Dynamic Price Banding Mechanism of Commodity Futures

Taiwan Futures Exchange
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Outline

- The Dynamic Price Banding Mechanism of Commodity Futures
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- For enhancing market integrity, Taifex imposed the dynamic price banding mechanism (DPBM) by phases. The applicable products includes Domestic and Foreign Equity Index Futures, ETF Futures, FX Futures, Single Stock Futures and TXO currently.
- Taifex will expand Commodity Futures to applicable products. (including TAIFEX Gold Futures, TAIFEX NT Dollar Gold Futures and TAIFEX Brent Crude Oil Futures) all contract months and calendar spread)

Introduction

Applicable trading time

TAIFEX Brent Crude Oil Futures	Regular Trading Session	Opening Call Auction(8:30～8:45)	Not Applicable
		Continuous Matching(8:45～13:45)	Applicable
	After-Hour Trading Session	Opening Call Auction(14:50～15:00)	Not Applicable
		Continuous Matching(15:00～next day 5:00)	Applicable
TAIFEX Gold Futures, TAIFEX NT Dollar Gold Futures	Regular Trading Session	Opening Call Auction(8:30～8:45)	Not Applicable
		Continuous Matching(8:45～16:15)	Applicable
	After-Hour Trading Session	Opening Call Auction(17:15～17:25)	Not Applicable
		Continuous Matching(17:25～next day 5:00)	Applicable

*Dynamic price banding is not applicable to block trades.

How dynamic price banding works

- TAIFEX checks each new order[1] (including limit orders, market orders and market with protection orders[2]) and simulates matched prices based on the order book at the time.
  - Buy Orders: simulated matched price > the upper limit of dynamic price band → reject order
  - Sell Orders: simulated matched price < the lower limit of dynamic price band → reject order
  - Only new orders that may cause abnormal price movements will be rejected; other transactions remain unaffected.

**When simulated matched prices can't be generated for a newly submitted buy (sell) order because there is no existing counterparty sell (buy) order in the order book, TAIFEX will reject the buy (sell) order if the designated bid (offer) price of the buy (sell) order is above (below) the upper (lower) limit of TAIFEX's dynamic price band.*

1. Price modifications are treated as new orders and are subject to dynamic price banding.
2. Implied orders constructed by TAIFEX' trading system are not actual orders and therefore not subject to dynamic price banding.

Calculation of the limits of dynamic price band

- Upper limit : Base price + Variation range
- Lower limit : Base price - Variation range
- Base price determination sequence

• Ranges are calculated before market open every day.
• The range is fixed during the trading session.

1. The last effective traded price → 2. Effective mid-price of bid and ask → 3.Price decided by TAIFEX

1. The last effective traded price

- The last traded price has to fulfill the criteria of the effective traded price. The time lag between the effective traded price and the base price must be within a predetermined number of seconds.
- The last traded price must be within a predetermined range from the effective mid-price of bid and ask.
- The difference between the last effective traded price and the price calculated by TAIFEX taking account of relevant product price must be within a predetermined range.

2. Effective mid-price of bid and ask

- The effective mid-price is a volume-weighted average price of a series of bid and ask prices starting from the best ones.
- The accumulated bid/ask volume used in calculating the effective mid-price should reach a predetermined threshold set by TAIFEX.
- (The volume-weighted average ask price ÷ The volume-weighted average bid price)<= a predetermined ratio.
- The difference between the effective mid-price of bid and ask and the price calculated by TAIFEX taking account of relevant product price must be within a predetermined range.

3.Price decided by TAIFEX

TAIFEX will determine the base price by referring to the relevant product prices.

Calculation of the variation range

- Variation Range
  - Outright Month Contracts: the most recent daily settlement price of the nearest month contract of the Commodity futures × outright rejection threshold
  - Calendar Spread: the most recent daily settlement price of the nearest month contract of the Commodity futures × spread rejection threshold
    - ✓ Outright and Spread Rejection Threshold of TAIFEX Brent Crude Oil Futures: 3%
    - ✓ Outright and Spread Rejection Threshold of TAIFEX Gold Futures and TAIFEX NT Dollar Gold Futures: 2%
  - Example: Assuming the most recent daily settlement price of the nearest month contract of Gold Futures is 1,800 points:
    - ✓ The variation range for outright contract and spread is 36 points (=1,800 × 2%).

Dynamic price banding with different order types

<table>
<tr><th>Order type</th><th>Treatment</th></tr>
<tr><td>Rest of Session (ROD)</td><td rowspan="2">■ Any portion of the order of which the simulated matched price is above (below) the upper (lower) limit of TAIFEX’ dynamic price band will be rejected, while the remainder of the order with simulated matched prices within the dynamic price band will be executed.</td></tr>
<tr><td>Immediate or Cancel (IOC)</td></tr>
<tr><td>Fill or Kill (FOK)</td><td>■ If any of the simulated matched prices are above (below) the upper (lower) limit of TAIFEX’ dynamic price band, the whole order will be rejected.</td></tr>
</table>

- **Example: an investor submits a limit order to buy 5 lots of the CDF spot month contract. The simulated matched prices of 4 lots are within the dynamic price band, while the simulated match price of 1 lot exceeds the upper limit.**
  - If the limit order is an ROD or IOC order: 4 lots will be executed, while 1 lot will be rejected.
  - If the limit order is an FOK order: the whole order (5 lots) will be rejected.

Other issues

- **Unusual market conditions: TAIFEX may adjust the variation range or suspend the DPBM when necessary.**
  - Quantitative standards
    - When the futures relevant volatility index reaching the limit set at TAIFEX' discretion, TAIFEX may announce adjustments to the variation range.
  - Non-Quantitative standards
    - In the event of a natural disaster, riot, war or other force majeure events that may affect the trading at TAIFEX, TAIFEX may announce adjustments to the variation range or the suspension of the DPBM.
    - For circumstances that may affect the normal operation of dynamic price banding, TAIFEX may announce the suspension of the DPBM.
    - For other circumstances deem necessary, TAIFEX may announce adjustments to the variation range.

Other issues(cont.)

- **System messages**
  - When an order is rejected due to dynamic price banding: the “simulated matched prices exceeded dynamic price banding” system message and “the upper limit/lower limit belonging to the rejected order” will be sent.
  - Adjustment to variation range: the “variation range relaxed” system message will be sent before market open or during trading hours.
  - Suspension of the dynamic price banding mechanism:
    - Qualitative indicators reached: the “dynamic price banding mechanism suspended” system message will be sent;
    - Suspension of dynamic price banding due to system failure: the “dynamic price banding mechanism suspended” system message will be sent. Once the system issue is resolved, the “dynamic price banding mechanism resumed” system message will be sent.

Thank You