of HSCEI.



3 Index Calculation

Split / Reverse Split Mechanism

- 3.7 If the Short / Leveraged Index closes above 1,000,000, the index close value will be divided by 100. If the Short / Leveraged Index closes below 100, the index close value will be multiplied by 100.
- 3.8 The Hang Seng Short and Leveraged Index Series is reviewed on the last trading day of each month.

Stop-loss Mechanism

- 3.9 If the Short / Leveraged Index drops by 50 per cent at the time of calculation (t) compared to the closing price on the last trading day (t-1), the stop-loss mechanism will be triggered and the index calculation will be suspended. Calculation will be resumed on the following trading day.



4 Dissemination

- 4.1 The Hang Seng Short and Leveraged Index Series is calculated and disseminated real-time every 2 seconds during trading hours on each trading day of the Hong Kong stock market, based on the calendar of the HKEx.
- 4.2 Please refer to the index dissemination timetable provided on HSIL's website for further details. (http://www.hsi.com.hk/HSI-Net/static/revamp/contents/en/products/timetable_e.pdf)
- 4.3 The Hang Seng Short and Leveraged Index Series is calculated and published in Hong Kong dollars.
- 4.4 Vendor Codes for the Hang Seng Short and Leveraged Index Series

	Bloomberg	Thomson Reuters
HSI Short Index	HSISI	.HSISI
HSI 2x Short Index	HSI2SI	.HSI2SI
HSI Leveraged Index	HSILI	.HSILI
HSCEI Short Index	HSCEISI	.HSCEISI
HSCEI 2x Short Index	HSCEI2SI	.HSCEI2SI
HSCEI Leveraged Index	HSCEILI	.HSCEILI
HSCEI TR 2x Leveraged Index		.HSCEI2LT
Hang Seng H-Fin Short Index	HFINSI	.HFINSI
Hang Seng H-Fin 2x Short Index	HFIN2SI	.HFIN2SI
Hang Seng H-Fin Leveraged Index	HFINLI	.HFINLI



5 Contact Information

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6 Disclaimer

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