

# Change of Calculation Method of Nikkei-JPX Leveraged Index and Nikkei-JPX Inverse Index

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Nikkei, Inc., Japan Exchange Group, Inc., Osaka Exchange, Inc. and Tokyo Commodity Exchange, Inc. will change the calculation method for “Nikkei-JPX Leveraged Index” and “Nikkei-JPX Inverse Index” from July 27, 2020.

[Change of Calculation Method of Nikkei-JPX Leveraged Index and Nikkei-JPX Inverse Index](#)

[“Nikkei-JPX Leveraged Index” “Nikkei-JPX Inverse Index” Index Guidebook effective on July 27, 2020](#)

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Nikkei Inc.  
Japan Exchange Group, Inc.  
Osaka Exchange, Inc.  
Tokyo Commodity Exchange, Inc.

### Change of Calculation Method of Nikkei-JPX Leveraged Index and Nikkei-JPX Inverse Index

Nikkei, Inc. (Nikkei), Japan Exchange Group, Inc. (JPX), Osaka Exchange, Inc. and Tokyo Commodity Exchange, Inc. will change the calculation method for “Nikkei-JPX Leveraged Index”<sup>i</sup> and “Nikkei-JPX Inverse Index”<sup>i</sup> from July 27, 2020.

The Leveraged Index and the Inverse Index are designed to represent leveraged or inverse performance of commodity futures price index (base index). Recently the volatility of commodity futures price index tends to become higher due to the spread of the coronavirus. This may cause both of Leveraged and Inverse Index turning into negative values under the current calculation method if the base index fluctuates by more than a certain percentage.<sup>ii</sup> This would make it impossible to continue calculating the indices.

In order to avoid such situation, and continue providing both indices, calculation methods will be partially changed by placing certain limits on the index values of Nikkei-JPX Leveraged Index and Nikkei-JPX Inverse Index, so that the levels of these indices will not be less than 10% of the previous day’s values.

For details, please see the following Index Guidebook

#### ▼Reference

“Nikkei-JPX Leveraged Index” “Nikkei-JPX Inverse Index” Index Guidebook effective on July 27, 2020<sup>iii</sup>

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<sup>i</sup> Currently these two indices are called “Nikkei-TOCOM Leveraged Index” and “Nikkei-TOCOM Inverse Index” respectively. Their names will be changed on July 27, 2020. (“Notice on Name Change of Nikkei-TOCOM Commodity Index”, <https://www.jpx.co.jp/english/news/2040/20200501.html>)

<sup>ii</sup> Cases where it becomes difficult to continue calculation;  
Base index fell by more than 50 % in comparison with the previous day: Leveraged Index becomes negative value  
Base index rose by more than 100% in comparison with the previous day: Inverse Index becomes negative value

<sup>iii</sup> “Index Guidebook effective on July 27, 2020”, which was published on May 1, 2020 along with the name change of index, will be revised in accordance with the above change.

Nikkei-JPX Leveraged Index  
Nikkei-JPX Inverse Index  
Index Guidebook

July 2020

Osaka Exchange, Inc. (OSE)  
Tokyo Commodity Exchange, Inc. (TOCOM)  
Nikkei, Inc. (Nikkei)

## 1. Concept

The Nikkei-JPX Leveraged Indexes represent the doubled performance of the Nikkei- JPX Commodity Index and the Nikkei-JPX Commodity Sub Indexes (hereinafter “base index(es)”), and the Nikkei-JPX Inverse Indexes represent the inverse performance of the base indexes.

For instance, if a base index rises by 5% from the base index calculated from the settlement price of each component (hereinafter “settlement base index(es)”) of the previous day, the corresponding Nikkei-JPX Leveraged Index rises by 10% over the same period and the corresponding Nikkei-JPX Inverse Index falls by 5%. Similarly, if a base index falls by 5% from the settlement base index of the previous day, the corresponding Leveraged Index falls by 10% over the same period and the corresponding Inverse Index rises by 5%.

## 2. The Indexes and the Underlying Base Indexes

### (1) Nikkei-JPX Leveraged Indexes

Index	Base Index	Base Date	Start Date of Calculation
Nikkei-JPX Leveraged Commodity Index	Nikkei-JPX Commodity Index	December 30, 2009	December 3, 2012
Nikkei-JPX Leveraged Nearby Month Commodity Index	Nikkei-JPX Nearby Month Commodity Index	December 30, 2009	December 3, 2012
Nikkei-JPX Leveraged Industrial Commodity Index	Nikkei-JPX Industrial Commodity Index	November 29, 2013	September 20, 2016
Nikkei-JPX Leveraged Precious Metals Index	Nikkei-JPX Precious Metals Index	December 30, 2009	December 3, 2012
Nikkei-JPX Leveraged Oil Index	Nikkei-JPX Oil Index	December 30, 2009	December 3, 2012
Nikkei-JPX Leveraged Agricultural Product Index	Nikkei-JPX Agricultural Product Index	November 29, 2013	September 20, 2016
Nikkei-JPX Leveraged Gold Index	Nikkei-JPX Gold Index	December 30, 2009	December 3, 2012
Nikkei-JPX Leveraged Silver Index	Nikkei-JPX Silver Index	December 30, 2009	December 3, 2012

Nikkei-JPX Leveraged Platinum Index	Nikkei-JPX Platinum Index	December 30, 2009	December 3, 2012
Nikkei-JPX Leveraged Palladium Index	Nikkei-JPX Palladium Index	December 30, 2009	December 3, 2012
Nikkei-JPX Leveraged Gasoline Index	Nikkei-JPX Gasoline Index	December 30, 2009	December 3, 2012
Nikkei-JPX Leveraged Kerosene Index	Nikkei-JPX Kerosene Index	December 30, 2009	December 3, 2012
Nikkei-JPX Leveraged Crude Oil Index	Nikkei-JPX Crude Oil Index	December 30, 2009	December 3, 2012
Nikkei-JPX Leveraged Rubber Index	Nikkei-JPX Rubber Index	December 30, 2009	December 3, 2012
Nikkei-JPX Leveraged Soybean Index	Nikkei-JPX Soybean Index	November 29, 2013	September 20, 2016
Nikkei-JPX Leveraged Azuki Index	Nikkei-JPX Azuki Index	November 29, 2013	September 20, 2016
Nikkei-JPX Leveraged Corn Index	Nikkei-JPX Corn Index	November 29, 2013	September 20, 2016

\* The indexes listed above are collectively referred to as the “Nikkei-JPX Leveraged Indexes.”

## (2) Nikkei-JPX Inverse Indexes

Index	Base Index	Base Date	Start Date of Calculation
Nikkei-JPX Inverse Commodity Index	Nikkei-JPX Commodity Index	December 30, 2009	December 3, 2012
Nikkei-JPX Inverse Nearby Month Commodity Index	Nikkei-JPX Nearby Month Commodity Index	December 30, 2009	December 3, 2012
Nikkei-JPX Inverse Industrial Commodity Index	Nikkei-JPX Industrial Commodity Index	November 29, 2013	September 20, 2016
Nikkei-JPX Inverse Precious Metals Index	Nikkei-JPX Precious Metals Index	December 30, 2009	December 3, 2012
Nikkei-JPX Inverse Oil Index	Nikkei-JPX Oil Index	December 30, 2009	December 3, 2012

Nikkei-JPX Inverse Agricultural Product Index	Nikkei-JPX Agricultural Product Index	November 29, 2013	September 20, 2016
Nikkei-JPX Inverse Gold Index	Nikkei-JPX Gold Index	December 30, 2009	December 3, 2012
Nikkei-JPX Inverse Silver Index	Nikkei-JPX Silver Index	December 30, 2009	December 3, 2012
Nikkei-JPX Inverse Platinum Index	Nikkei-JPX Platinum Index	December 30, 2009	December 3, 2012
Nikkei-JPX Inverse Palladium Index	Nikkei-JPX Palladium Index	December 30, 2009	December 3, 2012
Nikkei-JPX Inverse Gasoline Index	Nikkei-JPX Gasoline Index	December 30, 2009	December 3, 2012
Nikkei-JPX Inverse Kerosene Index	Nikkei-JPX Kerosene Index	December 30, 2009	December 3, 2012
Nikkei-JPX Inverse Crude Oil Index	Nikkei-JPX Crude Oil Index	December 30, 2009	December 3, 2012
Nikkei-JPX Inverse Rubber Index	Nikkei-JPX Rubber Index	December 30, 2009	December 3, 2012
Nikkei-JPX Inverse Soybean Index	Nikkei-JPX Soybean Index	November 29, 2013	September 20, 2016
Nikkei-JPX Inverse Azuki Index	Nikkei-JPX Azuki Index	November 29, 2013	September 20, 2016
Nikkei-JPX Inverse Corn Index	Nikkei-JPX Corn Index	November 29, 2013	September 20, 2016

\* The indexes listed above are collectively referred to as the “Nikkei-JPX Inverse Indexes”

### 3. Calculation Methods

#### (1) Fundamentals

- The unit of the index value is “points” and the figure is rounded to the second decimal.
- The base index value is set at 10,000.00 points as of base date.

#### (2) Formula

##### 1) Nikkei-JPX Leveraged Index Series

$$\text{Lev.Index}_{t,d} = \text{Lev.Index}_{s,d-1} \times \max \left[ \left\{ 1 + 2 \times \left( \frac{\text{Index}_{t,d}}{\text{Index}_{s,d-1}} - 1 \right) \right\}, 0.1 \right]$$

Where;

$\text{Lev.Index}_{t,d}$  is: the value of the Nikkei-JPX Leveraged Index calculated from the value of the base index observed at time “t” on day “d”.

$\text{Lev.Index}_{s,d-1}$  is: the value of the Nikkei-JPX Leveraged Index calculated from the value of the settlement base index on day “d-1”.

$\text{Index}_{t,d}$  is: the value of the base index at time “t” on day “d”. (NB: The value of  $\text{Index}_{t,d}$  is calculated using the base settlement index when the settlement price of each component is fixed after closing of a day session)

$\text{Index}_{s,d-1}$  is: the value of the settlement base index on day “d-1”.

##### 2) Nikkei-JPX Inverse Index Series

$$\text{Inv.Index}_{t,d} = \text{Inv.Index}_{s,d-1} \times \max \left[ \left\{ 1 - 1 \times \left( \frac{\text{Index}_{t,d}}{\text{Index}_{s,d-1}} - 1 \right) \right\}, 0.1 \right]$$

Where;

$\text{Inv.Index}_{t,d}$  is: the value of the Nikkei-JPX Inverse Index calculated from the value of the base index observed at time “t” on day “d”.

$\text{Inv.Index}_{s,d-1}$  is: the value of the Nikkei-JPX Inverse Index calculated from the value of the settlement base index on day “d-1”.

$\text{Index}_{t,d}$  is: the value of the base index at time “t” on day “d”. (NB: The value of  $\text{Index}_{t,d}$  is calculated using the base settlement index when the settlement price of each component is fixed after closing of a day session)

$\text{Index}_{s,d-1}$  is: the value of the settlement base index on day “d-1”.

#### **4. Treatment of the Index Value**

##### **(1) Publication of the Indexes**

Japan Exchange Group, Inc. (“JPX”), Osaka Exchange, Inc. (“OSE”) and Tokyo Commodity Exchange, Inc. (“TOCOM”) (JPX, OSE and TOCOM hereinafter collectively referred to as “JPX Group”) and Nikkei Inc. (“Nikkei”) calculate the Nikkei-JPX Leveraged Index and the Nikkei-JPX Inverse Index, using the base settlement index and publicized once a day.

##### **(2) Retroactive calculation of past index value**

The past index values of the Nikkei-JPX Leveraged Indexes and the Nikkei-JPX Inverse Indexes have been calculated retroactively back from the start date of calculation to the base date of these indices.

##### **(3) Modification of the index value**

If the base index used to calculate the Nikkei-JPX Leveraged Indexes and the Nikkei-JPX Inverse Indexes are modified retroactively, these indices may also be modified likewise.

#### **5. Others**

##### **(1) Index License**

The Nikkei-JPX Leveraged Index and the Nikkei-JPX Inverse Index are copyrighted materials calculated in a methodology independently developed and created by JPX Group and Nikkei, which are the sole and exclusive owners of the copyright and other intellectual property rights in the Nikkei-JPX Leveraged Indexes and the Nikkei-JPX Inverse Indexes themselves and the methodology to calculate the Nikkei-JPX Leveraged Indexes and the Nikkei-JPX Inverse Indexes.

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JPX Group and Nikkei have no obligation to continue publishing the Nikkei-JPX Leveraged Indexes and the Nikkei-JPX Inverse Indexes, and JPX Group and Nikkei are not responsible for any error, delay or interruption in the publication of the Nikkei-JPX Leveraged Indexes and the Nikkei-JPX Inverse Indexes.

JPX Group and Nikkei are entitled to change the details of the Nikkei-JPX Leveraged Indexes and the Nikkei-JPX Inverse Indexes, and to suspend or stop the calculation and the publication of the indices.

Although, in principle, the Nikkei-JPX Leveraged Indexes and the Nikkei-JPX Inverse Indexes are calculated and maintained in accordance with the information provided in this guidebook, the Index Management Special Committee, as stipulated in the Nikkei-JPX Commodity Index Guidebook, has discretion to decide alternative calculation measures which said Committee deems appropriate to be taken, when events that are not covered in this document occur or under such circumstances where it is difficult to calculate the indices following the current rules. The specifications of the indexes described in this guidebook may be amended without notice. JPX Group and Nikkei made every effort possible to ensure the accuracy of the content of this guidebook; however, JPX Group and Nikkei make no statement and warranty, neither explicit nor implied, as to the integrity or accuracy of the information stated within this guidebook. JPX Group and Nikkei assume no responsibility for any harm or loss suffered by the user of the guidebook that may arise through the use of any content or other information described within this guidebook.

In addition, the above-mentioned disclaimers also apply to the base index which is used to calculate the Nikkei-JPX Leveraged Indexes and the Nikkei-JPX Inverse Indexes.

This English document may not be an entirely accurate translation of the original Japanese document. In cases where differences may arise between the English version and the original Japanese version, the original Japanese document will prevail.

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