

# Nikkei 225 Leveraged Index Nikkei 225 Inverse Index Real-time version Index Guidebook

Nikkei Inc.

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(July 23, 2012 version)

## 1: Concept

The Nikkei 225 Leveraged Index represents the doubled performance of the Nikkei Stock Average (Nikkei 225), and the Nikkei 225 Inverse Index represents the inverse performance of the Nikkei 225.

For instance, if the Nikkei 225 rises by 5% from the closing price of the previous day, the Leveraged Index rises by 10% for the same period and the Inverse Index falls by 5%. Similarly, Nikkei 225 falls by 5% from the closing price of the previous day, the Leveraged Index falls by 10% for the same period and the Inverse Index rises by 5%.

## 2: Calculation method

### (1) Basic points

- Unit of the index value is “points” and the figure is rounded to two decimal places.
- Index value on December 28, 2001 was 10,000 points.

### (2) Index Calculation

- The Nikkei 225 Leveraged Index is designed to represent the doubled performance of the Nikkei 225 and the Nikkei 225 Inverse Index is designed to represent the inverse performance of the Nikkei 225. Therefore, the each index value is calculated by multiplying the closing value of the index on the previous day by the current return, i.e. the current change rate of the Nikkei 225 from the previous day.
- The indices have been calculated at 15-second intervals during the trading hours of the Tokyo Stock Exchange. The indices had been calculated on end-of-day basis until July 20, 2012.

### (3) Formula

$$\text{Index Value(current value)} = \text{Index Value(closing value on previous day)} \\ \times \left\{ 1 + \alpha \times \left( \frac{\text{Nikkei 225(current value)}}{\text{Nikkei 225(closing value on previous day)}} - 1 \right) \right\}$$

\* Closing value of the index is calculated by using the closing price of Nikkei 225 on the current day for “Nikkei 225(current value)”.

when:

- Nikkei 225 Leveraged Index :  $\alpha = 2$
- Nikkei 225 Inverse Index :  $\alpha = -1$

### 3: Calculation Example (the value at 30 seconds after 12:41 pm on July 17, 2012)

\* In the following examples, “current day” was July 13, 2012 and “previous day” was July 17, 2012. These are just examples as the actual real-time calculation starts from July 23, 2012.

#### (1) Nikkei 225 Leveraged Index

- Nikkei 225 Leveraged Index (closing value on previous day)=3601.14
- Nikkei 225 (closing value on previous day)=8724.12
- Nikkei 225 (current value at 12:41:30 pm on current day)=8808.87

Nikkei 225 Leveraged Index (current value at 12:41:30 pm on current day)  
=3601.14×{1 + 2 × (8808.87 / 8724.12 – 1)}=3671.10616... ≈ 3671.11

#### (2) Nikkei 225 Inverse Index

- Nikkei 225 Inverse Index (closing value on previous day)=6418.01
- Nikkei 225 (closing value on previous day)=8724.12
- Nikkei 225 (current value at 12:41:30 pm on current day)=8808.87

Nikkei 225 Inverse Index (current value at 12:41:30 pm on current day)  
=6418.01×{1 – 1 × (8808.87 / 8724.12 – 1)}=6355.66258... ≈ 6355.66

### 4: Treatment of the index value

#### (1) Retroactively Calculation in the past

From the commencement date of the calculation (June 6th 2011) to July 20th 2012, the indices were calculated on the end-of-day basis. And the indices were calculated retroactively dating back from the base date of these indices (December 28th 2001=10,000 points) to June 3rd 2011 on the end-of-day basis.

#### (2) Modification of the index value

If the Nikkei Stock Average (Nikkei 225) used to calculate the Nikkei 225 Leveraged Index and the Nikkei 225 Inverse Index will be modified retroactively, these indices may also be modified retroactively.

### 5: Others

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