

# Dynamic Price Banding Mechanism of Single Stock Futures



Taiwan Futures Exchange  
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# Outline

- The Dynamic Price Banding Mechanism of Single Stock Futures
  - Purpose
  - Introduction



# 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 and TXO currently.
- It will expanded to Single Stock Futures(STF) all contract months and calendar spread
  - At present (until June 15, 2021) there are 212 single stock futures, of which 165 underlying securities are TWSE stocks and the other 47 underlying securities are TPEX stocks.
  - Among the 212 single stock futures, 17 are Mini-single stock futures(100 shares), and the other 195 are standard contracts single stock futures(2,000 shares).



The background of the slide is a complex collage. It features various international banknotes, including a US \$100 bill, a Euro 1000 note, and a Chinese 1000 Yuan note. A world map is overlaid on the collage, with a red line tracing a path across it. There are also some data visualization elements, like a grid and some numbers, suggesting a financial or economic theme.

# Introduction

# Applicable trading time

## ■ Single stock futures

<b>Regular Trading Session</b>	<b>Opening Call Auction (8:30~8:45)</b>	<b>Not Applicable</b>
	<b>Continuous Matching (8:45~13:45)</b>	<b>Applicable</b>

# How dynamic price banding works

- TAIFEX checks each new order<sup>1</sup> (including limit orders, market orders and market with protection orders<sup>2</sup>) 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.

*\*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.*

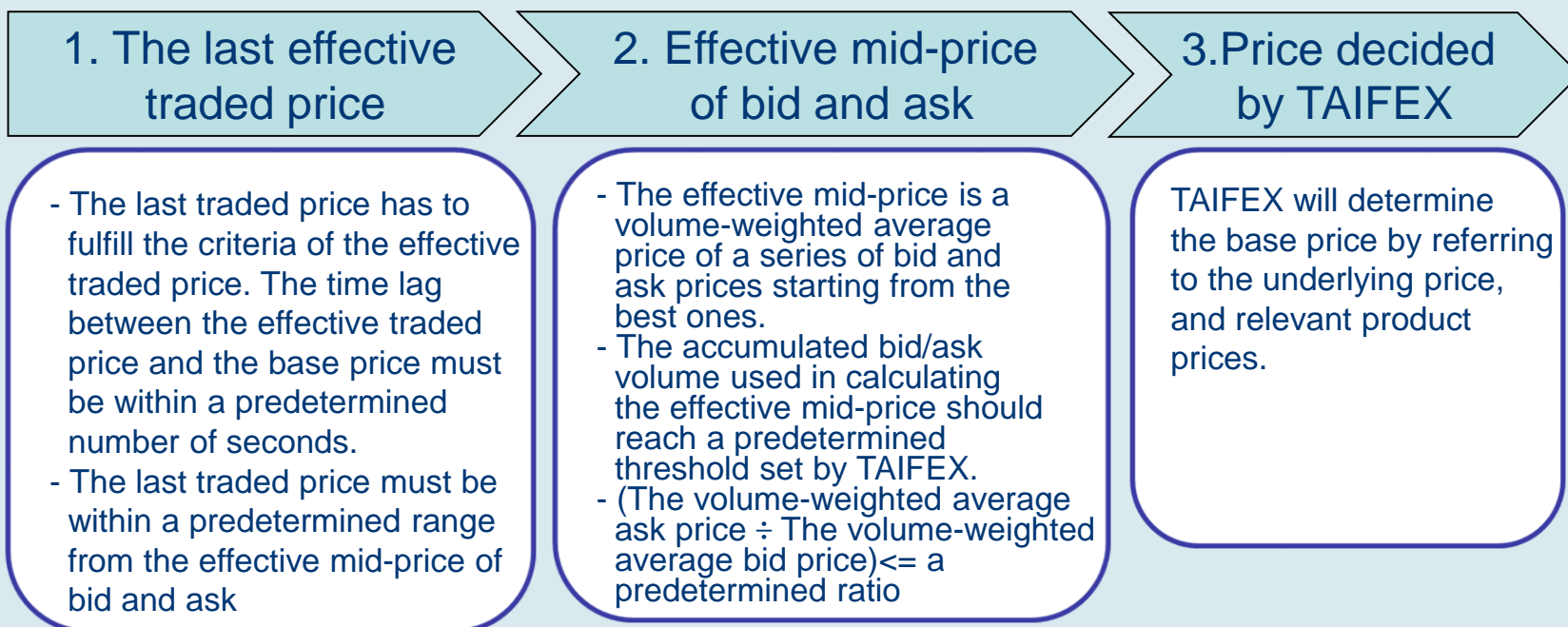
1. Price modifications are treated as new orders and are subject to dynamic price banding.
2. Implied orders constructed by TAIFEX' trading system are not actual orders and therefore not subject to dynamic price banding.

# Calculation of the limits of dynamic price band

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

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

## ■ Base price determination sequence





# Calculation of the variation range

## ■ Variation Range

### ■ Before the underlying security opening

- ◆ Outright Contracts and Calendar Spread = Referred Opening Price of the nearest month contract of the single stock futures × **outright rejection threshold (7%)**

### ■ After the underlying security opening

- ◆ Outright Contracts and Calendar Spread = Referred Opening Price of the nearest month contract of the single stock futures × **outright rejection threshold (3.5%)**

### ■ Example : Assuming the Referred Opening Price of the nearest month contract of Taiwan Semiconductor Manufacturing Co., Ltd. Stock Futures is 600 points:

- ◆ Before common stocks of Taiwan Semiconductor Manufacturing Co., Ltd. opening
  - The variation range for outright contracts and Calendar Spread is 42 points (=600 × 7%).
- ◆ After common stocks of Taiwan Semiconductor Manufacturing Co., Ltd. opening
  - The variation range for outright contracts and Calendar Spread is 21 points (=600 × 3.5%).

# 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.

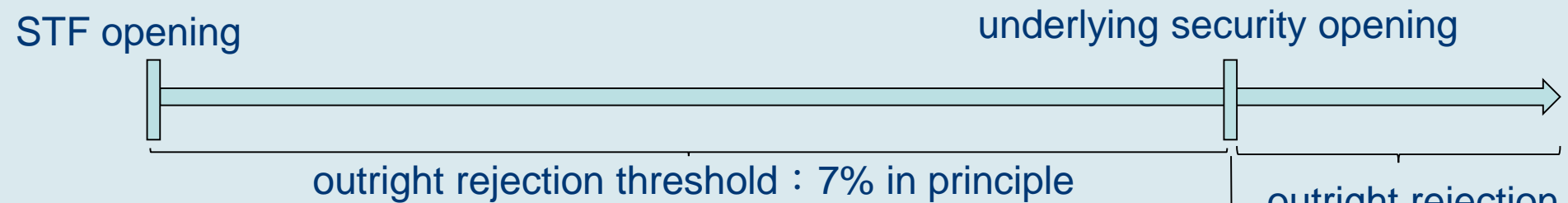
- **Example: an investor submits a limit order to buy 5 lots of the CDF spot month contract. The simulated matched prices of 4 lots are within the dynamic price band, while the simulated match price of 1 lot exceeds the upper limit.**
  - ◆ If the limit order is an ROD or IOC order: 4 lots will be executed,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

# The suspension of the DPBM for Single Stock Futures

- When encountering the following conditions, the dynamic price banding mechanism for SSF will be suspended.

Conditions	Suspension Period of the DPBM	Products with suspension of the DPBM
the trading resumption date of underlying securities which stop trading or suspend trading for a period due to capital reduction, mergers, disposition and major information to announce	before the underlying security opening	the STF with the same underlying security
the closing price of the underlying security hits the limit up or limit down on the previous day		
the pre-market quantitative suspension standard is reached	before the stock market opening	all STF

# The suspension of the DPBM for Single Stock Futures (cont.)



- When encountering the following conditions, the DPBM will be suspended for specific STF until the underlying security opening
  - ◆ the trading resumption date of underlying securities which stop trading or suspend trading for a period due to capital reduction, mergers, disposition and major information to announce
  - ◆ the closing price of the underlying security hits the limit up or limit down on the previous day
- When encountering the following condition, the DPBM for all STF will be suspended until the stock market opening
  - the pre-market quantitative suspension standard is reached

outright rejection threshold : 3.5% in principle

# 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, 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.

A collage of various international banknotes including US, Euro, and Chinese currency, overlaid with a world map and a data chart. The text "Thank you" is centered in white.

Thank you