NOMURA

Notice

October 5, 2020
Nomura Securities Co., Ltd.
Global Research Division,
Financial Engineering & Technology Research Center
Index Operation Dept.

Changes to the Rules of Nomura Crude Oil Index

Considering a circumstance of recent crude oil prices (negative prices and etc.), Nomura Index Operations Department will implement the following changes to the rules of Nomura Crude Oil Long Index construction.

1. Subject Index
   Nomura Crude Oil Long Index

2. Effective Date
   November 30, 2020

3. Details
New York Mercantile Exchange is referred to hereafter as EXCHANGE.

＜Reconstitution＞

Current rule	New rule
① Adopts 50 % of the inclusion ratio of each 1st and 2nd contract month on the EXCHANGE trading day after the first Tokyo and EXCHANGE trading day from the fifth EXCHANGE trading day of the month ~ the second Tokyo trading day from the fifth Tokyo and EXCHANGE trading day of the month. ② Adopts 100 % of the inclusion ratio of the 2nd contract month on the EXCHANGE trading day after the day of ①. (The 2nd contract month will be the 1st contract month from the day after the last trading day.)	Adopts equal weight of the inclusion ratio of the 3rd, 4th and 5th contract months on the reconstitution date defined below. (The 3rd, 4th and 5th contract months will be the 2nd, 3rd and 4th contract months from the day after the last trading day.) <Reconstitution Date> The fifth EXCHANGE trading day from the last trading day. When Tokyo is NOT open on such date, the reconstitution date will be set on a day after the fifth EXCHANGE trading day where both EXCHANGE and Tokyo are open.

＜Determination of VOLUME＞

Current rule	New rule
Decides VOLUME simultaneously with reconstitutions. Calculates VOLUME with VALUE on index calculation day prior to ① and ② on <Reconstitutions>, and prices of contract months.	Defines the last trading day as the Reconstitution Base Date, and determines VOLUME based on both market cap of every contract month on the reconstitution base date and prices of contract months after the next reconstitution.

＜Contract Month＞

Current rule	New rule
Front month roll.	■ When the latest Reconstitution Date≦ calculation date≦the Reconstitution Base Date right after the latest Reconstitution Date, adopts the 3rd, 4th and 5th contract months. ■ When Reconstitution Base Date right after the latest Reconstitution Date＜calculation date＜next Reconstitution Date, adopts the 2nd, 3rd and 4th contract months.

＜Calculation Methodology＞

Current rule
$$INDEX(t) = \sum_{i \in constituent} VALUE_i(t)$$ $$VALUE_i(t) = \sum_{j \in contract\ month} VOLUME_i^j(t) \times PRICE_i^j(t)$$ $VOLUME_i^j(t)$ $$= \begin{cases} \dfrac{VALUE_i(t-1) \times WEIGHT_i^j(t)}{PRICE_i^{k_j}(t-1)} & (\text{if } t-1 \text{ is a Tokyo trading day}) \\ VOLUME_i^{k_j}(t-1) & (\text{if } t-1 \text{ is not a Tokyo trading day}) \end{cases}$$ *Determine kj to refer on $PRICE_i^j(t)$ and $PRICE_i^{k_j}(t-1)$ of the same contract month. Whilst, under a situation where kj is unfeasible to determine or unable to refer on the same contract month, determine $VOLUME_i^j(t)$ as null.*

New rule

$$INDEX(t) = \big(1 + RETURN(t)\big) \times INDEX(t-1)$$

$$RETURN(t) = \frac{\sum_{i \in constituent(t)} VOLUME_i(T(t)) \times PRICE_i(t)}{\sum_{i \in constituent(t)} VOLUME_i(T(t)) \times PRICE_i(t-1)} - 1$$

$$VOLUME_i(T(t)) = \frac{VALUE(T_0(t))}{3} \div PRICE_i(T_0(t))$$

$$i \in Constituents(t)$$

$$VALUE(T_0(t)) = \sum_{i \in constituent(T(t))(*1)} VOLUME_i(T'(t)) \times PRICE_i(T_0(t))$$

- t: $Calculation\ date(EXCHANGE\ trading\ day)$
- $t-1$: $the\ preceding\ EXCHANGE\ trading\ date\ of\ t$
- $T(t)$: $the\ last\ Reconstitution\ Date\ prior\ to\ t$
- $T'(t)$: $the\ last\ Reconstitution\ Date\ prior\ to\ T(t)$
- $T_0(t)$: $the\ last\ Reconstitution\ Base\ Date\ prior\ to\ T(t)$
- $PRICE_i(s)$: $Clearing\ price\ (US\ dollar\ per\ barrel)\ of\ an\ issue(i)\ on\ date\ s$
- $Constituents(t)$: $3rd, 4th, and\ 5th\ contract\ month\ \big(as\ of\ T(t)\big)\ of\ WTI\ futures(*2)$
- $VOLUME_i(T(t))$: $Index\ calculation\ volume\ of\ issue(i)\ adopted\ on\ T(t)$
- $VALUE(T_0(t))$: $Total\ sum\ of$ "$Index\ calculation\ volume\ of\ issue(i)\ adopted\ on\ T(t)$" × "$Price\ of\ issue(i)\ on\ T_0(t)$" $on\ whole\ constituents\ T(t)$

*(*1)* 3rd, 4th and 5th contract months on $T'(t)$
*(*2)* These are 4th, 5th, and 6th contract months on $T_0(t)$, and 2nd, 3rd, and 4th contract months from the following EXCHANGE trading date of the Reconstitution Base Date immediately after $T(t)$.

End of announcement.