Summary of the Amendment of Thailand Futures Exchange (TFEX) Trading Regulations

Thailand Futures Exchange ("**TFEX**") has implemented the New Trading System to enhance the system to be align with global practice. The new system is developed by trading software vendor which provide trading system to many Exchanges. TFEX has revised the regulations to suit the current business environment, better align with international practices and support a new trading system. The key trading regulations which have been amended are:

1. Opening price of derivatives series
2. Amendment of order types and order conditions
3. Amendment of Circuit Breaker
4. Amending minimum tick size of Block Trade transaction for Sector Index Futures
5. Matching of Combination Order may create a trading price outside ceiling and floor.
6. TFEX may cancel trading order any time when there is a system failure.

Subject	Amended Regulations in the New Trading System	Remarks

1. Opening price of derivatives series
 	
1.1 Opening price calculation method
	In the New Trading System, calculation of opening price and closing price (auction price) apply the same principle where the system will aggregate all orders during pre-open and pre-close period and match once in one price. The auction price calculation in the new system is as follows:
	
	1. The price that generates the maximum executable volume (same as current system).
	2. If there is more than one price as mentioned in 1, the price with minimum unexecuted volume ("Minimum imbalance") is selected. (same as current system).
	3. If there is more than one price with minimum imbalance as mentioned in 2, the following prices is applied:
	  3.1 If the aggregate buy volume is greater than the aggregate sell volume (Positive Imbalance), the highest price under item 2. is selected. (same as current system).
	  3.2 If the aggregate sell volume is greater than the aggregate buy volume (Negative Imbalance), the lowest price under item 2. is selected. (same as current system).
		In accordance with the Core Algorithm in the New Trading System.

Subject	Amended Regulations in the New Trading System	Remarks
	3.3 If the aggregate buy volume is equal to the aggregate sell volume in all price level, price closest to the last trading price (Last Sale), Settlement Price or the lowest price is selected respectively. (The highest price is selected in the current system.) (Cancel the following condition in the New Trading System: If the imbalances are on both buy and sell, select the two prices nearest to the price level where the imbalance changes sign. Between those two prices, the one closest to Last Sale or Settlement Price or higher respectively is used as the auction price.) (Examples of Opening price calculation are available in the Appendix 1)	
1.2 Handling of Market Order during Pre-open session	Handling of Market Order[1] during Pre-open session in the New Trading System will be changed slightly from current system. The new system work as follows: ● Buy side Market Order = the higher price between the following price: ○ Highest bid price + 1 tick ○ Highest offer price + 1 tick (The current system applies the highest offer price.) ● Sell side Market Order = the lower price between the following price: ○ Lowest bid price - 1 tick (The current system uses the lowest bid price.) ○ Lowest offer price - 1 tick	In accordance with the Core Algorithm in the New Trading System.
1.3 Opening price may fall outside the Ceiling & Floor price ±1 tick size	Due to the different handling of Market orders during Pre-open session in the New Trading System, the opening price can fall outside ceiling & floor but not exceeding ±1 tick. Investors can avoid this event by sending Limit order instead of Market order (The current system require the price to be within the range not exceeding the ceiling and floor.)	In accordance with the Core Algorithm in the New Trading System.

[1] Market Order during Pre-open session means order to trade at opening price. If there is unmatched volume, the system will cancel the remaining volume when the market opens and Market order will be matched before Limit Order.

Subject	Amended Regulations in the New Trading System	Remarks
2. Amendment of order types and order conditions	The order types and order conditions in the New Trading System have been amended as follows: 1. Cancel of Special Market Order[2] 2. Cancel of Good till Time, Good till Session and Good till Next Auction 3. Good till Cancel and Good till Date can remain in the system for 255 days at maximum. 4. Introduce Session State Order which is a kind of triggered orders. The order will be triggered when the specified trading session is reached. For example, placing orders in the morning to be triggered in the afternoon session.	• Amended to be align with the New Trading System. • Special Market Order, which is cancelled, can be replaced with Market Order[3]
3. Amendment of Circuit Breaker	Amend circuit breaker for Commodity Futures, Currency Futures and Interest Rate Futures as follows: • Trading suspension will be shortened to 2 minutes and Order entry are allowed during such period. • If the remaining trading time of is less than 2 minutes, all orders are auction matched at the end of the session. (In current system, the trading suspension is 5 minutes for Commodity Futures and 30 minutes for Currency Futures and Interest Rate Futures).	Reduce suspension duration to be consistent with global practice which allow investors to adjust their portfolio faster since the underlying assets are still being traded in the global market.
4. Amending minimum tick size of Block Trade transaction for Sector Index Futures	Amending the minimum tick size for of Block Trade transactions of Sector Index Futures to be 4 decimal places (0.0001).	Due to some system limitation in numbers of decimal places, it is needed to change from 5 decimal places to 4 decimal places.
5. Matching of Combination Order may create a trading price	In case of matching of combination orders, there may be some event where trading price of Outright Series falls outside the Daily Price Limit (depending on the trading price at the time). The price of Outright Series will appear through real time trading ticker only. However, such price will not affect Circuit Breaker function and will not affect the price statistics such as opening price, highest price, lowest price, and last price.	The ticker price which may be outside price limit works according to the core system, however the combination order entry can still be

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[2] Special market order is an order with no specified price and will match with the opposite order at all price level until all specified volume is matched. If there is unmatched volume, the system will arrange for the remaining portion to be bids with one price level higher than or offers with one price level lower than the last price.

[3] Market Order is an order with no specified price. The system will match with the opposite order at all price level until all specified volume is matched. If there is unmatched volume, the system will immediately cancel remaining volume.

Subject	Amended Regulations in the New Trading System	Remarks
outside ceiling and floor.	(Example is available in Appendix 2)	sent within daily price limit as current system.
6. TFEX may cancel trading order any time when there is a system failure	TFEX may cancel trading orders during any period of system disruption to cope with emergencies or prevent damage to overall trading. The TFEX guidelines are as follows: • In case of system failure which may widely affect the trading and if trading is continued, may damage or be unfair for investors, TFEX may temporarily suspend trading of any or all securities. • When system failure is solved and ready for recommence trading, TFEX may consider to cancel unmatched orders for any or all securities in the market. In such case, TFEX will inform the members and investors in advance via communication channels of TFEX. • TFEX will send details of cancelled orders to the relevant members for their reconciliation apart from normal daily operation data.	Reduce suspension duration to be consistent with global practice which allow investors to adjust their portfolio faster since the underlying assets.

Appendix 1 : Examples of Opening price calculation

Example 1 : Maximum executable volume and Minimum imbalance

Bid		Offer	
Volume	**Price**	**Price**	**Volume**
200	Market Order	Market Order	100
100	1,810.9	1,810.5	100
200	1,810.8	1,810.7	100
100	1,810.7	1,810.9	100

Last sale = 1,810.70

	Price	**Bid**	**Accumulated Bid**	**Offer**	**Accumulated Offer**	**Matched Vol.**	**Imbalance**
	1,811.0	Market Order = 200	200		400	200	-200
Auction price	**1,810.9**	**100**	**300**	**100**	**400**	**300**	**-100**
	1,810.8	200	500		300	300	200
	1,810.7	100	600	100	300	300	300
	1,810.6		600		200	200	400
	1,810.5		600	100	200	200	400
	1,810.4		600	Market Order = 100	100	100	500
	1,810.3		600		0	0	600

Buy side Market Order = the higher price between Highest bid price + 1 tick and Highest offer price + 1 tick = 1,810.9 + 0.1 = 1,811.0

Sell side Market Order = the lower price between Lowest bid price - 1 tick and Lowest offer price - 1 tick = 1,810.5 - 0.1 = 1,810.4

Example 2 : Positive imbalance, The highest price is selected.

Bid		Offer	
Volume	**Price**	**Price**	**Volume**
100	Market Order	Market Order	100
200	1,811.0	1,810.3	100
5,000	1,810.7	1,810.4	100
500	1,810.3	1,810.5	100
		1,810.9	100

Last sale =	1,810.70					Positive imbalance	
Price	**Bid**	**Accumulated Bid**	**Offer**	**Accumulated Offer**		**Matched Vol.**	**Imbalance**
1,811.1	Market Order = 100	100		500		100	-400
1,811.0	200	300		500		300	-200
1,810.9		300	100	500		300	-200
1,810.8		300		400		300	-100
1,810.7	**5,000**	**5,300**		**400**		**400**	**4900**
1,810.6		5,300		400		400	4900
1,810.5		5,300	100	400		400	4900
1,810.4		5,300	100	300		300	5,000
1,810.3	500	5,800	100	200		200	5,600
1,810.2		5,800	Market Order = 100	100		100	5,700
1,810.1		5,800		0		0	5,800

(Auction price row = 1,810.7)

Buy side Market Order = the higher price between Highest bid price + 1 tick and Highest offer price + 1 tick = 1,811.0 + 0.1 = 1,811.1

Sell side Market Order = the lower price between Lowest bid price - 1 tick and Lowest offer price - 1 tick = 1,810.3 - 0.1 = 1,810.2

Example 3 : Negative imbalance, The lowest price is selected.

Bid		Offer	
Volume	**Price**	**Price**	**Volume**
100	Market Order	Market Order	300
100	1,811.0	1,810.2	100
100	1,810.9	1,810.4	100
200	1,810.8	1,810.6	100
200	1,810.5	1,810.9	100
200	1,810.3	1,811.0	100

Last sale =	1,810.70					Negative imbalance	
Price	**Bid**	**Accumulated Bid**	**Offer**	**Accumulated Offer**	**Matched Vol.**	**Imbalance**
1,811.1	Market Order = 100	100		800	100	-700
1,811.0	100	200	100	800	200	-600
1,810.9	100	300	100	700	300	-400
1,810.8	200	500		600	500	-100
1,810.7		500		600	500	-100
Auction price — **1,810.6**		**500**	**100**	**600**	**500**	**-100**
1,810.5	200	700		500	500	200
1,810.4		700	100	500	500	200
1,810.3	200	900		400	400	500
1,810.2		900	100	400	400	500
1,810.1		900	Market Order = 300	300	300	600

Buy side Market Order = the higher price between Highest bid price + 1 tick and Highest offer price + 1 tick = 1,811.0 + 0.1 = 1,811.1

Sell side Market Order = the lower price between Lowest bid price - 1 tick and Lowest offer price - 1 tick = 1810.2 - 0.1 = 1,810.1

Example 4 : Imbalance = 0, price closest to the last trading price (Last Sale) is selected.

Bid		Offer	
Volume	Price	Price	Volume
100	Market Order	Market Order	200
100	1,810.9	1,810.4	100
100	1,810.8	1,810.8	100
100	1,810.2		
100	1,810.1		

Last sale = 1,810.70

Price	Bid	Accumulated Bid	Offer	Accumulated Offer	Matched Vol.	Imbalance
1,811.0	Market Order =100	100		400	100	-300
1,810.9	100	200		400	200	-200
1,810.8	100	300	100	400	300	-100
Auction price 1,810.7		300		300	300	0
1,810.6		300		300	300	0
1,810.5		300		300	300	0
1,810.4		300	100	300	300	0
1,810.3		300		200	200	100
1,810.2	100	400		200	200	200
1,810.1	100	500		200	200	300
1,810.0		500	Market Order = 200	200	200	300

Buy side Market Order = the higher price between Highest bid price + 1 tick and Highest offer price + 1 tick = 1,810.9 + 0.1 = 1,811.0
Sell side Market Order = the lower price between Lowest bid price - 1 tick and Lowest offer price - 1 tick = 1810.1 - 0.1 = 1,810.0

Appendix 2 : Example for Combination Order matching that may create a trading price outside Daily Price Limit

1. Order#1 Buy USDK22 = 10 contracts at 31.20 และ Order#2 Buy USDJ22K22 = 1 contracts at -2.43

Series	Bid		Offer		Daily Price Limit	
	Volume	Price	Price	Volume	Ceiling	Floor
USDJ22					29.68	32.14
USDK22	10	31.20			29.71	32.17
USDJ22K22	1	-2.43			-2.43	2.49

(#1 marks USDK22 row, #2 marks USDJ22K22 row)

2. Order#3 Sell USDJ22K22 = 1 contracts at -2.43 → Trading system match Order#2 and Order#3 = 1 contracts at -2.43

3. Trading Ticker will disseminate as follow,

Series	Volume	Price
USDJ22K22	1	-2.43
USDK22	1	29.89
USDJ22	1	32.32

- The disseminated ticker of USDK22 / USDJ22 calculated from Pricing Algorithm of Combination Order as seen that the price spread = 29.89 - 32.32 = **-2.43** which is equal to the matched price of USDJ22K22 **(-2.43)**

- In this case, ticker price of USDJ22 (32.32) is higher than the ceiling price (32.14)**.**