

# Dynamic Price Banding Mechanism of Gold Options



Taiwan Futures Exchange  
May, 2023

# Outline

- Purpose
- Introduction

A collage of various international banknotes including US, Euro, and Chinese currency, overlaid with a world map and a line graph. The word "Purpose" is centered in white text.

# Purpose

# Purpose

- 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, Commodity Futures, Index Options and ETF Options currently.
- Taifex will expand Gold Options to applicable products.





# Introduction

# Applicable trading time

## ■ Applicable trading time<sup>1</sup>

<b>Regular Trading Session</b>	<b>Opening Call Auction (8:30 ~ 8:45)</b>	<b>Not Applicable</b>
	<b>Continuous Matching (8:45 ~ 16:15)</b>	<b>Applicable</b>
<b>After-Hour Trading Session</b>	<b>Opening Call Auction (17:15 ~ 17:25)</b>	<b>Not Applicable</b>
	<b>Continuous Matching (17:25 ~ next day 5:00)</b>	<b>Applicable</b>

1. Dynamic price banding is not applicable to block trades.

# How dynamic price banding works

- TAIFEX checks each new order (including limit orders, market orders and market with protection orders) and simulates matched prices based on the order book at the time.
  - ◆ Buy Orders: simulated matched price  $>$  the upper limit of dynamic price band  $\rightarrow$  reject order
  - ◆ Sell Orders: simulated matched price  $<$  the lower limit of dynamic price band  $\rightarrow$  reject order
  - ◆ Only new orders that may cause abnormal price movements will be rejected; other transactions remain unaffected.
  - ◆ Upon receiving a combination order of Options, each component (leg) of the combination order will be checked. If any simulated matched price of the components (legs) exceed its price band, the combination order will be rejected.

*\*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.*

# Calculation of the limits of dynamic price band

- Upper limit : base price + Variation range
- Lower limit : base price - Variation range
  
- Base price determination sequence
  - ◆ Base price is calculated using options pricing model with the following parameters:
    - Underlying Price
    - Volatility
    - Interest Rate
    - Strike Price
    - Time to expiration



# Calculation of the variation range

- The most recent daily settlement price of the nearest month contract of the NT Dollar Gold Futures<sub>x</sub> outright rejection threshold (2%)

# Dynamic price banding with different order types

Order type	Treatment
Rest of Session (ROD)	■ 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.
Immediate or Cancel (IOC)	
Fill or Kill (FOK)	■ 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.

- **Example: an investor submits a limit order to buy 10 lots of the TGO spot month contract. The simulated matched prices of 6 lots are within the dynamic price band, while the simulated match price of 4 lots exceeds the upper limit.**
  - ◆ If the limit order is an ROD or IOC order: 6 lots will be executed, while 4 lots will be rejected.
  - ◆ If the limit order is an FOK order: the whole order (10 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 trading volatility index reaching the limit set at TAIFEX' discretion.
  - ◆ 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 dynamic price banding.
    - For circumstances that may affect the normal operation of dynamic price banding, TAIFEX may announce the suspension of dynamic price banding.
    - 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.

A collage of various international banknotes including US dollars, Euros, and Chinese Yuan, overlaid with a world map and a data visualization. The text "Thank You" is centered in the middle of the collage.

Thank You