Text book
(Unofficial Translation)
Investment Product Series (P Series)
P 3 – Complex Products: Derivatives

For

- **Investment consultant using as a requirement for "Investment Consultant Complex Type 3"**

or

- **Investment consultant using as a requirement for "Investment Consultant Complex Type 1"**

Professional Education Department
Capital Market Education Group

Version 2

Note: This version provides the translation of reviewed content in Chapters 4, 5 especially topic 4.1 Futures Contract Markets Trading Mechanism, and updating rules and conditions of futures and options trading in Chapter 5.

The content will be effective for the examination, as prescribed by its learning objectives, since 1 August 2024 onwards

The amendment of Text Book (Unofficial Translation)
Investment Product Series (P Series)
P3 – Complex Products: Derivatives

Topics	Detail
Chapter 4: Trading Mechanism of Thailand Futures Exchange (TFEX)	● Update content in the topic 4.1 Futures Contract Markets Trading Mechanism in Futures Market
Chapter 5: Specifications and Conditions of Products in Thailand Futures Exchange	● Add new underlying assets, trading when the price change reaches the set level, update night session trading for Gold Online Futures, Gold-D Futures, Silver Futures, update speculative position limit, update futures trade reporting principles, etc.

Complex Products (Derivatives)

Required Readings:

1. **Knowledge about Capital Market Products: Complex Products (Derivatives)**

(Available in Thai only. See learning objectives and suggested readings as a guideline)

Chapter 1: Overview of Derivatives

Learning Objectives:

1. Explain significant basic characteristics of a futures contract.
2. Explain characteristics and distinguish types of a futures contract: forward commitments and contingent claims.
3. Distinguish types of an underlying asset in a futures market.
4. Explain basic characteristics of an underlying asset in a futures market.
5. Explain the definition, significance, and factors affecting to the value of each type of an underlying asset.
6. Explain usefulness, risks and cautions of utilising a futures contract.
7. Explain arbitrage and the law of one price.
8. Explain an exchange traded market and over-the-counter.
9. Explain the development of the Thai and overseas futures markets.
10. Explain trading transactions in a futures market in Thailand.
11. Explain the role, duties of concerned parties in a futures exchange market.
12. Link the relation of a clearing house with other counterparties.
13. Distinguish the types and characteristics of each type of investors in a futures market.

Chapter 2: Fundamental Knowledge of Futures

Learning Objectives:

1. Explain significant characteristics of a futures contract.
2. Distinguish differences of futures and forwards.
3. Explain the concept of futures price determination according to convergence of futures and spot price principle, and according to the cost of carry model.
4. Explain the concept of futures price determination in the case that an asset that an investor holds provides benefits.
5. Calculate returns from long and short positions in futures.
6. Explain the meaning of basis and spread of a futures contract.
7. Explain the situations of backwardation/ contango/ normal backwardation/ normal contango.
8. Explain the valuation principle for each type of a futures contract.
9. Explain hedging strategies for each type of a futures contract.

10. Explain speculative strategies for each type of a futures contract.
11. Explain arbitrage strategies for each type of a futures contract.

Chapter 3: Fundamental Knowledge of Option

Learning Objectives:

1. Explain a definition and characteristics of an option.
2. Distinguish a type of an option as put/call options, European, American, Pseudo-American options, an option of each type of an underlying asset.
3. Explain the moneyness of an option (in-the-money, at-the-money, out-of-the-money, near-the-money, nearest-the-money).
4. Explain the exercise of an option, offset the position of an option.
5. Explain how to calculate returns of an option as a long call, short call, long put, short put options.
6. Explain characteristics of an option on each type of an underlying asset.
7. Identify basic factors of price determination and explain factors affecting to the price determination.
8. Explain the upper bound and lower bound of an option contract.
9. Explain basic principles of price determination of an option.
10. Explain hedging strategies for option trading.
11. Explain speculative strategies for option trading.
12. Explain arbitrage strategies for option trading.

Suggested Readings (For Chapters 1, 2, 3):

- Fundamentals of futures and options markets (John C. Hull, 2005)
  - Chapter 1: Introduction
  - Chapter 2: Mechanics of Futures Markets
  - Chapter 3: Hedging Strategies Using Futures
  - Chapter 4: Interest Rates
  - Chapter 5: Determination of Forward and Futures Prices
  - Chapter 8: Mechanics of Options Markets
  - Chapter 9: Properties of Stock Option
  - Chapter 10: Trading Strategies Involving Options
  - Chapter 12: Valuing Stock Options: The Black-Scholes Model
- An introduction to derivatives and risk management (Don M. Chance, Robert Brooks, 2010)
  - Chapter 1: Introduction
  - Chapter 2: Structure of Options Markets
  - Chapter 3: Principles of Option Pricing
  - Chapter 5: Option Pricing Models
  - Chapter 6: Basic Option Strategies
  - Chapter 7: Advanced Option Strategies
  - Chapter 8: The Structure of Forward and Futures Markets
  - Chapter 9: Principles of Pricing Forwards, Futures, and Options on Futures
  - Chapter 10: Futures Arbitrage Strategies
  - Chapter 11: Forwards and Futures Hedging, Spread, and Target Strategies
  - Chapter 12: Swaps
- TFEX:
  - About TFEX: http://www.tfex.co.th/en/about/glance.html
  - TFEX membership: http://www.tfex.co.th/en/member/structure.html
- TCH:
  - About TCH: https://www.set.or.th/tch/en/about/about.html
  - TCH membership for the derivatives market: https://www.set.or.th/tch/en/derivatives/deriv_members.html
  - TCH derivatives risk management: https://www.set.or.th/tch/en/derivatives/deriv_risk.html

Note: An unofficial translation of the Thai text book: Knowledge about Capital Market Products: Complex Products (Derivatives), Chapters 4,5. The translation is intended to facilitate a reader to understand contents of the book but not to be used as a reference. TSI is not responsible for the correctness and completeness of the translation. Please refer to the Thai version for accuracy and reference.

Chapter 4: Trading Mechanism of Thailand Futures Exchange (TFEX)

(Translation available)

Learning Objectives:

1. Explain process and relation of concerned parties in futures trading.
2. Explain matching mechanism: electronic trading transaction and block trading transaction.
3. Explain the meaning of trading orders and be able to choose each type of trading order.
4. Explain the process of futures night trading.
5. Explain nature of each type of collaterals that a broker calls from a client.
6. Explain mark-to-the-market process.
7. Explain the process of margin call if margin is lower than maintenance margin.
8. Explain the process of settlement between a broker and a client.
9. Explain physical delivery and cash delivery.
10. Explain daily market quotation of the futures market.
11. Explain objectives, main points of market supervision of a futures business.
12. Explain sales conduct and servicing futures market products.
13. Explain guidelines of asset custody of a client and margin call for reducing credit risks from a client.
14. Explain the meaning and distinguish unfair actions about futures trading.
15. Explain penalties of disobey to the rules and regulation of unfair futures trading.

Chapter 4
Trading Mechanism in Futures Contract Market

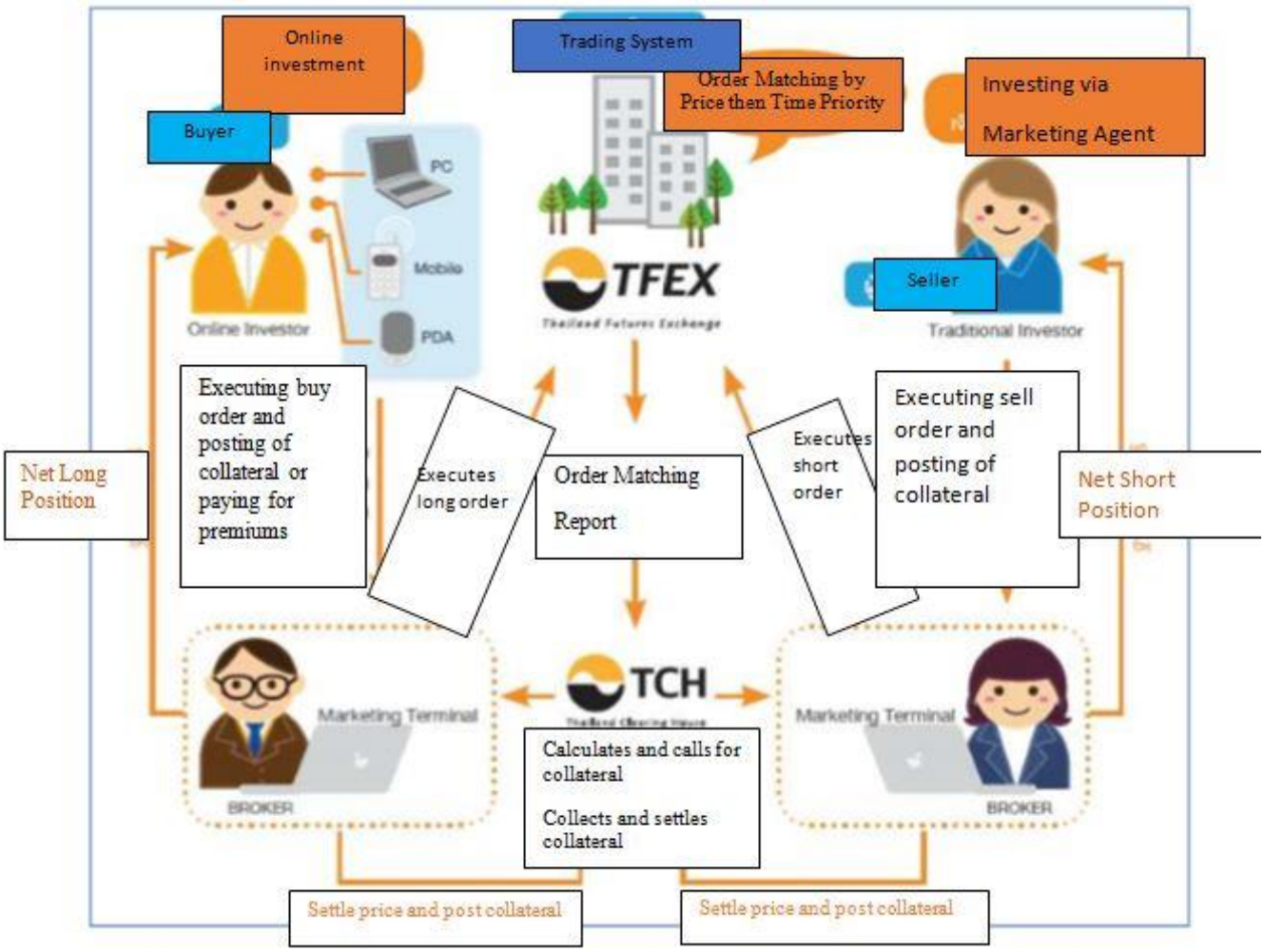
Trading of futures contract has the same trading methods and procedures as trading in stock exchanges. That is, investors may make a purchase order via brokerage's agents of the futures markets. The trading order will then be transmitted to the Thailand Futures Exchange PCL (TFEX) trading system which acts as a center of futures contract trading, using electronic trading systems. The TFEX trading system structure is effective and capable of supporting a variety of TFEX trading products. TFEX embraces world-class standards to provide fast and convenient links to the global capital markets.

4.1 Futures Contract Markets Trading Mechanism in Futures Contract Market

4.1.1 Trading Mechanism of Futures Contracts

In order to trade futures contracts in the futures market, investors who wish to enter the trade must make a trade order of futures contracts via a licensed member broker of the Thailand Futures Exchange PCL (TFEX). After a trading order is submitted, the broker will enter the transaction order into the futures contracts trading system, which is a centralized system where every purchase/sell order of all brokers is entered into. The matching of buy and sell orders are then made and pertinent information about each matched order is sent to the clearing house, Thailand Clearing House Co., Ltd. (TCH), to make either a price settlement or a physical delivery as stated in the contract specification.

Figure 4-1 Futures Contract Markets Trading Mechanism



4.1.2 Futures Contracts Trading Procedure

There are two futures contracts trading methods:

1. Automatic Order Matching (AOM) or Electronic Trading Transaction

This trading process is algorithmically done to determine how purchase/selling orders are matched and in what order they are filled based on the Price and Time Priority Principle. Buyers and sellers use this trading method to place their purchase or to arrange the selling done by their brokerage's agents. The orders are then sent to the futures contracts trading computerised systems (the SET CONNECT system), and the system will perform the Automated Order Matching (AOM) process while recording every purchase order (Bid) and the sell order (Offer). Trades are executed when the bid price is higher or equal to the offer price. The one who submits the bid becomes a buyer and the one who submits the offer is a seller. Bid orders with higher prices will be executed before those with lower prices. Correspondingly, offer orders with lower prices will be executed before the order of the offer with higher prices. In case the price of the

bid is equal to that of the offer, the software detects matches of bids and offers and fills orders according to the first-in, first-out (FIFO) method. There are 2 methods of the trade matching process depending on the Trading Sessions:

• *Pre-open Session or Call Market* is a type of trading that occurs before the regular Automatic Order Matching (AOM) trading hours. During this period, the system determines the opening price by calculating the price that would result in the highest trading volume, so the price will be used for order matching at the opening price.

• *Open Session or Continuous Order Matching* is a form of trade that takes place during the Automatic Order Matching (AOM) session whereby the recorded purchase or sell orders are continuously matched by the AOM system based on the Price and Time Priority principle.

During the Pre-open and the Open session, the matching of orders is managed under the principle of Price and Time Priority using the following criteria:

- The highest bid gets the first matching order. However, if there are more than one purchase orders entered into the system, the first bid to enter the system will get the matching priority.

- The lowest offer is executed first. In case of having more than one selling offers, the first offer to enter gets the first matching order.

2. Block Trading Transaction

Block Trading Transaction is another type of trading whereby buyers and sellers enter into a private negotiation for the transaction deal with the minimum trading volume which varies depending on different product categories. The brokerage's agent then records the block trading transaction and place the trade order to the futures trading system. The Block Trading Transaction creates opportunities as well as convenience for investors looking to ways of trading in large quantities with a specific trading counterparty with no effects on the market price. This can be done via a broker by submitting the details of the finalized trading contracts to the futures contracts trading system, the SET CONNECT system. The purchase orders are set with conditions and obligations on price together with the minimum trading volume.

Block Trading Transaction can be divided into two types:

1. Two-firm Transaction is a trading conducted by the brokers from both buyers and sellers. If the terms are met, the appointed brokers from both sides will enter the records of purchasing and selling orders into the trading system.

2. One-firm Transaction trading is a trading carried out by the same brokerage's agent. After having the clients agreed on the terms of trading, the broker can submit the record of purchase to the futures contract trading system, or the clients and broker agreed on the terms of trading, the broker will record the order into the system.

Once the trading contract is executed by the system, the details of the contracts are passed on to the Thailand Clearing House Co., Ltd. (TCH) to determine a settlement price according to profits or losses made daily, dealing with all transactions, with funds either being drawn from or added to the account based on the difference in the initial price and the settlement price. This will be carried out ONE day after the futures contracts are traded (T+1).

The clearing house plays an important role in the futures exchange, not only responsible for settling and clearing trade accounts, but also boosting confidence for participated traders by serving as brokers' counterparty. The clearing house also guarantees clearing and settlement of any stated amount for a concerned party to be delivered at a specified period. TCH has implemented a risk management system to decrease any damage caused by counterparties. As brokers are required to put down an initial margin with the clearing house, at the same time, clients must also leave initial margins with the brokers to reduce counterparty risks.

TCH requires all registered traders in futures markets, applied to both long and short positions, to acknowledge the gains or losses made from their position every day until the position is closed, the process of which is called mark-to-market (MTM). Each trading contract has its settlement price set by the futures market for each trading contract called '*daily settlement price*.' At the end of each trading day, profits and losses are calculated from the daily settlement price and transferred into the collateral holding account.

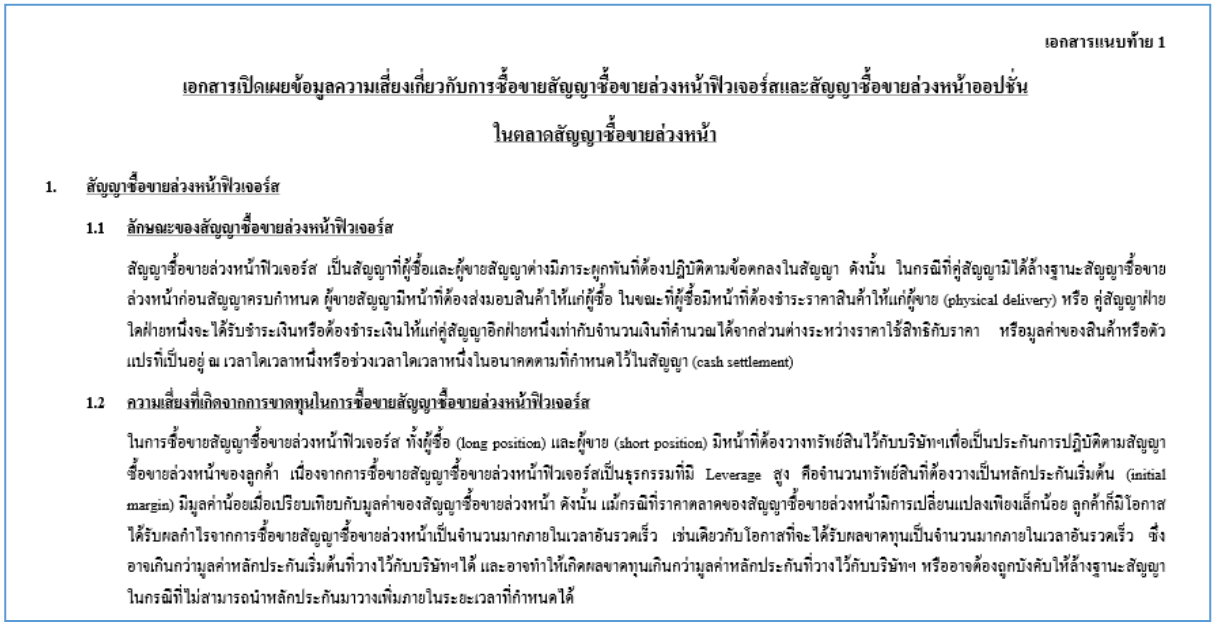
Opening of Accounts

Clients wishing to trade in the Thailand Futures Exchange PCL (TFEX) are required to do so by submitting trade orders via member firms of the TFEX. Clients must open a separate derivatives trading account apart from their equity trading account. A client who has already had an equity account with a brokerage firm is still required to open an additional derivative account to start his/her trading in the TFEX.

Each brokerage normally has its own forms for opening accounts to trade futures contracts apart from personal details which are required. Each firm also has an additional section regarding risk disclosure statement stated in the application form so that investors who wish to open accounts are able to familiarize themselves with this

particular circumstance of the futures exchange before they begin trading. Investment consultants or marketing agents of the brokers must go through the details with their respective clients regarding the risks of the contracts, specific conditions, such as initial collateral requirements, additional collateral requirements and closing of positions, etc., and must ensure that these are fully understood by the investors before opening an account (an extract of a risk disclosure document is shown in Figure 4-2).

Figure 4-2: Example of a risk disclosure document regarding trading in futures and options contracts in TFEX



เอกสารแนบท้าย 1

เอกสารเปิดเผยข้อมูลความเสี่ยงเกี่ยวกับการซื้อขายสัญญาซื้อขายล่วงหน้าฟิวเจอร์สและสัญญาซื้อขายล่วงหน้าออปชั่น

ในตลาดสัญญาซื้อขายล่วงหน้า

1. **สัญญาซื้อขายล่วงหน้าฟิวเจอร์ส**

1.1 ลักษณะของสัญญาซื้อขายล่วงหน้าฟิวเจอร์ส

สัญญาซื้อขายล่วงหน้าฟิวเจอร์ส เป็นสัญญาที่ผู้ซื้อและผู้ขายสัญญาต่างมีภาระผูกพันที่ต้องปฏิบัติตามข้อตกลงในสัญญา ดังนั้น ในกรณีที่คู่สัญญามิได้ล้างฐานะสัญญาซื้อขายล่วงหน้าก่อนสัญญาครบกำหนด ผู้ขายสัญญามีหน้าที่ต้องส่งมอบสินค้าให้แก่ผู้ซื้อ ในขณะที่ผู้ซื้อมีหน้าที่ต้องชำระราคาสินค้าให้แก่ผู้ขาย (physical delivery) หรือ คู่สัญญาฝ่ายใดฝ่ายหนึ่งจะได้รับชำระเงินหรือต้องชำระเงินให้แก่คู่สัญญาอีกฝ่ายหนึ่งเท่ากับจำนวนเงินที่คำนวณได้จากส่วนต่างระหว่างราคาใช้สิทธิกับราคา หรือมูลค่าของสินค้าหรือตัวแปรที่เป็นอยู่ ณ เวลาใดเวลาหนึ่งหรือช่วงเวลาใดเวลาหนึ่งในอนาคตตามที่กำหนดไว้ในสัญญา (cash settlement)

1.2 ความเสี่ยงที่เกิดจากการขาดทุนในการซื้อขายสัญญาซื้อขายล่วงหน้าฟิวเจอร์ส

ในการซื้อขายสัญญาซื้อขายล่วงหน้าฟิวเจอร์ส ทั้งผู้ซื้อ (long position) และผู้ขาย (short position) มีหน้าที่ต้องวางทรัพย์สินไว้กับบริษัทฯเพื่อเป็นประกันการปฏิบัติตามสัญญาซื้อขายล่วงหน้าของลูกค้า เนื่องจากการซื้อขายสัญญาซื้อขายล่วงหน้าฟิวเจอร์สเป็นธุรกรรมที่มี Leverage สูง คือจำนวนทรัพย์สินที่ต้องวางเป็นหลักประกันเริ่มต้น (initial margin) มีมูลค่าน้อยเมื่อเปรียบเทียบกับมูลค่าของสัญญาซื้อขายล่วงหน้า ดังนั้น แม้กรณีที่ราคาตลาดของสัญญาซื้อขายล่วงหน้ามีการเปลี่ยนแปลงเพียงเล็กน้อย ลูกค้าก็มีโอกาสได้รับผลกำไรจากการซื้อขายสัญญาซื้อขายล่วงหน้าเป็นจำนวนมากภายในเวลาอันรวดเร็ว เช่นเดียวกับโอกาสที่จะได้รับผลขาดทุนเป็นจำนวนมากภายในเวลาอันรวดเร็ว ซึ่งอาจเกินกว่ามูลค่าหลักประกันเริ่มต้นที่วางไว้กับบริษัทฯได้ และอาจทำให้เกิดผลขาดทุนเกินกว่ามูลค่าหลักประกันที่วางไว้กับบริษัทฯ หรืออาจต้องถูกบังคับให้ล้างฐานะสัญญาในกรณีที่ไม่สามารถนำหลักประกันมาวางเพิ่มภายในระยะเวลาที่กำหนดได้

Once an investor has submitted account opening application forms and risk assessment and / including additional documents required for the opening of accounts by the brokers as previously discussed, the broker will assess the suitability for the opening of accounts. If the application is approved, the broker will reply with a document confirming the opening of account, and trading on the account can be done immediately through the broker's agents. Should an investor choose to conduct his/her trading online, the investor will be provided an account number and a password to access the account. The investor can then log on and change a new password as they wish and select a trading PIN (Pin Number)[SIC] to be used for confirming each trade.

Types and conditions of trading order

In submission of a trade order, if an investor chooses to perform the trading via a marketing agent of the broker, the agent in charge of the account will specify the details according to the requirements of the investor, the details of which are:

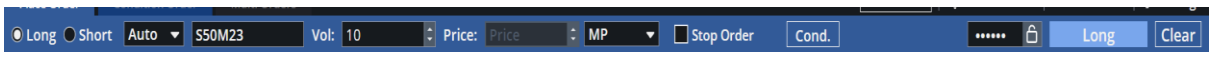
Table 4-1 Details of trading order

Information	Definition
Symbol (Symbol of trade)*	The specific name (symbol) of contract that the investor wishes to submit a trade order into the system
Buy or Sell*	The wish of investors to hold a position whether they want to Buy or have a Long position or to Sell or have a Short position in the specified symbol
Price*	The level or range of price in the trade, specificity of which depends on trade order types used
Quantity	The number of contracts required in this particular trade
Trading Account	The details of trade by the investor: Once the trade has matched, the details and status of trade will be recorded on the account in the format specified by the brokers.
Types of Trader	The officer must specify the type of investor who places an order to buy or sell. TFEX has categorised 4 types of traders as follows: 1. Principal: When trading according to the above order is for the broker's account. 2. Foreign: In the case that the client is an institutional or individual investor with nationalities other than Thai nationality. 3. Institution: For trading orders of clients who are mutual fund management companies, banks, finance companies, non-life insurance companies, life insurance companies, corporate juristic persons, private fund, government pension fund, and provident fund or other juristic persons with the same characteristics. 4. Customer: Individual Thai investors and juristic persons who do not belong to the 3 types of investors above.

Information	Definition
Opening or Closing Positions*	The details of trading must be specified as either: 1. Opening position or entering a position in the contract for the first time which makes the quantity of the position increase and needs the calculation of profits and losses performed daily, or 2. Closing position is an act of buying or selling to close the status of contract previously opened and held, reducing the quantity of position held and terminating any commitment and obligation in such contract.
Trader ID	The brokerage agent executing the trade order for the investor is required to register as a trader with TFEX. The agent can be identified in the boundary of the trade, e.g. Dxxx or D, followed by 4 letters or digits, etc.
Types and Condition of Trade*	Types of buying or selling orders and the condition that affect how trading is matched and the duration when trade orders remain in the system awaiting matching. Examples of trade orders are Market Order and Limit Order, and an example of trading condition is Day Order. Details are in the next section.

*Remarks * is the data that the investor must specify via the internet and specify further details in brokers' provided trading system.*

Figure 4-3: Information required from traders to execute trade orders via the Internet



From the above figure, investors want to place a buying order (Long) on SET50 Futures contract expiring in June 2023 (S50M23) in order to open a position of 10 contracts at MP price. Before submitting the order, the investor must correctly enter the pin number.

Investors can specify the types and conditions of the order to design a trading strategy. Currently, there are types and conditions of trading orders for investors to choose, as follows:

• Trading order types
    a) Limit Order means a trading order that specifies the bid/ask price.

b) Market Order means a trading order that specifies the bid/offer to be at the highest bid or the lowest ask prices, respectively.
In the case of placing the offer during the pre-opening period, the trading system will arrange for the bidding to be offered at a price higher than the highest bid price of 1 price range, or the highest ask price of 1 price range, whichever is higher. At the same time, the trading system will also arrange for the ask to be offered at a price lower than the lowest ask price of 1 price range, or the lowest bid price of 1 price range, whichever is lower.

c) Market-to-Limit Order means an order that specifies a bid at the lowest ask price or an ask at the highest bid price in only one price level, and if there are numbers of futures orders that cannot be matched, the trading system will place such amount as a bid or an ask at the last traded price.

d) Iceberg Order means a trading order that divides the orders into smaller amounts and gradually sends these amounts into the trading system automatically. Each bid/ask offer must have the minimum amount as specified by the futures market, and the subsequent bid/ask offer can only be made when the previous bid/ask offer has been matched in whole amount.

e) Combination Order means a trading order to bid and/or ask from 2 or more futures contracts where such bid and/or ask must be matched simultaneously, and the trading order can be to buy and/or sell with the same or different underlying products, and with the same or different settlement/delivery months. However, it must not be an order to buy/sell any futures contract (series) of the same type, with the same reference product, the same month of settlement or delivery, and/or the same exercise price of the same futures contract.

However, when matching a combination order, there may be cases where the Outright Series' trading price is outside the Daily Price Limit (depending on the current trading price). The display of such Outright Series' trading price will appear via real-time trading channel (ticker) only. It will not affect the Circuit Breaker function and will not be included in the display of price statistics such as open, high, low and last traded prices, etc.

In addition, investors can specify the conditions of the proposed trading order to specify the period during which the order will be ready for matching in the trading system after being sent to the system. At present, the futures market trading system supports the following order conditions:

a) **Day** means a trading bid/ask offer that specifies to take effect in the trading system within the business day in which it was offered.

b) **Good till Date** means a trading bid/ask offer that specifies to take effect in the trading system within the specified business day, or until such bid/ask offer is cancelled. The order shall stay in the system for a maximum of 255 days.

c) **Good till Cancel** means a trading bid/ask offer that specifies to take effect in the trading system until the end of the trading period on the last trading day of such futures contract, or until such bid/ask offer is cancelled. The order shall stay in the system for a maximum of 255 days.

d) **Fill and Kill** means a trading bid/ask offer that specifies immediate matching, and if the matching is not possible at all, or is partial, and with some remaining portions, the unmatched trades shall be cancelled immediately.

e) **Fill or Kill** means a trading bid/ask offer that specifies the matching immediately, and if all such trades cannot be matched according to the amount of the offer, the offer shall be cancelled immediately.

f) **Stop Limit Order** means a trading bid/ask offer based on the Limit Order, to take effect in the trading system when the last traded price or the highest bid price or the lowest ask price at that time moves to the specified price.

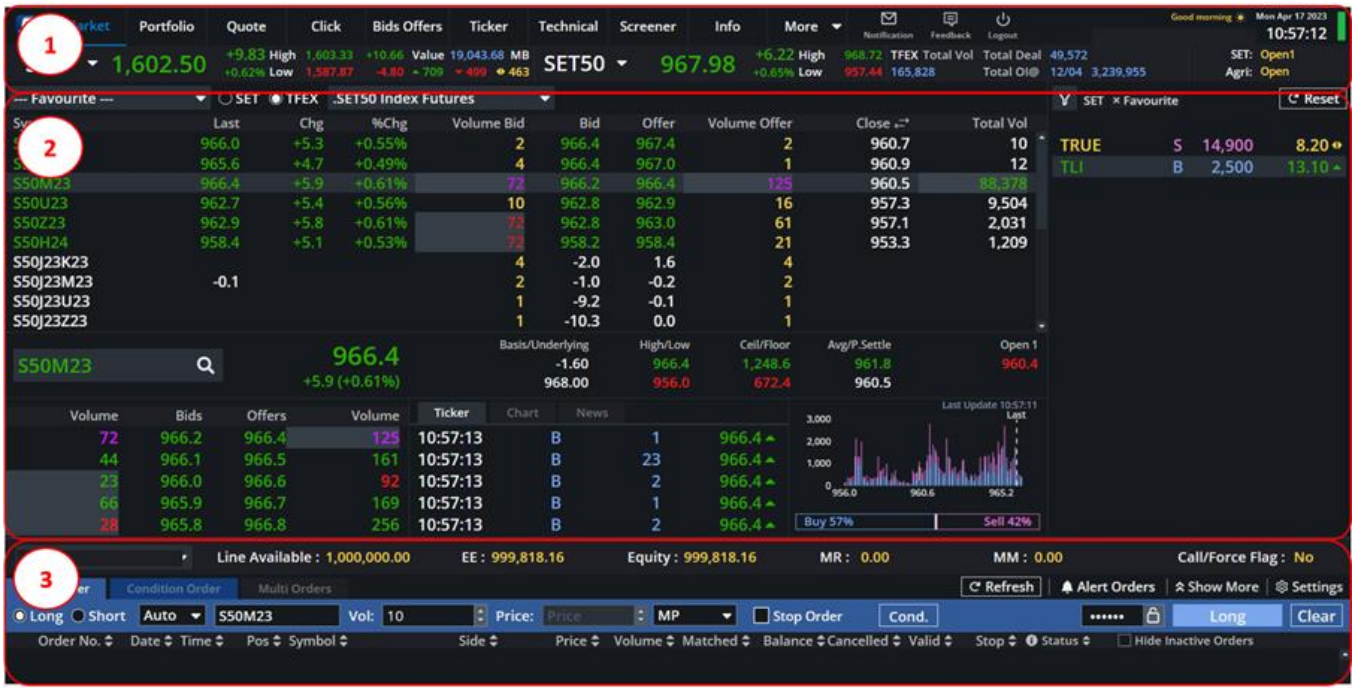
g) **Stop Order** means a trading bid/ask offer based on the Market Order, to take effect in the trading system when the last traded price or the highest bid price or the lowest ask price at that time moves to the specified price.

h) **Stop Market to Limit** means a trading bid/ask offer based on the Market to Limit Order, to take effect in the trading system when the last traded price or the highest bid price or the lowest ask price at that time moves to the specified price.

i) **Session State Order** means to set the system to send trading orders when entering the trading period as specified. For example, investors may place orders in the morning by specifying the command to take effect in the system (trigger) when entering the afternoon session, etc.

Examples on how to execute trade orders

Figure 4-4: Example of the online trading system developed to use in trading future contracts



In trading futures through a broker, an investor may make a trade order via the brokerage's agent or via the online derivatives trading system. The system has the following essential parts for an investor to make decision:

Part 1 displays details of the investment and indices for decision making.

Part 2 displays trading details whereby the user can choose to order futures contracts by the type of underlying or by series of which prices can be monitored in multiple series simultaneously.

Part 3 is for the submission of trade orders, e.g. the contract, the quantity, price and conditions of the aforementioned order, etc.

The trade order displays the basic information of investors, such as account number, name of account holder and credit limit that could be used to trade in futures, the available balance that could be used to submit a trade order, and total assets held by the investor. In addition, there is also a part that indicates the order to buy or sell whereby the investor could specify the investment strategy.

Step 1: Selection between buying (Long) and selling (Short) position and opening or closing of the position

Step 2: Identification of the details pertaining to the contract to sell or buy which are:

- Symbol of contract e.g. S50M23 (SET50 Futures expiring in June 2023), etc.
- The quantity of contracts required (In figure 4-5 indicating purchase of 10 contracts)
- Price offered to buy or sell

Figure 4-5: Example of an order to open position by specifying price required for buying

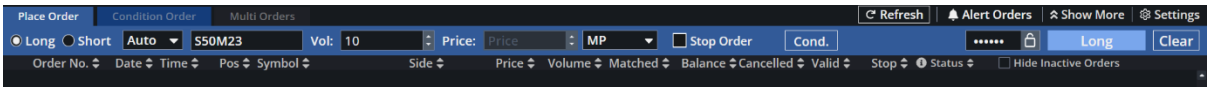
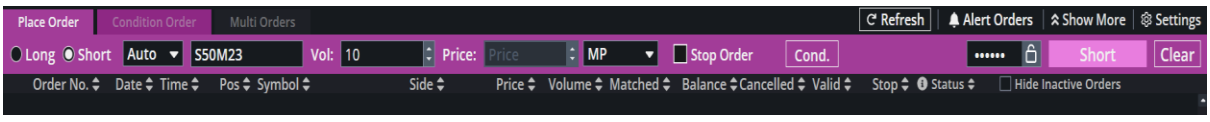


Figure 4-6: Example of an order to close position by specifying price offered to sell

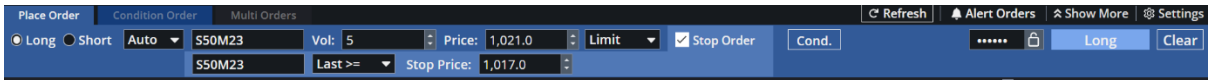


Step 3: Identification of types and conditions of the order in which the investor can select the “Cond.” to specify types and conditions of trading and needs to complete all information required.

Example of executing order to execute a Stop Order

The investor must specify Stop Condition as a condition for the trade order awaiting matching. The investor must specify the contract of which conditions will be used by the system. According to Figure 4-7, a stop order is executed to make a Long position for five S50M23 contracts at 1,021.0 points whereby the stop condition of the last price of the S50M23 must be more than or equal to 1,017.0 points.

Figure 4-7: Example of executing a Stop Order to buy SET50 Index Futures

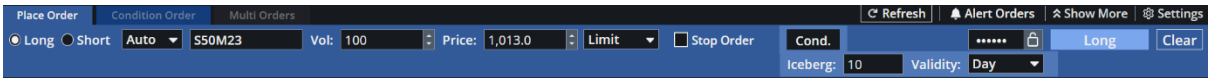


After the submission of orders, the trading system will wait until the condition specified in the Stop Condition is met. If the S50M23 is matched at 1,017.0 points or higher, the investor's order will be queued for matching. However, if the S50M23 is not matched at 1017.0 points or higher, the purchase order will not be executed as the Stop Condition has not been met.

Example of an Iceberg trade order

An investor can submit an order for large quantities by having the trading system to divide those quantities into small portions to be periodically queued for matching. For example, the investor requires an order to buy 100 contracts of the S50M23, wishing all the contracts not to appear in the system at once, the Iceberg order can be employed to only execute the trade order into the system in a predetermined quantity periodically. According to the example, the investor instructs the system to have ten contracts queued at a time. Once the investor confirms this purchase order, the system will record ten purchase orders at 1,013 points. After the execution of the order, the system will then queue the remaining order, the next ten contracts, in the previously specified quantity and will continue to do so until all the one-hundred contracts have been executed.

Figure 4-8: Example of an Iceberg order to trade SET50 Index Futures



Apart from this, in submission of a trade order, investors could select the type of order by themselves. They can specify the system to use a predetermined price or the market price. In addition, it is also possible to specify the condition to be executed immediately or in a specified time. The details of types and possible conditions are previously mentioned.

Figure 4-9: Selection of the type of trade order in the "Type" menu

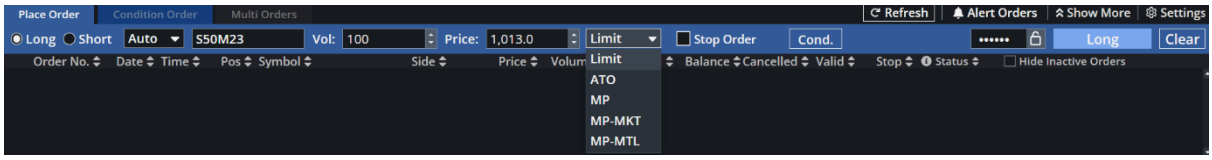
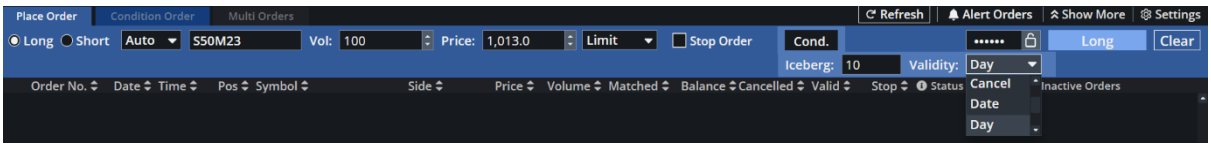


Figure 4-10: Selection of trading conditions in the "Validity" menu



4.1.3 Procedure to trade future contracts during night session

TFEX has extended trading hours for futures contracts with the underlying products of commodities or currencies that are generally traded in the global markets, such as gold, silver, currency, etc. As such, investors can have alternatives to adjust their positions or increase the opportunity to make profit when the price of such products changes after the global markets in different regions open, during their daytime but night-time in Thailand.

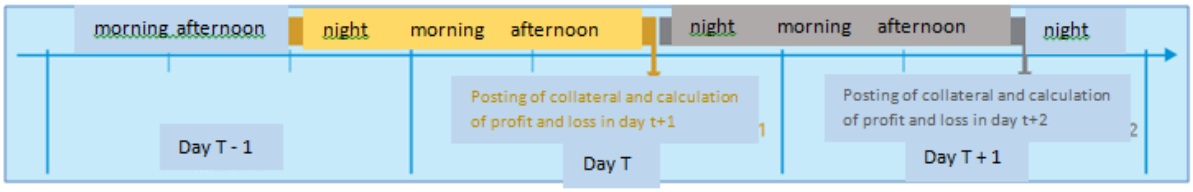
Currently, there are Gold Futures, Gold-D Futures, Gold Online, Silver Online Futures (precious metal group) and USD Futures, EUR/USD Futures, USD/JPY Futures (currency group) that are open for trading during the night-time or Night Session. There

is a pre-open session, just like trading in the daytime session. The night session's pre-open session is set to run from 6:45 p.m. to 6:50 p.m. (5 minutes in total), and enters the open session where the automated trading matching is held from 6:50 p.m. onwards. The Night Session for currency futures ends at 11:55 p.m., and for precious metals ends at 3:00 a.m. of the next day.

In order to submit trade orders via the internet during the Night Session, investors can make trade orders as per normal as they would during the Day Session. However, additional rules may apply should investors wish to submit their trade orders via brokerage's agents during the Night Session. The rules may vary upon each broker's discretion. Nevertheless, trades made during the Night Session are considered to be trades from the same accounts as in the Day Session. Hence, night trading allows investors to timely respond to fluctuations in commodity prices in the global markets.

According to TFEX, transactions during the Night Session are considered as transactions made in the next operating day. Therefore, trading statistics of the next operating day will include transactions that occur during the previous Night Session. As a result, profit and loss will be calculated and settled in the same manner as the next day's trade.

Figure 4-11: Settlement of orders made during the Night Session combined with normal trades in the next operating day's trading



As such, the boundaries for stock price movements during the night session will be under the same rules as used in next day's trading. Investors could analogously consider the Night Session trading as an earlier opening of next day's trading. The daily price limit, the maximum price in a particular trading day, will be adjusted according to the Daily Settlement Price announced by TFEX in the evening of the trading day. The Daily Settlement price will be used as the reference to set the minimum and maximum prices that the matching of trade orders could occur.

4.1.4 Collateral and Mark-to-Market

As trading in futures contracts, in TFEX, is essentially a process of negotiating the agreed price of the underlying for future transaction. Price negotiation takes place through the TFEX trading system. Trades in the futures market are categorized into two types, namely Future contracts and Option contracts.

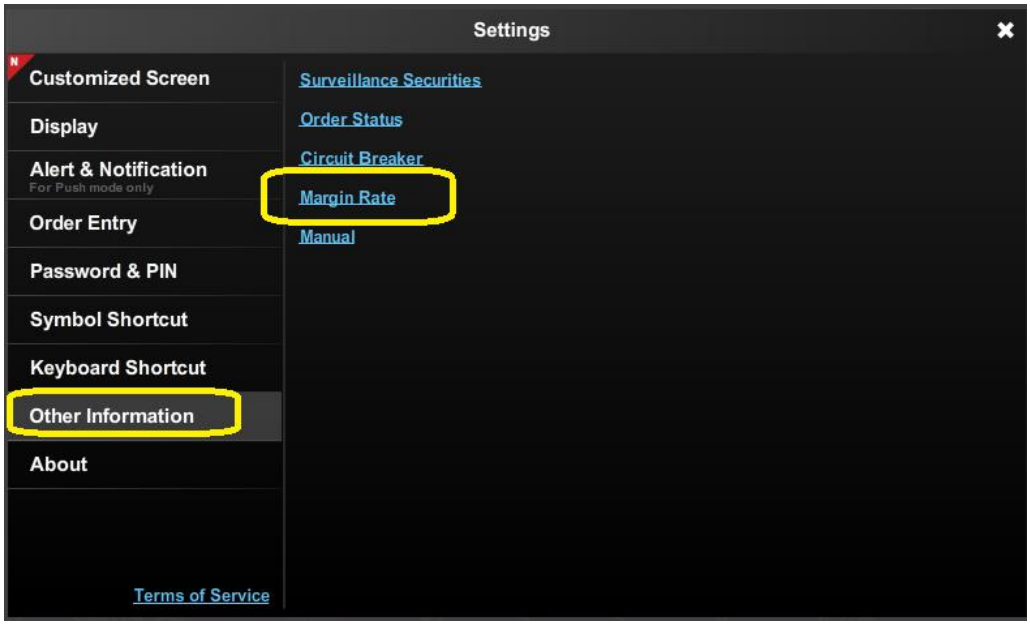
There are differences in each type of contract. Futures contract is considered to be a binding agreement between the buyer and the seller, where both parties are obliged to trade at a specified price. The agreement will still hold for both buyer and seller regardless of any future outcomes. Contract traders must bear the market risk, a risk to a portfolio from movements in underlying prices. Long position holders risk buying at a price higher than the market while short position holders risk selling at a price lower than the market. As a result, a counterparty may become less likely to fulfill its obligation and default on the contracts. In order to facilitate orderly trades in the Futures Exchange and to accommodate a large number of investors, parties entering into a trade must provide collateral to insure against market risk that exists before the maturity of contracts. The benchmark of collateral required as insurance for each type of futures contract will be determined by the clearing house based on respective risks. Brokers will use the benchmark in considering the amount of collateral required from the investors. The level of collateral posted by the clearing house could vary accordingly in order to compensate for any change in the associated risk of the contracts. Announcement will be made prior to any change comes into effect. To facilitate both buyer and seller, who could decide to unwind their position in the contract before the actual maturity, there will be adjustments of the values of the contracts based on market prices. Following the adjustments, profits and losses will be calculated and any open positions will be examined for collateral sufficiency.

On the contrary, option contracts grant the right to exercise to the buyer of the option in exchange for the premiums that the option seller receives. The premiums are paid the moment option contracts are entered into. Once the options reach maturity, the option buyer can choose whether to exercise the right as stipulated in the contract. Should the buyer choose to exercise the option, the seller of the option must oblige by the conditions as stipulated in the said option contract. After an option buyer pays for the premium, there will be no further obligation and he/she shall have the right to decide whether to exercise the option. The majority of option buyers generally chooses to exercise the options when exercising results in a profit for the buyers. Hence, option sellers bear the risk of the option being exercised and collateral is necessary in the

trades of option contracts. In particular, only option sellers are required to deposit collateral as they are the only source of counterparty risk.

In addition, the amount of collateral required from the option seller (short position) depends on the probability of the option being exercised in the future. The likelihood reflects upon the inherent risk of the option. Nevertheless, the calculation of the likelihood is complex. The likelihood varies according to a number of variables, such as the exercise price and the underlying variable (which in this case in the SET50 index). The data used to derive the probability and collateral requirement for each option in each series will be provided by the clearing house, in a file called 'Risk Parameter File' during trading hours in each day. With the calculation being complex, however, investors and investment consultants can find the collateral requirement for each series via an internet trading system such as the Streaming program (using menu in figure 4-13) or from the Marketing screen (in the part of Margin Simulation).

Figure 4-12: Example of the menu used to check the collateral requirement (Margin rates) for option and futures contracts in the Futures Exchange



The collateral requirement for the short positions in each option series appears as follows:

Figure 4-13: Example of collateral requirements for the short position in each option series

Instrument	Positions	IM	MM	FM	Price Scanning Range
SET50 Index Options					
S50U15C875	Short Options Outright	19,082.20	16,495.54	13,046.66	5,000
S50U15C900	Short Options Outright	14,860.80	12,220.56	8,700.24	5,000
S50U15C925	Short Options Outright	11,132.60	8,536.82	5,075.78	5,000
S50U15C950	Short Options Outright	6,764.40	5,239.08	3,205.32	5,000
S50U15C975	Short Options Outright	4,760.00	3,620.00	2,100.00	5,000
S50U15C1000	Short Options Outright	4,340.00	3,200.00	1,680.00	5,000
S50U15C1025	Short Options Outright	4,200.00	3,060.00	1,540.00	5,000
S50U15C1050	Short Options Outright	3,840.00	2,700.00	1,180.00	5,000
S50U15C1075	Short Options Outright	3,860.00	2,720.00	1,200.00	5,000
S50U15C1100	Short Options Outright	3,820.00	2,680.00	1,160.00	5,000
S50U15P875	Short Options Outright	4,640.00	3,500.00	1,980.00	5,000
S50U15P900	Short Options Outright	7,670.10	6,371.07	4,639.03	5,000
S50U15P925	Short Options Outright	11,316.60	9,655.62	7,440.98	5,000
S50U15P950	Short Options Outright	15,634.90	13,770.43	11,284.47	5,000
S50U15P975	Short Options Outright	20,273.90	18,289.73	15,644.17	5,000
S50U15P1000	Short Options Outright	25,069.50	23,014.65	20,274.85	5,000
S50U15P1025	Short Options Outright	29,735.70	26,940.99	23,214.71	5,000
S50U15P1050	Short Options Outright	34,740.20	31,914.14	28,146.06	5,000
S50U15P1075	Short Options Outright	39,734.40	36,898.08	33,116.32	5,000
S50U15P1100	Short Options Outright	44,723.90	41,884.73	38,099.17	5,000
S50Z15C875	Short Options Outright	19,291.70	16,930.19	13,781.51	5,000
S50Z15C900	Short Options Outright	16,368.80	13,546.16	9,782.64	5,000
S50Z15C925	Short Options Outright	11,638.30	9,838.81	7,439.49	5,000
S50Z15C950	Short Options Outright	8,556.40	7,099.48	5,156.92	5,000
S50Z15C975	Short Options Outright	6,852.10	5,222.47	3,049.63	5,000
S50Z15C1000	Short Options Outright	5,000.00	3,860.00	2,340.00	5,000
S50Z15C1025	Short Options Outright	4,580.00	3,440.00	1,920.00	5,000
S50Z15C1050	Short Options Outright	4,220.00	3,080.00	1,560.00	5,000
S50Z15P875	Short Options Outright	6,495.10	5,338.57	3,796.53	5,000
S50Z15P900	Short Options Outright	9,774.30	8,522.01	6,852.29	5,000
S50Z15P925	Short Options Outright	13,041.50	11,169.05	8,672.45	5,000
S50Z15P950	Short Options Outright	17,053.30	14,883.31	11,989.99	5,000
S50Z15P975	Short Options Outright	21,382.10	19,467.47	16,914.63	5,000
S50Z15P1000	Short Options Outright	26,004.20	23,428.94	19,995.26	5,000

The collateral deposit for futures trading begins when investor submits a trade order for futures contracts or an order to sell options. When underlying price/variable changes, investors must ensure that they meet the daily collateral requirement for their open position in futures contracts.

As such, brokers are responsible for the arrangement of collateral of their respective clients. Brokers will specify the requirements for each contract according to levels posted by the clearing house, which will be adjusted as appropriate according to each type of collateral level as follows:

- **Initial Collateral or Initial Margin**

Initial Collateral (Initial Margin -IM) is the amount that an investor must have before submitting a trade order. IM will be set individually for each contract. For example, the IM for SET50 Index Futures has been set to 11,400 THB for each contract. Should the investor hold less than that amount, he/she will not be able to submit any trade order in the SET50 Index Future contracts.

- **Maintenance Collateral or Maintenance Margin**

Maintenance Collateral (Maintenance Margin – MM) is the minimum amount of collateral that must be maintained in a margin account. Should the amount in a margin account drops below MM, the client will be required to deposit additional collateral in order to maintain their current futures positions (Margin Call).

- **Variation Collateral or Variation Margin**

Variation Collateral (Variation Margin) is the value of collateral that originates from a change in price of a futures contract. In other words, it is the collateral exchanged to cover the profits or losses associated with the change in price of the contracts. The rationale is to adjust the balance in the margin accounts so that they accurately reflect the price that fluctuates in each trading day. In order to avoid accumulation of losses from outstanding contract positions, profit and loss are realized daily. In practice, it is a calculation of profit or loss from having an open position in futures contracts at the end of each trading day (Mark-to-Market). The value adjustment is based on the daily Settlement Price. While the value adjustment may not be apparent to investors, it will be reflected in the remaining collateral balance in the margin account.

- **Market price adjustment (Mark to market)**

Following a trade in futures contracts, brokers will perform value adjustment calculation (Mark-to-Market) for every time there is a change in price of the futures contracts in order to ensure that collateral requirements are met. Broker will perform this process at least once a day. The settlement price used in each day shall be announced after that day's afternoon trading session is closed. Nevertheless, if the futures price is highly volatile and change significantly during the day, brokers may opt to perform the calculation during the day.

After the Mark-to-Market process, gains from the change in price will result in an equivalent increase of balance in the margin account and vice versa. Should the collateral balance in a margin account drops below the minimum level (MM), brokers shall call for additional collateral (margin call) and investors must deposit additional collateral so as the collateral level reaches the original level of Initial Margin.

An example of the Mark-to-Market process for ADVANC Futures contract

Suppose an investor buys an ADVANC Futures contract at the price of THB 205. Assume that the initial and maintenance margins for ADVANC Futures are THB 17,860 and 12,505, respectively. Hence, if the settlement price for each day is as follows, the resulting profit and loss and its effects on the collateral will be as follows:

- In Day 1 (T1), the investor buys an ADVANC Futures contract at THB 205 and at the end of the day the Daily Settlement Price is THB 206. The investor gains THB 1,000 and the collateral balance in the margin account increases by THB 1,000.
- In Day 2 (T2), the settlement price changes to THB 204, incurring a loss of THB 2,000 per contract [loss = (204-206) = THB 2 per share]. The amount is then deducted from the margin account.
- In Day 3 (T3), the settlement price continues to drop to THB 199, incurring a further loss of THB 5,000 [loss of (199-204) = THB 5 per share]. This leads to the remaining balance in the margin account being lower than the maintenance margin (MM) at THB 12,502. The investor is then issued a margin call to deposit additional collateral into the margin account in order to maintain the minimum collateral level at the initial margin of 17,860. In this case, the investor deposits an additional collateral of THB 6,000 and makes the balance of the margin account back to the initial margin of 17,860.
- Later on, should the investor closes his/her position by selling off ADVANC Futures at THB 207. The investor will receive the collateral amount of THB 25,860. This equals to the total collateral deposit of 23,860 (17,860+6,000) plus the THB 2,000 gained from the trade in the ADVANC Futures.

Table 4-2: Example of the Mark-to-Market process

	Transaction	Settlement Price	Profit/Loss	Collateral Posted	Balance in Account
1	Buying in ADVANC Futures at 205 THB per 1 contract			17,860	17,860
	Profit/loss adjustment	206	(206-205)*1,000 = +1,000		18,860
2	Profit/loss adjustment	204	(204-206)*1,000 = - 2,000		16,860
3	Profit/loss adjustment	199	(199-204)x1,000=-5,000		11,860
	Posting of additional collateral			6,000	17,860
4	Futures sold at THB 207	207	(207-199)x1,000=+8,000		25,860

In the case where investors are unable to maintain the collateral level above the maintenance margin (MM), brokers will make margin calls requiring investors to meet the collateral level of the Initial Margin (IM). The collateral must be deposited into account before 15.55 hrs of the next operating day after the margin call has been issued. Investors have a choice to either deposit additional collateral or to close the position on the outstanding contract to reduce exposure and bring the collateral balance to a sufficient level again.

However, the broker has set another level of collateral, which is the Force Closed level. For the case that the investor has not yet provided the additional collateral, while there has been an enormous price change and has caused additional losses until the value of the investor's existing collateral is reduced to below the force closed level. In this case, the broker will call for additional amount. However, if the additional money is not provided within the specified time, there will be a force closed. In this process, intraday prices will be considered in order to check the adequacy of the collateral in addition to using the mark-to-market method after the market closes.

In the case of calculating the collateral value of the Options, it will be considered as the overall group of contracts with the same underlying asset, for example, the SET50 Index will calculate the combined position of both SET50 Index Futures and SET50 Index Options under the principle of standardized portfolio analysis of risk (SPAN), which is used in foreign futures markets such as the Chicago Mercantile Exchange (CME) in the United States, etc. SPAN calculates the maximum probable risk under the assumption of changes in the underlying asset and the volatility of the underlying asset, which in this case is SET50 Index level and SET50 Index volatility. The risk rating will then be taken into consideration with existing assets. It can be seen that the Options collateral rate changes every day, both in terms of initial collateral and minimum margin according to the calculation results of SPAN on that day, unlike in the case of Futures of which the minimum margin level will be known clearly and constant until it changes as announced by the broker.

Furthermore, since the principles to determine the collateral requirement for options take into account the overall risks inherent in the whole portfolio, investors holding only in long positions in options could be required to deposit collateral if their overall portfolios consist of positions in the SET50 futures contract. This will be different from the case where portfolios consist only of option contracts. In this case, only short positions in option contracts will require collateral.

Additional Margin

Apart from the initial and maintenance margins that are required to trade in futures and option contracts, the Thailand Clearing House (TCH) could announce additional collateral requirement should there be events that increase risk in trading. Announcement about the additional collateral margin, along with the rationale, shall be clearly made. The collateral requirements will be reverted when the special events end. Currently, the Thailand Clearing House has three types of additional margins as follows:

1. **Super Margin** is the additional margin charged to be collected to cover the price fluctuations of futures contracts whose underlying assets are traded in foreign markets. The sum will be collected during the time that the futures market is closed periodically for 2 business days or more, during that time other markets that can affect the price of the underlying commodity may change to such an extent that it may pose a risk to those who hold such positions during the holidays. For example, the Super Margin announcement of Gold Futures and Currency Futures contracts during the Songkran

holidays due to the probable changes of the underlying price of such product in line with the global markets that are still open during the Songkran holidays, etc.

However, only those who still hold positions during the holidays will be collateralised. This includes those who trade on the last business day preceding that special holiday. When the market opens for trading as usual again, the original collateral rate will be used.

2. **Concentration Margin** is the additional collateral charged to cover the risk of concentration of outstanding futures positions. Thailand Clearing House (TCH) will calculate from the damage value that may occur from the broker not being able to clear the full amount of the outstanding position within 1 business day. In such cases, TCH will notify the broker to deposit additional margin within the next business day before the trading opens. The collateral will be calculated as a value that is comparable to the risk arising from the outstanding positions of all accounts handled by the broker, which are concentrated or have high ratio compared to the overall market position.
Once the position is relaxed or the risk has decreased, the collateral will be returned to the broker.

3. **Uncovered Risk Margin**: other than trade collateral, the clearing house will evaluate each broker's risk under various situations. This is to ensure that the clearing system is able to continue to function. The maximum risk under various situations will be evaluated and the clearing house will compare the risk with the broker's "security deposit." If the risk is found to exceed that of the broker's collateral, additional collateral is required from the broker and should the risk be reduced below that of the securities, the additional collateral will be returned.

4. **Spot-month Margin** is the collateral that is collected only for the holding of futures contracts with delivery of underlying products, such as RSS3 futures and RSS3D futures (natural rubber ribbed smoked sheet No.3), or GOLD-D futures (gold bullion), etc., which will be collateralised when reaching the period before the delivery of the products. TCH will collect this type of collateral additionally in order to ensure that the seller and buyer will not breach the contract as the delivery date is nearing.

4.1.5 Management of Collateral

As trades in futures and option contracts only require a relatively small amount of collateral, only about 10-25% of the traded value, but could yield full profit from the change in price similar to having the full amount traded. Due to the leveraging nature of the futures contracts, an investor wishing to trade in futures /options contracts must be able to appropriately manage the collateral asset. For example,

SET50 Index Futures contracts have the initial collateral at 9,500 THB per contract, while the value of contract of a SET50 Index Futures is worth approximately 200,000 THB per contract (presently SET50 Index is at 920 points, 1 point being 200 THB, calculated to be 184,000=920*200). This makes the investor being left with approximately 90% of the contract value that can be managed further. This includes holding the leftover money in reserve in case additional collateral is required.

Nevertheless, the investor may manage the collateral to improve the benefits of the leverage in the futures and options contracts. From the previous example, the investor has prepared the full amount equal to the value of the contract and holds that in reserve in the case of margin call. However, in practice, the investor has no need to hold the full amount in reserve, but may choose to reduce the reserve held by, for instance, 50% and takes further advantage of the leverage. Beginning with the initial capital of THB 200,000, instead of trading only one contract of SET50 Index Futures, the investor can hold two or three contracts through management of the collateral while holding the contracts. However, it is a common misunderstanding amongst the investors that the collateral is the cost of the trade until the collateral has run out. For example, with an initial capital of THB 200,000, an investor could deposit the amount as an initial collateral for 20 contracts.

Entering 20 contracts require an initial collateral of THB 190,000 (9,500 *20) leaving only 10,000 THB in reserve for the 20 futures contracts. Managing collateral in this way has a high degree of risk, as the investor hold a position in 20 contracts with overall value of the investment worth THB 4 million (200,000 * 20) while only having capital to respond to price fluctuation of THB 200,000 which could be insufficient if additional collateral is required.

Hence, apart from having strategies about direction of price movements, having a sound management collateral that is consistent with the investment strategy and time horizon is a critical point to consider when trading in the futures exchange.

4.1.6 Settlement and Delivery

- Clearing/Offsetting position before maturity

Once investors buy/sell future contracts, they can close the position of the contract immediately without the need to wait for the maturity date. As in the previous parts, outstanding contracts will have to be Marked-to-Market using the Daily Settlement Price in every operating day. Additionally, investors must ensure that they hold sufficient

amount of collateral above the maintenance margin or they risk being issued margin calls otherwise. However, if the investors wish to close or offset the contract before the maturity date, they can do so through the trading system by making trade in the opposite direction to the initial trade. Once the trade has matched through the system, final profits and losses for the particular contract will be calculated using the daily settlement price of the contract. The investors can then withdraw from the margin account since they are no longer under obligation by the contracts.

- Hold to maturity

For the investors that hold onto the contract until the maturity date and must make settlement or deliver under the contracted terms, the form of settlement and delivery falls under two main categories which are: Cash Settlement and Physical Delivery

Cash settlement: In this case, the futures market will calculate the final settlement price of the contract, and the clearing house will use that price to adjust the trader's contract position for the final time on the contract expiration date. Generally, for futures contracts there are clear regulations regarding how to specify the settlement price. The calculated price must reflect the market value of the underlying asset on the delivery date (reflecting ST). After that TCH will calculate the profit/loss in the contract of those who have outstanding positions.

The profit (loss) of the buyer's position is (last closing price - future price in pending position) x contract size x number of contracts. The profit (loss) of the seller is (future price in pending position - final settlement price) x contract size x number of contracts. Then both contract owners settle the difference with TCH in cash instead of actual delivery of the assets. Based on the contract, the person who loses must pay the loss, and the person who makes profit will receive the gain.

Physical delivery of the underlying asset: In general, futures contracts that specify physical delivery, the requirements in the futures contracts consist of delivery method, delivery period, and delivery conditions for buyers and sellers to comply with. If the buyers and sellers prefer other ways, they can use Alternative Delivery Procedure (ADP). As for the ADP delivery, the buyer and seller can discuss and agree on delivery details by themselves, which may be different from the terms of the contract. After that, they have to inform TCH to deliver the products according to the conditions that have been agreed upon.

In addition, there are also contracts that specify the delivery process as “Both Options,” meaning the requirements that allow the counterparty to have the choice of delivering whether to deliver the actual underlying products or deduct the difference by cash. In this "Both Options" method, on the maturity date specified in the futures contract, if the buyer and seller really prefer the actual underlying asset to be delivered, the buyer and seller must notify their intention to TCH in advance. If any buyer or seller has not submitted a request to TCH and/or has not been matched for delivery, TCH shall specify that the contract position be terminated for the payment balance to be processed via cash settlement.

4.1.7 Trading Report in the Futures Exchange

Trades in the TFEX will be published through the TFEX information publishing service in multiple formats. Investors can follow trades throughout the day from trading programs from the brokerage service, as well as keeping track of profit and loss in the portfolio using immediate market price.

The TFEX also publishes intra-day and end of day trading on the website of TFEX and companies in the Stock Exchange of Thailand group of companies, the report will contain price for each contract, volume and settlement price and open interest status for each contract in each evening after the day's afternoon trading.

For contracts traded during night session, the statistics will be collected for the next operating day. For Example, trade in Gold Futures and Currency Futures during Monday night will be collated in the statistics for Tuesday's trading (Next Operating Day) and is considered as Tuesday's trading.

Figure 4-14: Trading report in the TFEX

Price only Auto-Matching Delayed 15 minutes 17 Apr 2023 As of 11:00:02

Series	Contract Month	Open	High	Low	Bid	Offer	Last	Chg (%Chg)	Vol	OI	Prior SP	SP
SET50 Index Futures | Underlying Data								Trading date: 17 Apr 2023 TFEX Thailand Equity Index Market Status: Morning Session				
SET50 Index Futures												
S50J23	Apr 23	965.0	966.7	965.0	966.5	967.4	966.7	+6.0 (+0.62%)	11	209	960.70	-
S50K23	May 23	961.4	966.1	959.1	966.5	967.4	965.6	+4.7 (+0.49%)	12	231	960.90	-
S50M23	Jun 23	960.4	966.9	956.0	966.3	966.4	966.4	+5.9 (+0.61%)	93,319	399,984	960.50	-
S50U23	Sep 23	957.9	963.5	952.6	962.8	963.1	963.4	+6.1 (+0.64%)	9,796	42,445	957.30	-
S50Z23	Dec 23	957.0	963.6	952.6	963.0	963.3	963.6	+6.5 (+0.68%)	2,156	21,058	957.10	-
S50H24	Mar 24	953.8	958.9	949.9	958.3	958.8	958.7	+5.4 (+0.57%)	1,300	2,394	953.30	-
Total SET50 Index Futures									**106,594**	**466,321**		

- ***Report Summarizing Trades in Futures at End of Operating Day***

Table 4-4 shows an example of the trading report in the PTT futures at the end of an operating day. It can be seen that there are 4 series of PTT Futures with different symbol representing each series. For example, first 3 letters of PTTU15 refers to the underlying share and next 3 letter denoting month and year of maturity respectively. Open is the price of future contracts that is first traded on the day. High and low refer to the highest and lowest prices of the contract traded on the day. Volume is the quantity of the contracts traded during the day. Open interest shows

the quantity of contract that is outstanding, i.e. opened without being closed of the position. Lastly, daily settlement price shows the price that the clearing house uses to perform the mark-to-market process for members with open interest in the contracts and it is also the price used for daily settlement.

Table 4-3: Example of trading reports for PTT Futures as of September 2, 2015*

Reference underlying as at September 2, 2015 (End of day)

Underlying	Today's Closing	Yesterday's Closing	Change
PTT Stock	266.00	264.00	+2.00

**Referred and modified from http://www.tfex.co.th/tfex/dailyMarketReport.html?local-th_TH#SF*

Table 4-4: Example of trading reports for PTT Futures as of September 2, 2015*

Single Stock Futures Contract on PTT Stock data as of 2nd September BE2558 (end of day)

Symbol	Maturity Month	Open	High	Low	Volume	Open Interest **	Previous Day Settlement Price	Settlement Price
PTTU15	SEP 15	260.00	260.00	256.05	401	520	260.00	259.27
PTTZ15	DEC 15	262.40	263.00	259.00	97	441	264.99	262.30
PTTH16	MAR 16	255.50	255.50	255.50	1	48	267.31	257.00
PTTM16	JUN 16	264.00	264.71	264.00	40	16	269.99	264.70
Total					539	1025		

**Referred and modified from http://www.tfex.co.th/tfex/dailyMarketReport.html?local-th_TH#SF*
*** Open interest (OI) is the number of unfulfilled contracts that is in open position and not yet offset at present date.*

4.1.8 Futures Contracts Trading Mechanism

Submitting Order

General investors who wish to trade futures contracts are required to open an account with a broker. When trading futures contracts, investors must transfer the collateral margin to the opened account in the amount specified by the broker. In order to summit the order, the investors must indicate:

- Types of transactions, whether it is the transaction to sell or purchase futures contracts
- Objective(s), whether it is the transaction to open a new position or close an existing position
- Series of the futures
- Numbers of contracts
- Futures prices (In case of the market order, the order shall be matched with the order of the counterpart party offering the best price)
- Additional contract conditions (For example, if the order cannot be matched in a specified number, the order must be cancelled or partly matched, etc.)

Margin Deposit

Members of the Clearing House must open an account used to deposit margin with the Clearing House. After the trade deal has been agreed, both buyer and seller members are required to deposit the initial margin (IM) in the amount specified by the Clearing House by means of transferring cash to the margin account or high liquidity financial instrument such as Treasury Bill to the Clearing House. In general, the amount of the initial margin shall be per contract. For example, PTT Futures contract requires the initial margin of THB 11,900 per contract while SET50 Index Futures requires the initial margin of THB 5,000 per contract (Basically, the initial margin shall vary between 5-10% of the contract value)

Position Adjustment (Mark-to-Market) in Futures Contracts

By the end of each trading day, the Clearing House makes a position adjustment in the futures contracts of each member so that it could reflect the changing value of the futures contract daily (Mark-to-Market). This adjustment helps members realize their profit and loss from the contract. In case of loss, the Clearing House shall deduct the amount equal to the realized loss from the margin account, and members shall receive a margin call to deposit additional margin or variation margin in order to bring the balance in the

margin account back to the level of the initial margin. If a member fails to provide variation margin within a specified period of time, the Clearing House shall forcefully close the position in that futures contract. However, in case of profit, the Clearing House shall transfer the profit gained to the margin account of the member and the amount can then be withdrawn from the member's margin account.

If a broker as a member of the Clearing House trades futures on behalf of a client, the broker must request the client to open a margin account and deposit the collateral margin before submitting any trade order. When the order is matched, the broker is required to transfer the deposited margin to the Clearing House. In this case, similar to the Clearing House, the broker shall calculate the initial margin and may ask the client to deposit additional margin as deemed appropriate. However, the minimum amount of margin required by the broker is always higher than that of the margin demanded by the Clearing House. In addition, the broker shall require the client to place the maintenance margin or the minimum margin which must be maintained in the client's account. Under normal circumstances, the maintenance margin required from clients by brokers is lower than the initial margin (MM < IM) but higher than the amount of initial margin the Clearing House requests from the members. If the client's balance margin is lower than the level of the maintenance margin, the broker shall require the client to deposit additional margin to bring the balance of the margin account back to the level of the initial margin. If the client fails to provide additional margin within the prescribed period of time, the broker shall immediately proceed with any acts to close that client's position.

Example: The Position Adjustment Process (Mark-to-Market) for Investors Holding a long futures position.

An investor, holding a long position, enters a position by buying 10 futures contracts of XYZ shares (THB 100 / contract) with the contract size of 1 share/contract, the initial margin of THB 5 /contract, and the maintenance margin of THB 3 /contract. Before submitting the trade order, the investor is required to deposit THB 50 (5 x 10) in the margin account opened with the broker. Table 4-5 depicts the movement in the investor's margin account six days after entering the position.

Table 4-5: Example of Position Adjustment in futures contracts for investors holding a long futures position

Day	Initial Balance in the Account	Closing Price of Futures	Changing	Profit / Loss (+ / -)	Total Balance	Additional Margin
0		100.00			50.00	0.00
1	50.00	99.20	-0.80	-8.00	42.00	0.00
2	42.00	96.00	-3.20	-32.00	10.00	40.00
3	50.00	101.00	5.00	50.00	100.00	0.00
4	100.00	103.50	2.50	25.00	125.00	0.00
5	125.00	103.00	-0.50	-5.00	120.00	0.00
6	120.00	104.00	1.00	10.00	130.00	0.00

The client enters the position on Day 0. Hence, the total balance for Day 0 is THB 50 at the end of the business day (the first day of entering the position). Suppose, on Day 1, there is a decrease in the futures price and the market determines the daily settlement price at THB 99.20 which reflects the futures price when the market is closed. The daily settlement price shall be used to make a position adjustment (Mark-to-Market). Also, the investor shall realize profit and loss from this settlement price (as if the investor closes the position at such a price) and his/her position shall be adjusted according to this new price. Therefore, from this example, since the daily settlement price is lower than the previous contracts value, the investor shall incur a loss compared against the new price (since the purchase price is higher than the latest market price). The investor must realize a loss of (100 – 99.20) x 10 = THB 8. From such event, the broker shall deduct THB 8 from the client's margin account, resulting in the balance of the account at the end of the first day at THB 42. Nevertheless, since the balance of the account is still higher than the maintenance margin, the broker shall not require the investor to deposit additional margin. Then, the position of the investor shall be adjusted from purchasing THB 100 to 99.20 /share.

At the beginning of Day 2, the investor shall start off with a long position at THB 99.20 for 10 contracts and the balance in the margin account at 42 THB. If the investor opens the position till the market closes and the futures price decreases further and the market determines the Daily Settlement Price at 96.00 THB, then, the investor holding the long position shall incur a loss of (99.20 – 96.00) x 10 = THB 32, resulting in the balance of the margin account at the end of the business day at THB 10 which is lower than the

maintenance margin. From such event, the broker shall request the investor to deposit additional margin (THB 40) in order to bring the balance in the margin account back to THB 50. If the investor fails to do so within the prescribed period, the broker shall close the position in futures contracts of that investor by selling the futures contract. If the investor is able to deposit THB 32 within the prescribed period, the position shall be adjusted to purchasing at THB 96.00 /share.

On Day 3, the investor still opens the position, and the futures price moves up compared with the previous day. The investor shall gain profit for (101.00 – 96.00) x 10 = THB 50. This amount shall be transferred to the investor's account. The balance of the account shall be THB 100. In the case that the balance of the margin account is higher than the maintenance margin, the investor can choose to withdraw the excess amount from the margin account (optional).

From Table 4-5, if the investor opens the position till the sixth day and then offsets to close the position before the contract expires and if, on the sixth day, the investor closes the position by selling 10 existing futures contracts at THB 104 /share, the investor shall gain profit (loss) at (104 – 103) x 10 = THB 10. The broker shall transfer this amount to the investor's account and return all the total balances to the investor. Therefore, the investor shall receive THB 130. This profit (THB 10) comes from the long position during the fifth and sixth days only. The retained profit from the first day to the day of closing position shall be THB 40, calculated from the price difference of the opening and closing price (104 – 100) x 10 = THB40 or the price difference of the returned money in the account and the total money the investor has transferred to the account 130 – (50 + 40) = THB 40.

This example also presents one of the differences between futures and forwards in the sense that, for futures, profit and loss is realized at the end of each business day until the investor decides to close the position, resulting in lower risks for the Clearing House and the broker since profit and loss is not retained. If the investor fails to place additional margin within a described period, the level of damage shall be minimal and within a single day price movement boundary. On the other hand, for forwards, profit and loss is realized only when the position is closed which means profit or loss is retained until the closing of position.

Example: The Position Adjustment Process (Mark-to-Market) for investors holding a short futures position

From the information in Table 4-6, imagine that the investor enters the position by selling futures contracts. Table 4-6 below shows the position adjustment. From this example, the investor shall be in loss from the sell position for (100 – 104) x 10 = THB 40 or 45 – (50 + 35) = THB 40.

Table 4-6: Example of Position Adjustment for investors holding a short futures position

Date	Initial Balance in the Account	Closing Price of Futures	Changing	Profit / Loss (+ / -)	Total Balance	Additional Margin
0		100.00			50.00	0.00
1	50.00	99.20	- 0.80	8.00	58.00	0.00
2	58.00	96.00	- 3.20	32.00	90.00	0.00
3	90.00	101.00	5.00	- 50.00	40.00	0.00
4	40.00	103.50	2.50	- 25.00	15.00	35.00
5	50.00	103.00	- 0.50	5.00	55.00	0.00
6	55.00	104.00	1.00	- 10.00	45.00	0.00

Some remarks for margin deposit

- An investor holding outstanding position in futures contracts is required to maintain balance in the margin account over a specific period. If the investor fails to do so, the position shall be closed. After depositing additional margin, the investor may once again be required to deposit more margin due to further changes in futures prices. This can be calculated using the formula:

Change in price = (Initial margin – Maintenance margin)/Contract size

From the Examples, if the futures price changes by more than (5 – 3)/1 = THB 2 after the investor balances the margin account, the investor holding either long or short

positions shall be required to deposit additional margin depending on the direction of the change in price.

- The amount of margin the broker requires from each investor is different depending on the purpose of the investor. For instance, investors who hold positions for hedging purposes may be requested lower collateral amount than those who hold positions for speculative reasons.
- The broker can also demand the intraday margin which is lower in value compared to the maintenance margin. During the business day, the futures price may largely fluctuate which makes the balance of the margin account lower than the intraday margin. From this event, in order to lower risks, brokers may demand investors to deposit additional margin during the business day.
- Depositing additional margin and adjusting an outstanding position at the end of every business day (mark to market) can reduce the risk of investors not honouring the obligation of the contracts. This is because the Clearing House shall be in loss only when the loss value during a business day is higher than the balance of the investor's margin account. This shall occur when there is a large fluctuation in the asset price. However, if the investor fails to deposit addition margin within the prescribed time, the margin shall be used to compensate for the loss.

Closing out a futures position

Generally, there are two ways of closing a futures position: 1) closing position before the settlement date by means of offsetting transaction and 2) opening position until the contract expires and goes through the settlement process. The settlement process itself can be classified into two types: physical delivery and cash settlement.

Offsetting Transaction before the Expiration Date

Investors holding an outstanding position are able to cancel or close their position before the settlement date by offsetting transaction which means purchasing or selling the existing futures contracts in the opposite direction to the outstanding position. For example, the investor holding a long position is able to offset the position by selling the

existing contracts while the investor holding a short position is able to offset the position by purchasing the existing contracts. After the realization of outstanding position offsetting, the final profit and loss from the investor's position is calculated, and all the balance left in the margin account shall be given to the investor. The profit and loss from closing the position is calculated using this formula:

Profit (Loss) = (Price of the seller position – Price of the buyer position) x Contract size x Numbers of contracts

Therefore, the investor holding a buyer position shall gain profit from closing the position if the futures price at that moment is higher than the existing one, but is in loss if the futures price is lower. The investor holding a seller position shall gain profit from closing the position if the futures price at that moment is lower than the existing one, but shall lose profit if the futures price is higher.

Example: On January 2nd, Somchai sells two March futures contracts of XYZ shares at THB 30 /share. Each contract consists of 1,000 shares. On January 10th, Somchai desires to close the position, so he purchases two March futures contracts of XYZ shares. The futures price at that moment is THB 33 /share. Therefore, on January 10th, the outstanding seller position and the buyer position Somchai has just opened shall be offset. From this example, closing the position causes Somchai to incur a loss of THB 6,000 or (30-33) x 1,000 x 2 = -6,000. After the broker has calculated all the final profit and loss, the leftover balance in the margin account shall be transferred to Somchai's account.

Table 4-7 shows the offsetting between Somchai's long and short positions. From such example, it can be noticed that the obligation with regards to the underlying assets is offset, but the obligation with regards to cash is -6,000. Therefore, it is essential that the investor realizes profit and loss on the day of closing the position. In addition, the investor's obligation to the broker and the Clearing House is considered terminated.

Table 4-7 An example of position offsetting for the investor holding seller position

Position in Futures	Investor's obligation to the Clearing House	
	January 2nd	Delivery Date
Sell 2 futures of XYZ stock at 30 THB/share on January 2nd		Receive 60,000 THB
Purchase 2 futures of XYZ stock at 33/share on January 10th		Pay 66,000 THB
		- 6,000 THB

4.1.9 Options Trading Process in the Organized Exchange

Options trading markets can be classified into two types: 1) over-the-counter market or OTC and 2) organized exchange market. An options contract of the OTC is an agreement between two parties. The contract's details and conditions are customized based upon the satisfaction of both parties (customized contract). Each options contract contains different conditions and is not standardized. On the other hand, an options contract of the organized Exchange (exchange-traded options) is standardized (standardized contract) by the exchange. The buyer and seller are allowed to negotiate only on premium and numbers of contracts.

Table 4-8 The Specification of SET50 Index Options Proposed by Thailand Futures Exchange (TFEX)

Underlying Assets	SET50 Index calculated and disseminated by the Stock Exchange of Thailand
Ticker Symbol	S50C: Call Options on SET50 Index S50P: Put Options on SET50 Index
Contract Multiplier	THB 200 / index point
Settlement Month	Three nearest consecutive months and the last month of the next quarter
Tick size	0.1 point (equivalent to THB 20 / contract)
Daily Price Limit	±30% of the closing price of the latest SET 50
Exercise Style	European
Exercise Price	- The exercise price interval is 25 points - At the beginning of every business day, the options series consist of 1 series of At-the-money at least 2 series of In-the-money and Out-of-the-money
Trading Hours	Pre-open: 09.15 a.m. - 09.45 a.m. Morning session: 09.45 a.m. – 12.30 p.m. Pre-open: 1.45 p.m. – 2.15 p.m. Afternoon session: 2.15 p.m. – 4.55 p.m.
Speculative Position Limit	A net position of not over 100,000 in SET50 Index Futures and SET50 Index Options in any contract month of SET50 Index Futures and SET50 Index Options
Last Trading Day	The business day prior to the final business day of the contract month (Trading hours end at 4.30 pm.)

Final Settlement Price	The average value of SET50 Index from the last trading day, calculated from SET50 Index within the last 15 minutes and the closing price index value of that business day. The value shall be rounded to two decimal points with the three highest and three lowest values deleted.
Settlement Method	Cash Settlement
Exchange Fee	THB 5 /contract collected from both purchasers and sellers
Brokerage Commission	Freely negotiable

SET50 Index[1] is an underlying asset of SET50 Index Options. It is an index representing top 50 listed common share indexes of the Stock Exchange of Thailand in terms of market value and liquidity. The SET50 Index price is in point, as well as the exercise price and premium value of SET50 Index Options.

There are four components in a ticker symbol representing a series of SET50 Index Options including an underlying asset, an expiration month, exercise style, and exercise price. For example, S50U22C1000 refers to an options contract on SET50 Index with an expiration date in September 2022 and exercise price of 1,000 points. ‘S50’ is an abbreviation for underlying asset, U22 stands for a settlement month, C stands for call options (and P for put options), and 1000 is the exercise price.

A multiplier refers to a number used to convert price index into money. For example, if S50M23P1100 is sold at 30 points, the premium of such contract shall be 30 x 200 = THB 6,000/ contract, and the purchaser shall receive 1,100/ 200 = THB 220,000 as the SET50 Index points as a compensation for paying SET50 Index at a market price in the future (S_T * 200 THB)

[1] Please see chapter 1 for more details.

An expiration month of SET50 Index Options is specified in a form of a settlement month. The expiration date of SET50 Index Option is on the business day prior to the last day of the expiration month. In trading, contracts from 4 settlement months shall be traded. For example, in early September 2022, there are U22, V22, X22 (three nearest consecutive months) and Z22 (the last month of the next quarter) contracts for trading. When U22 expires, H23 shall replace, resulting in V14, X14, Z14 (three nearest consecutive months) and H15 (the last month of the next quarter). When V22 expires, F15 shall replace, resulting in X22, Z22, F23 (3 nearest consecutive months) and H23 (the last month of the next quarterly).

A minimum tick size is the minimum price movement interval in which the buyer and seller can propose in a trading order. The price in this sense refers to option premium. From the table, TFEX has determined the interval of premium for SET50 Index Options trading as a multiplying value of 0.1 point. That is, the proposed price shall be rounded to only one decimal point, and a multiplying value of 0.1 if there is a change. Therefore, the cost for a change in a premium price interval or 1 tick size is 0.1 x 200 = THB 20 / contract

A price limit is a limit up and a limit down which the market allows traders to perform a transaction on a business day. The price in this sense refers to options premium which is determined as a + or – value of a closing price from the prior business day. The price limit functions as a tool the market uses to prevent price fluctuation.

The exercise style for SET50 Index Options is the European Options style. Buyers are able to exercise options only at its expiration date by 4.30 p.m. of the business day prior to the last day of the expiration month. The investor holding buyer position shall decide whether to exercise the options after the specified time or not. On the expiration date (S_T), TFEX shall announce SET50 Index number used as a final settlement price. This price is calculated from SET50 Index on the expiration date.

For the exercise price of SET50 Index Options, TFEX shall trade options with at least 5 different exercise prices in any settlement month with a price interval of 25 points. In addition, there shall be at least two contracts of which exercise prices are higher and lower than SET50 Index values. If, in the future, there is a change in SET50 Index, TFEX shall propose options with other exercise prices to the Exchange market. It should be

noted that, in trading options, buyers and sellers must select a series of options before negotiating premium by submitting a trading order to the Exchange.

A position limit refers to the highest number of options an investor is allowed to hold. This position limit can prevent investors from speculating or influencing the price. In addition, it can reduce any trader from the over limit risks that may ruin the whole market.

The settlement method for SET50 Index Options is a cash settlement. The calculation method shall be explained in the next topic.

Table 4-9 shows a summary of SET50 Index Options (S50U2014) trading on September 23th 20xx.

Table 4-9: Example of SET50 Index Options Trading on September 23, 20xx*

Underlying asset, information received on September 23, 20xx (at the end of the business day)

Underlying Asset	Today Closing Price	Yesterday Closing Price	Changing
SET50 Index	1,062.16	1,061.18	+ 0.98

SET50 Index Option on September 20xx, information received on September 23th, 20xx (at the end of the business day)

Size	Open Interest	Options Price	Options Price from the Previous day	Changing	Exercise Price	Size	Open Interest**	Options Price	Options Price from the Previous day	Changing
SET50 Index Call Options						Set50 Index Put Options				
2	41	175.00	185.90	- 10.9	875	-	19	0.10	0.10	0.0
-	148	162.00	160.90	1.1	900	-	52	0.10	0.10	0.0
-	57	137.00	136.00	1.0	925	-	103	0.10	0.10	0.0
-	94	112.00	111.00	1.0	950	2	472	0.10	0.10	0.0
-	224	87.00	86.70	0.3	975	-	451	0.10	0.10	0.0
6	670	63.90	64.50	- 0.6	1000	-	957	0.10	0.10	0.0
19	861	38.90	41.00	- 2.1	1025	21	1018	0.90	0.10	0.8
57	857	14.90	15.50	- 0.6	1050	31	990	2.10	3.30	-1.2
168	536	2.00	2.70	- 0.7	1075	12	453	15.10	13.60	1.5
-	5	0.10	0.10	0.0	1100	2	45	38.00	39.00	-1.0

**Adjusted from http://www.tfex.co.th/th/products/set50options-mktdata.html*
***Open Interest (OI) refers to a number of opened contracts which have not been closed*.

The options trading in an exchange market such as TFEX is similar to futures trading. That is, an investor is required to open an account with a broker who is a member of the futures market. To submit a trade order, the investor must specify the series of options to be invested in (types of underlying asset, options types, expiration month, and exercise price), position, and premium price. If the investor wants to hold a long position, the broker shall ask the investor to deposit cash for the premium. On the other hand, for a seller position, the investor is required to deposit margin in the amount specified by the Clearing House before submitting a trade order. When trading, the options premium shall be immediately transferred from the purchaser's account to the seller's account. In such event, the purchaser's position is not adjusted (market-to-market), and the investor is not required to deposit additional collateral to the account. However, for the seller, the position shall be adjusted at the end of every business day (market-to-market) and the balance in the account must be balanced at the level specified by the Clearing House. These obligations shall be cleared off when the position is closed by means of 1) offsetting, 2) options expiring, and 3) exercising options

After the buyer has paid the premium, the seller's risks from buyer's defaults are eliminated since there is no future obligation to the seller. However, the buyer is risky from the seller's defaults since there is a future obligation to the buyer. Consequently, in the future, if the buyer needs to exercise the options, the seller may not abide by the contract. This is why the seller is required to deposit margin[2].

Highly standardized options contracts may cause the investor difficulty in selecting the most appropriate contract, yet there are some advantages since the negotiation for opening or closing- a position can be conveniently done. This is because each investor has a good and throughout understanding about the contract. Also, in contract negotiating, only the price and numbers of contracts

[2] The Options purchaser shall lose highest profit not more than the premium value when exercising Options since the purchaser has already paid the seller money on the trading day. The seller, therefore, has no risk from being cheated or postponed while the purchaser has a high risk and may lose opportunity to earn profit from exercising the Options in the future.

shall be negotiated. In addition, closing the position can be completed by means of offsetting. Therefore, the Exchange tends to play a part in the reduction of searching and negotiation costs and the increase in contract liquidity.

Options Trading for Offsetting

In options trading, the Clearing House interposes itself between buyers and sellers as a legal counter party which means that the contracts of the two parties are not, in fact, directly matched. This is called 'Novation' and there are two benefits related to such process, 1) there is no risk from the contract partner defaults, so a financial reliability verification of the contract partner is unnecessary, and 2) buyers and sellers are able to offset the positions without an agreement from the contract partner. The position offsetting refers to the transaction in an opposite direction to the position needed to be closed[3]. Profit (loss) from the position closed before the expiration date can be calculated from (Options selling price – Options price) x Index multiplier.

Example: Sompong has opened a seller position of S50H22C900 for 2 contracts with the premium of 20 points. After a month passes, Sompong wants to close such position before the expiration date which can be done by submitting purchase order for the 2 contracts of S50H22C900. Imagine that Sompong's purchase order has been matched with Amorn's selling order with the premium of 25 points, and the profit from closing the position shall be realized at (20 – 25) x 200 x 2 = THB -2,000. This means Sompong is in loss caused by closing the position. The Clearing House shall deduct the money from Sompong's account[4] for such a loss and consider Sompong's seller position as closed (the seller position and the newly-opened buyer position are offset and the obligation between Sompong and the Clearing House is no longer abided). It can be

[3] This means the buyer of the call options (or the seller) can sell (or buy) the existing series of options to close the position. Similarly, the buyer of the put options (or the seller) can sell (or buy) the put options to close the position.

[4] If the investor earns profit from closing out the position, the Clearing House shall transfer such profit to the investor's account.

noticed that Amorn has replaced Sompong as a contract partner with the Clearing House. This can be done easily in global exchange markets since the Clearing House acts as a counterparty for any party. For the Clearing House, the net position in the contract is still a square position.

Options Expiration

On the options expiration date (4.30 p.m. of the business day prior to the last business day of the expiration month), if a position in options has not been closed, such position shall be exercised. The buyers of a call (put) options must decide whether they shall exercise their right to purchase (sell) the options or let it expire.

Exercise Settlement

There are two settlement methods which are physical delivery and cash settlement. If the use of physical delivery is inconvenient, costly, complex, or impossible, the Exchange may demand cash settlement as a method to pay for profit (loss) from exercise. For the options on the Exchange Index, the settlement method used is cash settlement due to the complexity in the physical delivery of securities portfolio as underlying assets. In addition, the cash settlement is also a method implemented for SET50 Index Options in TFEX. Therefore, if a position expires, the settlement method shall be carried out in the sense that the investor shall exercise in-the-money options and realize profit and loss while the out-of-money expires or has no value.

4.2 Business Governance of Futures Contract

4.2.1 Types of Futures Contract Business and Permission

According to the Derivatives Act, a derivatives trader must obtain a license from the SEC or has been registered with the office of the SEC. Derivatives business operators can be classified into types as follows:

1. A derivatives broker refers to a person who, in the ordinary course of business, presents himself/herself to the general public as being ready to engage as an agent in the business of trading in derivatives with others.

2. A derivatives dealer refers to a person who, in the ordinary course of business, presents himself/herself to the general public as being ready to engage as a counterparty in the business of trading in derivatives, excluding 1) those who trade in or offer to trade in derivatives for their own accounts on any derivatives exchange licensed under the Derivatives Act and 2) those who trade in or offer to trade in derivatives for their own account with derivatives dealers.

3. A derivatives advisor refers to a person who, in the ordinary course of business, gives advice to others, or hold himself out to the general public as being ready to give advice to others, whether directly or indirectly, concerning derivatives or advisability of trading in derivatives, excluding giving of advice from a derivatives broker or a derivatives dealer or giving advice in a manner specified in the notification of the SEC.

4. A derivatives fund manager refers to a person who, in the ordinary course of business, engages in the business of managing funds for others, or presents himself/herself out to the general public as being ready to manage funds for others, with the intention of investing in derivatives for profit, excluding those derivatives fund managers whose characteristics as specified in the notification of the SEC.

At present, the SEC has allowed those who have proper qualifications, financial status, and managing skills to operate four types of derivatives business as follows:

1. Derivatives brokers
2. Derivatives dealers
3. Derivatives advisors
4. Derivatives fund managers

Generally, one of the factors which indicate whether business operators should apply for a license or registration is types of service providers and recipients. For the license, there is no limitation concerning service providers

and recipients while the application for the registration is limited in the sense that the service providers must provide services to only institutional investors and must be commercial banks, finance companies, securities companies, juristic entities which are the subjects of international laws, and finance institutes established under specific laws. In order to promote competitiveness in securities business and cost reduction in Thai capital market, the office of the SEC has proposed the Ministry of Finance to launch Ministerial Regulations Concerning Granting of Approval for Undertaking Securities Business B.E. 2551, effective from January 1st B.E. 2551 onward in order to promote the liberalization of license for securities business, resulting in unlimited numbers of licenses for undertaking securities business but in a form of a single license. From this event, business operators are able to run all types of securities business. In addition, the SEC also liberates the securities trading fee for the trading of large securities volume since B.E. 2553.

Table 4-10: Categorization of License and Registration for Undertaking Derivatives Business

Business Types	License	Registration
Derivatives brokers	/	/
Derivatives dealers	/	/
Derivatives advisors	/	/
Derivatives fund managers	/	/

4.2.2 Objectives of Derivatives Business Operators Governance

The financial market of Thailand, at present, has been highly developed and now acts an important source of finance and an investment hub for both local and international investors. In addition, the financial market of Thailand is connected with the global financial system, resulting in a high fluctuation in the currency exchange rate, interest rate, securities index. The business operators

and investors, therefore, are inevitably encountering with increasing risks and search for effective risk management tools. One of such tools is financial derivatives.

A derivatives refers to a contract between two parties, buyers and sellers, who agree to trade the asset on a specific date and deliver asset at a specified time in the future. The assets traded can be commodities, namely rice, crude oil, gold or securities such as shares, debentures, and government bonds. It could be a contract which requires the sellers to pay money to their contract counterparty to buy the asset at the prevailing price. Such money can be calculated from the difference price of asset or entity value in the period of time specified in the contract compared with the future asset or entity value. Such entity can be securities index, interest rate, exchange rate, etc. Generally, the derivatives have no value in themselves but derive their values from the performance of an underlying entity. Therefore, it is a tool used for both making profit and hedging against the movement in securities price. This helps the investors to be able to change their investment status without a change in asset ownership. In addition, the investors will be able to limit risks they are being exposed to easily.

In addition, the derivatives market also reflects expectations towards the future prices of assets. This helps the business operators to plan their business and manage risks effectively. It also promotes competitiveness in Thailand's economic system. When the financial market is well-equipped with risk management tools, there shall be more funds and investors in the market.

In order to standardize the derivatives management and build confidence among local and international investors, the Derivatives Act B.E. 2546, effective from January 6th B.E. 2547, has been launched onward along with the supervision from the SEC and the office of the SEC on derivatives market, business conduct and related parties in the market. This helps Thailand's derivatives market reach international standards.

4.2.3 Important Measures for the Governance of Derivatives Business Operators

Preventive Measures for Clients' asset and payment

In the exchange market, generally, investors shall not know their contract counterparty (Blind Trade). Building up confidence among investors is, therefore, deemed essential. One of the measures for building confidence is to establish a safe settlement and clearing system in which the Clearing House acts as a central settlement agent for all parties and exposes itself to any risks from any party's failing to honour settlement obligations. Therefore, the Clearing House needs to develop measures to manage risks by requiring investors to deposit margin with the Clearing House.

The Clearing House may demand investors to deposit margin with members of the Clearing House or brokers. These brokers may demand a higher amount of margin than specified by the Clearing House. This margin shall be used in the case of defaults. If the broker need to hold or safeguard the client's asset deposited as margin, the broker must separate this asset from his/her own asset and open an asset account for the client. It is prohibited for the broker to use the client's asset for any purposes except for derivatives trading. The derivatives settlement also covers fee payment and other necessary expenses of the client. In addition, if the broker deposits the client's asset with a third party such as the Clearing House or a custodian, such custodian must acknowledge and behave as if that asset belongs to the client of that custodian. Apart from margin deposit, the minimum position of the brokers and the Clearing House has been specified and the readiness of the Clearing House towards risk management has also been investigated in order to maintain the system and reduce any risk that may occur.

If any broker or client encounters any problem, it is legal for them to use the margin without informing the contract counterparty in advance. In addition, the SEC can demand the business operators, the exchange markets, and the Clearing House to perform any action to prevent, get rid of, or solve any

problems or impacts in any emergency case. Also, if the broker goes bankrupt, there is a law to protect the client's asset from being confiscated. The client shall have power to transfer the asset back to them or to other brokers they want.

The Administrative Penalty

The imposition of administrative penalty for business operators or institution committing minor crimes seems to be more applicable and better than criminal penalty when the purpose of punishment is only for mending undesirable behaviours or preventing damages or losses from spreading since this method requires no criminal procedures against the wrongdoers which are time-consuming. However, in the case of corruption, criminal penalty is needed.

Some examples of administrative penalty are probation, condemnation, fine, limited operation, and suspension or revocation of a license. The persons who have been authorized in imposing the administrative penalty are the office of the SEC, the Administrative Penalty Committee, and the SEC. The office of the SEC can impose minor punishments such as probation or condemnation. The Administrative Penalty Committee can impose more severe punishments such as fine or limited operation. The SEC can impose highest penalty such as suspension or revocation of a license. In addition, the SEC is also authorized in determining the regulations and penalty proceedings. For those wrongdoers who feel that the penalty is injustice, they can appeal against the penalty to the SEC.

Self-Regulatory Organization Governance

A self-regulatory organization (SRO) refers to an organization responsible for governing its members by means of enforcing laws and regulations. The members of the SRO shall play an important role in the administration of the organization. The SROs related to derivatives include the exchange market and the Association of Entrepreneurial Governance. Generally, an SRO is a non-governmental organization with members who are experts in business conduct, familiar with the Exchange, able to quickly react to the changing market

condition, flexible, and effective in governing capital markets. Any organization with such characteristics is able to register itself as an SRO with the SEC.

In order to explicate the power and authority of an SRO, it is determined that if the SRO has already imposed the administrative penalty on the member who fails to abide by the laws and regulations, the SEC Committee or the office of the SEC shall not impose any additional penalty on that member if the penalty is sufficient and appropriate. However, the SRO must provide justice to the wrongdoer by appointing the Appeal Committee to report all the penalties imposed upon the wrongdoers to the SEC.

4.2.4 Derivatives Business Principles

Derivatives Business Licensees[5]

The operations conducted by the derivatives business operators who are service providers in the capital market have a great impact on the reliability of Thai capital market. The business operators must, therefore, comply with the standards and regulations as well as consider highest benefits for clients and prevent things that may put the traders at risks or disrepute Thai capital market. The main concepts in the governance of derivatives business operators are as follows;

Professional Conduct of Business

Business operators are required to conduct business and provide services to the clients with faithfulness, and carefully use their knowledge, ability, and proficiency in a positive way as professionals should do. Business operators shall give services to clients in good quality and treat fairness to clients by considering each client's type and condition.

[5] Derivatives Business Licensees refer to derivatives brokers, derivatives dealers, derivatives advisors, and derivatives fund managers, excluding those who have registered as derivatives business operators.

In addition, in conducting business, derivatives business operators are required to maintain their images and reputations as well as the reliability of the capital market. They must not perform any acts which may cause a conflict of interest or receive benefits in any manner which are higher than they should have. Moreover, they must monitor and encourage all committees, administrators, and general personnel to work in such a way that abides by laws and regulations.

Administrative Organizational Structure, Working System, and Personnel

In order to help the investors to receive quality services and to avoid exploitations, the business operators must make sure that the administrative organizational structure, working system, and personnel are ready and sufficient for the effective conduct of derivatives business. Good administrative organizational structure and working system are, for example, working systems that are able to serve the business conduct in a continuity basis, conflict of interest preventing systems, risk management systems, proprietary trading systems, clients' asset safeguard systems, and internal audit systems.

For an effective conduct of business, there must be sufficient personnel. The personnel must be honest with no tainted reputation and possess adequate knowledge, ability, and experience relevant to their position. The business operators are responsible for monitoring and promoting the personnel to work in such a way that abides by laws and regulations.

The appointment of a committee or a manager of the derivatives business operator must be approved by the SEC. The person shall be examined to ensure that he or she does not possess any prohibited quality specified by laws. If that person is found possessing such prohibited quality, the approval previously given shall be revoked, and the business operator must withdraw that person from the current position.

In addition, a person who is or will be a majority shareholder[6] of the business operator must be approved by SEC. The person will be examined to ensure that he or she does not possess any prohibited qualities such as having criminal records or having operated any business irresponsibly or imprudently. If the person is found to possess these prohibited qualities afterwards, the business operator shall provide SEC in writing on the findings within a specific period, and SEC may revoke the approval previously given. In the event that the majority shareholder is a juristic person, the prohibited qualities of directors, managers or partners of the juristic person shall be taken into consideration.

Operations

Prior to providing service to clients, the business operator shall compile and assess clients' profiles to categorize, evaluate investment suitability and consider clients' capability to comply with the terms and conditions of service. The essential information that must be taken into account includes identification of the actual clients or their beneficiaries. In the case that clients refuse to provide appropriate information, which results in failure to identify the clients' or the beneficiaries' true identity, the business operator may refuse to provide them with any service.

The objectives of categorization of clients are to evaluate investment suitability and clients' ability to comply with the terms and conditions of service so that the business operator can provide information and propose the service which suit their ability and willingness to take risks. In this case, the business operator shall regularly review and update clients' profiles.

Furthermore, the office of the SEC has determined the principles for contacting, persuading or recommending clients. The business operator shall arrange qualified staff approved by the office of the SEC to perform these procedures to assure that investors will receive appropriate advice and be notified of enough information in order to make an accurate decision on their investment. Essential information to be notified to clients is the risk of derivatives products and warnings on matters which may affect futures trading. The

[6] A majority shareholder refers to a person who holds or receives benefits of over 10% of outstanding shares held by the business operator.

operating staff shall work in conformity to operational standards[7] announced by the SEC.

The business operator shall arrange an elaborate system for managing and profiling documents or evidence related to its business operation. The retained information, documents or evidence shall be made ready for immediate use or examination. Also, responsible persons shall be assigned to handle the documents, evidence and information to ensure systematic management and storage as well as for preventing modification, loss, damage, improper or illegal access to the information.

Financial Position

Service providers who represents the futures trading on behalf of clients ("the futures trading broker") must have possess stable and appropriate financial position to support clients' futures transactions. In the case that clients fail to make payment or delivery in due time, the futures trading broker shall make an advance payment on behalf of the clients to facilitate the payment and delivery processes. The futures trading broker shall hold at least 15 million Baht of Net Capital (NC) at the end of any business day and at least 7% of general liabilities and assets deposited as margin. Moreover, reduction of the paid-up capital is prohibited unless approved by the SEC.

In the event that any futures trading broker fails to maintain the NC equal to or less than 1.5 times of the minimum of NC at the end of any business day, the futures trading broker must submit a report on the calculation of NC to SEC on a daily basis until the NC can be maintained over the specified rate for at least two consecutive business days, and the futures trading broker has already submitted the report on calculation of NC on the two days to SEC.

4.2.5 Guidelines for Trading and Provision of Service of Futures Trading

In trading and providing service of futures trading, the business operator shall prioritize clients' fair dealing by setting up a system to facilitate the contact

[7] Details are set forth in Topic 4.2.5 Guidelines for Trading and Provision of Service of Equity Instruments and Futures Trading.

and provision of service to clients. The procedures and processes of contact and provision of service to clients on fair dealing basis shall be determined based on the following aspects:

1. Providing good advice
2. Giving advice on trading and providing service that meets clients' expectations
3. Providing service for investment and transaction making which helps clients acquire the best execution
4. Not taking advantage of the clients and taking responsibility for post-trade result

Due to the fact that futures contract has different features and levels of risks, especially futures which are products with high risk or complexity by comparison to other equity instruments, the business operator shall create effective channels for contact and service provision, information disclosure, follow-up and monitoring, and assignment of staff whose duty is to trade and provide service to clients in order to prevent inappropriate trading or mis-selling of products to the investors. The system to support trading and provision of service to clients based on the aforementioned guidelines shall be arranged while taking into account of the following aspects:

Processes of trading and service provision

Processes of preparation for trading and service provision

1. Selection and assignment of staff who is a seller or gives services to clients and is knowledgeable of futures products.

Example: Staff preparation

When the business operator plans to invite clients for investment or to give advice on trading/investment in futures contract, a qualified staff who has been approved by SEC shall be assigned as the contact person who will give advice on investment and provide service to clients. The advice provided must also be suitable for the proposed product category.

Should the business operator intends to provide investment planning service to clients, a qualified staff who has been approved by SEC shall be assigned as the investment planner to provide that service to clients.

The business operator shall arrange regular training to the assigned traders to develop their skills and knowledge and ensure that they understand the products clearly and accurately, especially the products which the clients are not yet familiar with or the high-risk products such as futures contract.

2. Provision of information about capital market products or services to the assigned staff for study to ensure that they clearly understand all aspects of the products before offering them to clients

Example: Provision of product details

In case of trading and provision of service of futures contract at the Future Trading Center (which is Thailand Futures Exchange PCL or TFEX), the staff can learn from regulations or documents related to futures contract such as Contract Specification which contains the rates, methods and conditions of margin deposit for futures trading indicated by TFEX, media providing knowledge to investors which are circulated by TFEX including publications, articles, brochures, video clips, information about demand and supply of underlying assets which influence the change of futures contract prices, and house opinion (if any).

The business operator shall ensure to select correct, reliable and updated information.

Example: Making of house opinion

The business operator who makes house opinion shall have the system to assure the quality of analysis and acceptability of academic references. The information constituting the analysis must be taken from reliable, updated sources. The business operator shall also ensure that the analysts are independent from any stakeholders who may gain benefit from the house opinion and provide measures to monitor the analysts and prevent them from exploiting or disseminating undisclosed material information.

<u>Example</u>: Use of house opinion

The business operator shall have the processes to ensure that the sellers acknowledge and understand the information and advice provided in the house opinion so that they can use the information as reference for giving accurate and appropriate advice to clients. Also, it should be ensured that the investment consultants can give the same opinions and advice to their clients, and the analysis or advice given is not just trend-based or unverified.

3. Arrangement of explanatory tools or media to facilitate assigned staffs in the demonstration of features and risks of providing services to clients

<u>Example</u>: Documents and information used

The business operator should present documents and information about features and risks of the products to clients in concise, comprehensible and accessible format.

In the case that the house opinion has been made, the information in the documents must be correct and not misleading. The particulars about features and significant risks must be highlighted in the documents provided to the clients.

In case of the products traded in TFEX, or TFEX shall create a media to provide information about those products to investors which include publications, articles, brochures, or video clips.

- Examples of information about futures exchange are characteristics of contracts, trading account opening processes, margin deposit, opening and closure of contracts, factors affecting prices, calculation of daily profit and loss, risks of leverage or gearing, etc.

Processes of trading and service provision

1. Compilation and evaluation of clients' profiles for learning and evaluating investment suitability of clients

<u>Example</u>: Knowing clients (before opening accounts and signing contracts with clients)

The business operator shall request for clients' information by using forms and/or checklists so that the sellers can compile the clients' profiles completely and appropriately. The complied profiles should include information such as clients' background, age, occupation and their financial status. Further, the processes of compiling the above information should be able to clarify that:

- *The clients are the same persons as declared in the documents submitted for account opening application*
- *The true identity of the clients must be known and the final beneficiaries and authorized persons who control or make a final decision are acknowledged. If the information obtained is not sufficient or skeptical to the extent that the true identity of the clients or their final beneficiaries cannot be identified, the business operator shall refuse to provide service to them. In this case, the business operator shall have procedures to crosscheck the background of the real account owners since the first step of application for account opening.*
- *Types of investors can be categorized into institutional investors, ultra high net worth, high net worth, or retail investors to ensure that presentation of products and provision of information or notifications are appropriate for each group of clients and that the levels of clients' risks in terms of money laundering and financial support for terrorism can be identified in accordance with the laws on prevention and suppression of money laundering and prevention of financial support for terrorism.*
- *Ability and source of income spent on repayment and margin deposit as well as determination of appropriate limit of asset or futures contract can be analyzed. The business operator should take into account of stability, consistency and sensibility of financial position, income source and assets declared by the clients including bank deposit account and listed securities which should have high liquidity and be free from encumbrance.*

<u>Example</u>: Example of inappropriate clients' declaration of documents

The business operator shall consider whether the documents declared by clients are appropriate. For example, the information about income sources is unclear or without supporting evidence if the clients declare that they have

stocks in their portfolios but there is no proof of existence of those stocks, or the clients cannot provide supporting documents or details about business ownership. In this case, the business operator shall inform the clients to re-submit complete and clear documents or information prior to trading.

Example: Example of investment suitability evaluation

The business operator shall evaluate investment suitability of clients so that the products which suit their acceptable levels of risks of investment can be presented. Suitability Test form made in accordance with the office's standards or other newly developed evaluation forms may be used.

However, the business operator may not evaluate investment suitability of clients in some categories decided by the office of the SEC. These clients include institutional investors who have sufficient knowledge and ability to invest and manage investment by themselves or high worth net who are juristic persons having declared their intention in writing not to be evaluated.

Example: Making of addition knowledge assessment in case of futures contract

As futures contract is a high-risk or complex product, investment advisors should evaluate whether their clients are qualified for being presented with the products before providing them with service. The investment consultants may ask clients about the following information:

1. *Qualification: To evaluate how much knowledge pertaining investment they possess; the clients may be asked about: Qualification level, academic degree (Whether their education is related to the field of investment such as finance, business administration) or professional qualification (e.g. CISA, CFA, CAIA)?*
2. *Work experience: Is the nature of past or current work related to futures products or investment in the capital market? How long have they been working?*
3. *Investment experience: Have they ever invested in high-risk or complex products? What kind of securities have they invested in? How long have they invested in those products?*

<u>Example</u>: Review and examination of clients' profiles for obtaining factual information

The business operator shall review and examine clients' profile on regular basis or on the minimum basis indicated by SEC and/or by Association of Thai Securities Companies or when there is a case which requires extra review and examination such as the case in which money or securities are transferred to an account for increasing the limit and the same money or securities are transferred again to a personal account or other company's account, which means that the clients are probably using the same securities as the margin for increasing the limit of multiple companies.

Examples of clients' information which should be reviewed and examined include the information and documents declaring identity of the clients, final beneficiaries of the transactions, professions, income sources, objectives of making transactions, and so on.

2. Presentation of capital market products or services which are suitable for clients on the basis of the results of suitability test and provision of advice on asset allocation

<u>Example</u>: Basic asset allocation

The business operator processes the scores obtained from suitability test and provides clients with initial information about the levels of risks of the products in which the clients are capable to invest; for example:

- *If the scores are at the low range (low risk), the clients are advised to invest a small proportion of their portfolio in bonds or equity instruments.*
- *If the scores are at the high range, the clients are advised to invest more proportionately in equity instruments.*
- *If the scores are at the higher range (more risks are acceptable), the clients may also be advised to invest in futures contract.*

Nevertheless, if the evaluation results show that clients are not suitable for investing in or making transactions for any type of the capital market products, the clients should be notified of the fact. If they insist on investment or transaction making, they should be provided with additional information about

the risk and return of the investment or transaction making to ensure that they thoroughly understand the risks of the products. Also, there should be a system to keep evidential records of trading and service provision.

3. Distribution of documents for contact or service provision in concordance with each type of the capital market products or services to clients

***Example**: The business operator shall regularly submit the investment analysis made for clients which will be used as reference for giving advice and to ensure that clients have appropriate information to support their correct and timely decision on trading*

4. Appropriate explanation and information about risks of capital market products or services given to clients prior to making a decision to invest or receive service and the information about critical incidents which may affect each type of capital market products or services (material event) (if any)

Example: Provision of information about the risks of futures exchange contract (high-risk products)

In presenting futures contract, the business operator shall keep the clients notified of:

1. Risks of futures contract which is a high-risk product as it is a trade which requires a small amount of initial margin by comparison to the value of the contract (Leverage or Gearing). Only a small movement of futures contract price may affect the margin deposited by the clients or the clients may have to increase the deposit in greater proportion than the movement of that price. This could yield either positive or negative effects on clients. The business operator shall not give only explanation about the opportunity to make profit without clarifying the opposing possibility.

2. Rates and/or methods of deposit of initial margin, maintenance of the minimum margin level and deposit of additional margin by notifying clients of the conditions and how the business operator deals with them in the case that they fail to comply with the specified conditions regarding the margin deposit such as offset position of the futures contract

3. Period and method of delivery or acceptance of products and details of procedures in the case that the clients refuse to comply with the conditions regarding the delivery or acceptance of the products (if any).

The business operator shall provide clients with the risk disclosure statement to sign in order to ensure that they have acknowledged the important information prior to making a decision to invest.

Example: Notification of material event which may affect the proposed products

In case of negative event which significantly affects the price of futures contract, such as terrorism or serious event which affects the futures price in the countries in which the clients expect to invest, the business operator shall keep updating the incident and communicate the information to the investment consultants so that they can provide that information to clients prior to making a decision on investment in the products or while they are investing in the products. This will enable the investment consultants to provide clients with appropriate advice or explanation concerning the incident in a timely manner.

Example: Exercising caution when providing service or presenting service to certain types of clients

The business operator shall pay special attention and be careful when giving advice or information and following up trading or service provided to clients who require extra protection such as the clients who are over 60 years old who may have shorter than average investment horizon, the clients who have limited financial knowledge or lack experience in investment as they have started investment not long ago, the clients who have difficulties in communication or in decision making or health problems. These clients are not ready for investment by comparison to general investors.

5. Execution of clients' orders of futures contract with traceability of the orders to ensure that the orders are issued by the real account owners or the persons authorized by the account owners in writing. The clients' account status should be checked prior to making transactions, and the transactions should be made in sequential order. Trading of securities for a client through another

client's account is strictly prohibited. Transactions which are made in the way that exploits investors are also not permitted.

***Example*: Characteristics of exploitative trading**

- *Trading of securities or futures contract for the sellers' own interest prior to trading securities or futures contract for the benefit of investors (front running)*
- *Encouraging, convincing or supporting clients to repeat the same transactions unnecessarily (churning)*
- *Failure to execute orders in sequential order by favoring certain clients such as major clients or clients who are related to the sellers.*

6. Arrangement of effective post-trade processing and additional system for controlling money receipt and payment and preventing embezzlement. These procedures should also be notified to the clients as necessary.

***Example*: The business operator shall determine the post-trade processing which covers:**

1) Delivery of documents to clients by

- *Making reports or notifying clients of the results which contain appropriate and accurate details in timely manner. In case of document return, the business operator should arrange a registrar to control delivery and return of documents and investigate the cause of return of clients' important document.*
- *Assigning the back office staff to deliver important documents to clients directly without passing the investment consultants. These documents include trading confirmation, notification of client asset balance, and so on.*
- *Arranging a system to control important forms which are under the operation department's responsibility to prevent unrelated parties to misuse the documents.*
- *Separating work areas of the investment advisors or authorized personnel and back office staff to prevent the investment consultants to falsify or destroy important documents before being sent to clients.*

2) Payment and delivery management by suggesting clients to pay trading price via Automatic Transfer System (ATS) only to ensure that the money

paid by the clients to the company is spent on futures contract only, and in the case that the money is paid to the client by the company, it is to assure that the clients will receive full amount of their money.

3) Other operations. If clients wish to make any transactions on their assets such as deposit, withdrawal or transfer of the assets or dealing with their profiles, the company should suggest that the clients directly contact the operations department. There should be a system to examine completeness of documents and verify that the clients who request for transaction making are real owners of the assets or profiles. In the event that the original investment consultants who take care of the clients' accounts have been replaced, the clients shall be informed of the change in writing.

Processes of trading and service provision monitoring

1. Monitoring to ensure that trading and service provided to clients conform to the processes of trading and service provision determined by the business operator

2. Correction or any action taken when trading and service provision is found not conforming to the processes trading and service provision

3. Filing of documents and evidence in a way that can be promptly retrieved by the office of the SEC.

Example: Sample of internal control system to prevent possible risks

- Separating of the front office from the back office in order to cross check the operation
- Having a system which is able to examine each other within organization can prevent anyone being responsible for the important tasks from the beginning to the end of the process from the misconduct or mistake. For example, a person who has authority to approve trading being in excess of credit line hierarchically or to revise the mistake of trading shall get the approval from the chief who will verify the necessity and appropriateness. In addition, withdrawing and transforming securities of clients must be hierarchically approved.

Example: Sales and services monitoring

The quality control of seller in sales and services and the examining of sales performance shall cover the following details.

- Examining the sellers' product presentation whether it is suitable for the clients
- Supervise the sale of the seller in case of special approval is needed such as the sales of product to over 60-year-old clients etc.
- Monitoring the performance of the seller towards their qualifications and obligations
- Monitoring the operation of the sales, control and inspection whether they follow the process stipulated by the business operator. Moreover, there will be a punishment for disobedience.

The business operator may choose at random to listen to tape recording conversation between the investment consultant and clients or take a random check of operation.

Complaint Handling

When receiving a complaint concerning sales and services from a customer, a business operator must follow the procedures as outlined below:

Reception and procession of complaints

1. There must be units and personnel to receive complaints; customers ought to be able to contact them directly. There must be systems to inform customers of the channels and processes for making complaints about the company's business operation or the service provided. Customers ought to be notified of the scope of complaints they are able to file, the channels and the processes for making complaints in order to facilitate consideration procedures. For instance, customers ought to be informed about essential information such as necessary documentation and the complaint follow-up, etc. Customers, furthermore, should be notified of complaint channels towards the official department, e.g. the Securities and Exchange Commission via the phone number, 1207.

2. There must be a standard procedure for receiving and processing of complaints. It is essential that related departments and personnel receiving complaints are independent and also appropriately trained. Customers who

make the complaints should be given the opportunity to fully provide the information. To ensure fairness, the consideration of complaints must be based on the related information. In addition, there should be a copy of the statement recorded, in the case of interviews, and it should be handed over to the customers who file the complaints.

3. Complaints need to be resolved impartially by considering the facts and circumstances in each case and all factors including the procedure of actual operation, contract of the seller, customer profile, etc.

4. There should also be a system to monitor the progress towards the process of complaint handling. This is to ensure that the management and consideration of the received complaints are aligned with conditions and time limit.

Resolving customers' issues

A business operator provides the standard ways to resolve and remedy problems or compensate the customers. Also, the business operator should ensure that appropriate time limit is given to each process. Moreover, the business operator ought to notify the complainant of the progress periodically, and determine the factors in the remedy and compensation of the similar cases justly and impartially.

Prevention of Repeated Problems or Complaints

1. Complaints are warning signals indicating the problem of the business operation system. Providing that a business operator receives a repeated complaint against similar issues, sellers or groups, the compliance unit is required to investigate the cause of the problem and/or extend the investigation immediately to stop the damage.

2. It is vital to appoint staff in charge of analyzing the cause of the problem leading to complaints and build up on the results of the analysis, e.g. inspection, evaluation of the performance of the sellers, improvement of the working practice/system, increase of control and review, and communication with sellers and related workers.

3**.** A business operator reports on complaints to the board and senior executives in order that they can evaluate the risks and revise their relevant

operations to prevent repeated problems and to gather the reports to the office of the SEC.

Other Regulations Regarding Futures Contract Business Operations

Prevention of Conflicts of Interest

Businesses concerning futures contracts are comparable to other financial businesses in which conflicts of interests might occur when business operators, investor contact agents, investment consultants, investment planners, etc., or those who are related to service providers, e.g. executives, major shareholders, etc., are relevant to interest in providing such services, which results in conflicts between customers and the service providers. This, moreover, could lead to potential conflicts amongst the clients. In these type of conflicts, clients could be treated unfairly or taken advantage of as service providers are acting in the best interest of themselves rather than the clients'. Therefore, if there was no proper management or control over conflicts of interest, clients will lack confidence in the service of business operators. Due to these reasons, business operators are required to conduct as follows.

1. Business operators are required to acknowledge prohibited transactions and permitted transactions based on the appropriate conditions for managing of the conflicts of interest.

• Prohibited transactions refer to actions which may lead to damages; the exploitation of customers or investors, for example, gain benefit on customer's expenses, the use of information or opportunities taken from providing services or conducting business by "front running," trading securities for the benefit of themselves or other people by using the analysis of stock before it is publicly available, excessive transactions (Churning) etc.

• Permitted transactions under the conditions. For example, the results of transactions that are necessary and beneficial to the customer in particular circumstances need to be disclosed to the customers or the authorized person sufficiently and appropriately. Proprietary trading must be conducted carefully to ensure that clients' benefits are prioritized.

2. Business operators are required to provide effective policies, actions and tools to prevent and handle conflicts of interest, and to monitor and inspect

the essential implementation such as the segregation of departments and personnel responsible for the work involved with conflicts of interest, the separation of the chain of command of the those departments, the implementation of practice for the departments and the personnel to prevent conflicts of interest, and the prohibition of transactions at certain times or disclosure of interests to the customers when advising them on any transactions as the case may be.

Example: Separation of departments involved with conflicts of interest

With regards to futures trading, the firm must separate the agencies trading futures for clients from the proprietary trading desk.

3. Business operators are required to regularly prepare the review of appropriateness of actions and working systems to prevent and manage conflicts of interest. The review must at least be conducted immediately when any incidents probably affecting the prevention and management of conflicts of interest of business operators occur.

Prevention of Detecting and Exploiting Internal Information

Businesses concerning futures contracts could have the opportunity to receive internal information such as the issuer's information that affects the share price of the issuer or the company relevant to the issuer or significant information affecting a price change of futures exchange, commodity price or numerical level of the variables or the decision of futures trading, etc. Due to the fact that previously mentioned information has not been publicly disclosed, if the business operators and personnel working in the related business make use of internal information to buy or sell or disclose the information, it is considered as an exploitation of other investors as they are not able to get access to information equally; therefore, to prevent business operators and personnel working in the related business from making use of internal information, there must be the regulations as follows.

1. To separate agencies and personnel having the opportunity to learn internal information from other agencies and personnel. Agencies in securities

firms often have the opportunity to know internal information such as securities underwriting, financial advice or credit loan analysis, etc.

2. To establish the rights of those who are able to get access to related information. They must be persons who have the authority and responsibility to know the information (Need to know basis).

3. To implement the action to monitor these issues. Generally, securities firms will establish a watch list and a restricted list of transactions. The procedures are as follows.

• Watch List: A securities firm will put the securities on the list when the company has the opportunity to receive internal information from the issuer. For instance, when the company has made or is entering into the contract or agreement on providing an issuer with financial service, and the relationship or deal is not publicly available; securities firms will disclose the securities' names in their watch list only to departments and personnel that are necessary to know it for their operations. Furthermore, personnel who are relevant to or receive the information will be prohibited from buying or selling securities in the watch list. After the deal is publicly available, the company will then move the securities' names from the watch list to the restricted list.

• Restricted list: Even though the deal is publicly disclosed, securities firms should continue supervising until the service ends or no longer needs to be monitored in order to maintain investors' confidence and companies' reputation. Consequently, when the securities' are moved from the watch list to the restricted list, the company will disclose the list of securities in the restricted list to all the departments and personnel. The company prohibits all personnel, including the company's investments, from buying or selling securities for themselves, inviting and giving advice concerning the securities' names, and also conducting the analysis. After the deal ends, and the internal information is no longer used, the list of securities will be removed from the restricted list.

4. In case an analysis of investment in capital market product is made, there should be an action to prevent the personnel responsible for the analysis from making use of undisclosed information or disclosing it to a third party.

Control of Trading Securities by Personnel

Business operators must also control the trade conducted by personnel by implementing clear rules and regulations in order to prevent them from making use of internal information and to prevent conflicts of interest. With reference to a securities brokerage company and an agent of futures exchange, it is required for the company to have personnel open trading accounts with the company they are working at. Provided that a company allows its personnel to open accounts with other companies, a company has to provide a controlling and inspecting systems that must be as effective as the systems used for personnel opening trading account with the company.

Custody of clients' assets

According to business concerning futures contract, if a business operator is involved with a customer assets, such as customer's securities, cash deposited for collaterals. and the assets that a business operator regarding futures exchange has acquired or provided as margin for the performance of the contract of futures exchange, etc., a business operator needs to provide a maintenance system to protect customer assets and also prevent fraudulent activities or the misuse of customer assets.

Accordingly, a good maintenance system must be able to protect customer assets. At least, the system needs to perform as follows:

(1) To make the registration of customer assets to be accurate, complete and up to date.

(2) To separate the assets of the customer from the assets of the company. If a company has deposited assets at other financial institutions or other institutions e.g. TSD, the company is required to specify the name of the account or the promissory notes and to make it clear that it is a customer's account.

(3) To implement the procedures to maintain customer assets, especially the withdrawal, transfer or change of customer assets such the verification of customer's signature and approval by the authorized person.

(4) To count or reconcile customer assets regularly.

(5) To report the movements or balance of securities to customers at least once a month. However, in case there has not been the transaction in a customer's securities for a long time, a company will notify that customer of the

balance regularly at least every 6 months.

(6) To prepare a contract or agreement regarding the maintenance of the customer's property in writing by stating the rights, duties and responsibilities of both parties, and there should be at least the items and subject matter specified by the office of the SEC.

In addition, the department which is responsible for protecting customer assets should be a specific department or an operation department, but it must not be any customer contact departments that invite customers or give customers investment advice. This is in accordance with the principle of segregation of operations in order to validate the operations.

Margining in Futures Exchange

In order to control the risk that can arise from futures exchange and tighten the security of the clearing and settlement system, a futures trading agent must prepare a system for margin deposit and call in futures exchange as follows.

(1) To determine the rate or value of margin and the terms of calling for the margin from the customer and the initial margin. The additional margin is also considered when the rate or value of a customer’s margin is lower than the rate or value of the maintenance margin after the adjustment of market value of the margin every working day by considering the volatility in price of futures, the financial status, the ability of margin placement and the repayment history of customers. It must not be less than the criteria announced by the office of the SEC.

2. To implement an action to control the risks when a customer cannot deposit the margin within a time limit such as refraining from trading futures, clearing the customer's futures position until the rate or value of the customer’s margin is not lower than the initial margin rate or value.

Establishment of a Unit to Oversee the Operation of Business Operators

The compliance unit is an organization which is equally important to other units of the company. It is responsible for overseeing the operations of the company, and ensures that employees abide by the law unlike an internal audit

unit which focuses on conducting investigations on fraud or operating procedures which cause serious damage to the company. The duties of the compliance unit are to issue regulations to the employees of the company to prevent any violation or break any relevant laws, to inspect employees whether they are in compliance with applicable regulations, to punish the employees in the event of a violation of the regulations, including the collaboration with SEC, SET, TFEX, and TCH which is always required to acknowledge and understand the new rules which have been put into practice and can be passed on to the employees and executives of the company for proper operation. The compliance unit must be free to act, and must be able to present the results of the audit and the opinion to the Board of Directors without any restraint or misrepresentation. Besides, the compliance unit should be composed of those with knowledge of laws and regulations related to stock market business and those who have always been trained in the particular area. The head of compliance, who can work full-time and participate in the training in the curriculum at the office of the SEC every two years, should also be included. Therefore, the business operators with the strong compliance unit will reduce the risk that business operators will violate the law.

Anti-Money Laundering and Combating the Financing of Terrorism: AML / CFT

The pattern of organized crime is increasingly evolving, especially in the context of the crime of money bleaching, also known as "money laundering" or the process of making illegally-gained proceeds appear legal and the money is used to finance crime, including financial support for terrorism.

This may be done by customers through securities businesses or derivatives businesses. Law on Money Laundering and Combating the Financing of Terrorism, therefore, issues the provisions of the above business operators as a type of financial institution according to the law to ensure that there are mechanisms which can prevent and manage risks concerning the use of business as a channel or intermediary in money laundering and financial support for terrorism.

In addition to the business operators who are required to manage risk from their business operations as defined by the SEC, AML / CFT risk

management is required. The company must have policies, measures, and procedures which are accurate and consistent with the laws, rules, and guidelines under the supervision of the Anti-Money Laundering Office ("AMLO"). (Study further information from AMLO)

Customers' Identification

When there are any transactions, business operators must require their customers to show their identification to be verified in accordance with the Notification issued by the AMLO. The identification of the customer and the true beneficiary of the customer could confirm that the received information is correct or true. It may also crosscheck with other external sources.

Verification on Customers' Facts

Verification on customers' fact is a process to assess the customer's risk level and manage the risk before approving the customer. Risk factors are used to determine the level of customer risk, such as customer careers, the source of money and income of customers, or country/region, and etc. For high risk customers, the process must be more intense than usual.

In addition, the transaction integrity of the customer must be regularly monitored, verified, and reviewed whether the risk has changed or whether there are any unusual or suspicious circumstances

Report on Suspicious Transactions

The business operator is responsible for reporting any suspected transaction to the AMLO when there are any suspicious transactions or an act to refrain from enforcing the law. Examples of transactions which are suspicious are large transactions which are not consistent with the customer's financial position, the same customer opens multiple accounts for sale of the same type of securities which may be that the customer is not a true beneficiary, or the customer does cash transactions which do not exceed 2 million baht each time for the value of debt higher than 2 million baht or pays the full amount of money to avoid reporting the transaction using cash to the AMLO, etc.

4.2.6. Unfair Actions on Futures Contract

As a futures contract is changeable in value according to the price of the underlying commodity or variable. A futures contract is a financial instrument which can be used to hedge against a change or volatility of the price of the

asset, interest rate, exchange rate, and other goods or can be used to create a contract position to benefit from the change in the price of a product or the value of a variable. An effective futures exchange is a source which reflects the expectations of those in the exchange towards the Price Discovery Mechanism

Hence, to allow the exchange to fairly, reliably and efficiently reflect the expectations about the price of a product or the value of the underlying variable, it is necessary to have the provision of law which prohibits any act which would cause the price of the futures contract in the exchange to incorrectly represent the unusual price (Artificial Price) and also prohibits the person with Inside Information regarding the futures contract, the product, or the underlying variable in the futures contract from exploiting such information (Insider Trading). Derivatives Act B.E. 2546 (2003) outlines unfair actions on futures contract in Category 6, consisting of two-part provisions. The first part is the unfair action which affects the price of the futures contract and the second part is the unfair actions with internal information.

Actions Affecting the Price of the Futures Contract

Creation of Futures Contract Price

No person shall, either by oneself or with any other persons, trade in futures contract or offer to sell futures contract, buy or sell or offer to buy or sell goods, or any actions related to the following variables:

1. To maintain the futures contract price level in the exchange not to meet the normal market conditions or to make the price of the futures contract to be increased or decreased as unusual to market condition;

2. To have the effect or the effect of maintaining the futures contract price level in the exchange not to meet the normal market conditions or making or likely to make a contract price higher or lower in the futures market, which are not in the normal condition of the market, except in good faith to protect their legitimate interests.

However, any of the following actions or circumstances shall be considered as presumptions of joint actions to create a futures contract price.

•To open a joint bank account for payment or payment related to or due to futures trading or buy or sell products.

•To have futures trading or buying or selling of goods on behalf of others.

•To have oneself products delivered for others in accordance with the futures contract.

•To pay or receive the futures contract payment, or sell the goods on behalf of others.

•To put money or other assets into collateral for futures trading or buy or sell products on behalf of others.

•To allow any person to use his or her bank account to make payments or receive payments related to or due to futures trading or to buy or sell products

•To allow any person to take advantage of, or be liable for payment, or in connection with futures trading or the purchase or sale of goods

Stockpiling, Dumping or Controlling Underlying Assets of Futures Contracts

No person shall be allowed to seek undue advantage of the position of futures contract, either for oneself or others, to hoard, dump, control or take any action against any futures contract approved for trade in the exchange. As a result, the goods which can be delivered under futures have increased or decreased significantly.

Notice of False or Misleading Statements or Misleading Information

No person may give notice of the transmission of false or misleading statements, or may give rise to any material misconduct in relation to futures, assets, or variables. At the time of notification, the person who knows or should know the statement, message or testimony is false or misleading in substance, and the action is as follows:

- To make or to cause any person to trade futures in the exchange;
- To make or to be likely to increase the price of any futures contract in exchange higher or lower or in effect to maintain the price level of a futures contract.

Forecasts by Misrepresentation or Using False Information as Forecasts

No person may make predictions about futures, assets, or variables by distorting the facts or information used to forecast or using false information as forecast or ignored such information and the actions lead to:

- Make or to be likely to cause another person buy futures in the exchange;
- Make or to be likely to increase or decrease the price of any futures contract in the exchange or in effect to maintain the price level of a futures contract

Spreading the Message to Create a Futures Price

No person shall transmit a statement indicating that the price of futures traded in the exchange shall be, or should be, higher or lower, or be effective or likely to be maintained at the price level of the futures contract. Futures trading or any actions related to futures contracts are made in the manner in which futures prices are established, or in the notice of false or misleading statements or misrepresentations or misrepresentation of facts or misleading information to be used by such person.

•To engage in futures trading, to make futures contracts, to disseminate false or misleading statements, or to mislead, or to misrepresent facts, or to use information which is known to be false;

•To receive or to be going to receive any compensation or benefit in connection with the transmission of the message

Inside Information

No members of the board of directors, sub-committee of the board, juristic person representatives, agents, employees, staff, advisors or staff of futures market, clearing house of futures market, supervisory association of futures operators, the stock exchange, securities market, clearing house of securities market or a legal entities who supervise futures market, assets or variables; and those persons know the material facts[8] and the facts have not yet open to the public, do the following acts:

[8] The material facts mean the facts that are material to the change of futures prices or asset prices or number levels of variables, or material to the decision to trade futures contract or assets buying or selling of investors.

1. Trade futures contract or offer to trade futures contract or buy or sell or offer to buy or sell assets that are concerned with the essential facts for own benefit or other person benefit,
2. Disclose the essential facts to the third party by knowing or should know that the persons may take advantage of the facts for trading futures contract or trading assets.

If any person has inside information as described above by knowing that the information has been disclosed by insiders and not publicly opened, the person must not act the above 1 and 2 items.

Penalty

Criminal penalties of unjust operators affecting the price of futures and criminal penalties of unjust operators regarding the use of inside information are equal to a penalty of not more than five years imprisonment or a fine not exceeding one million baht or not more than two times the benefits that such person receives or likely to receive because of such action, whichever is higher, or both.

Conclusion

Investors who wish to trade futures in the futures market or TFEX can trade through brokers who are members of the market by opening an account with the broker. Investors can use their own Internet trading service or choose to trade through a broker's agent to send a trading order. However, futures trading in TFEX is subject to margin conditions for both buyer and seller risk prevention. Investors must have margins in the account not less than the amount of margins as prescribed by the broker. The broker will calculate the profit and loss of the contract which the investors hold every day with the daily settlement price to check the adequacy of the margins. If the margin level is lower or tends to fall below the minimum level, the broker will contact the investors to place more margins to cover the risk of fluctuation of the price and will calculate the profit or loss until the contract expires or until the investor closes the position in the contract. The margins will be refunded at the end of the contract or the maturity date to the investor.

Chapter 5: Contract Specifications of Products in Thailand Futures Exchange

(Translation available)

Learning Objectives:

1. Explain reasons and significance of standard setting in a futures contract.
2. Distinguish types of an underlying asset in a futures market.
3. Explain meanings and significance of the nature of a futures contract standard.
4. Explain symbol and abbreviation of a futures contract.
5. Explain a multiplier of a futures contract.
6. Explain a settlement price of a futures contract.
7. Explain a minimum tick size of a futures contract.
8. Explain a daily price limit of a futures contract.
9. Explain a trading hour of a futures contract.
10. Explain the last trading day of a futures contract.
11. Explain a settlement price of a futures contract.
12. Explain a speculative position limit of a futures contract.
13. Explain a settlement method of a futures contract.
14. Explain trading fee and clearing fee of a futures contract.
15. Explain and distinguish the standard, contract terms of each type of a futures contract.

Chapter 5

Specifications and Conditions of Products in Thailand Futures Exchange

5.1 Significance of Futures Standardization and Conditions

TFEX, which is an organized exchange, is a center for derivatives and futures trading. To operate the trading effectively, TFEX has set a standardized contract specification for traded products which is in line with international practice and practices of other international futures exchanges.

It is necessary for TFEX to set a standardized contract specification to publicize it among investors in advance of their trading as it will allow investors to understand the specifications and conditions of the contracts they wish to trade. See the example below.

Table 5-1: Example of Contract Specification of SET50 Index Futures

Items	Details
Underlying Asset	SET50 Index which is compiled, computed and disseminated by the Stock Exchange of Thailand
Type of Contract	Futures
Ticker Symbol	S50
Multiplier	THB 200 / index point
Settlement Month	Three nearest consecutive months plus the final month of the next 3 quarters
Price Quotation	The index price is quoted to two decimal places.
Tick Size	0.1 index point (equivalent to THB 20 / contract)
Daily Price Limit	Not over ±30% of the most recent settlement price
Trading Hours	Pre-open: 9:15 am – 9:45 am Morning session: 9:45 am – 12:30 pm Pre-open: 1:15 pm – 1:45 pm Afternoon session: 1:45 pm – 4:55 pm
Last Trading Day	The business day prior to the final business day of the contract month (Trading hours end at 4.30 pm.)
Final Settlement Price	The final settlement price shall be the numerical value of the SET50 Index, rounded to the nearest two decimal points as determined by the exchange, and shall be the average value of the SET50 Index taken during last 15 minutes and the closing index value, after deleting the three highest and three lowest values
Speculative Position Limit	Net 100,000 delta equivalent SET50 Index Futures contracts on one side of the market in any contract month of SET50 Index Futures and SET50 Index Options combined.
Large Position Report	From 2,500 net position in SET50 Index Futures in any contract month or all contract months combined
Settlement Method	Cash settlement
Exchange Fee	Not over 50 THB/contract collected from both buyers and sellers

The above example shows the contract specifications of SET50 Index Futures comprising information and conditions investors should learn before trading. Understanding the contract specification enables investors to follow trading and settlement conditions properly.

5.2 Types of Futures Contracts and Underlying Assets

5.2.1 Types of Futures Contracts

Primarily, investors are required to understand types of futures contracts: futures and options. Each type is different in terms of settlement. Before trading, investors also need to understand the underlying assets of those contracts. Types of futures contracts traded in TFEX are as follows:

- **Futures**

A futures contract is a contract that obligates the buyer and the seller to fulfill the trade according to the agreed price and follow the obligations under the contract. The obligation creates risk for both parties if the price changes. Consequently, the buyer and the seller must place collateral to mitigate the risk in case the price of the underlying changes during the term of contract. Thailand Clearing House Co., Ltd. (TCH) is in charge of management of the collateral as well as daily assessment of collateral sufficiency to be prepared for the risks that may occur during the whole term that the clients hold those positions.

- **Options**

An option represents a contract where the option buyer buys the right from the seller (or option writer) by paying a “premium” and when time comes where the option holder can exercise the right according to the option contract, the option holder can make a decision about whether or not to exercise the right. When the option holder exercises the right, the option seller must follow the obligation as stated in the option contract.

Since only the seller has obligations related to the exercise of the right, investors who choose to sell options (Short Options) must fulfil the collateral requirements due to the risk that the seller must follow the obligations as stated in the contract if the right is exercised. In summary, buying and selling options contains an element of risk and needs appropriate security approaches. This requires collateral from option writers only, as there is a risk of following the obligations resulting from right exercise of the option holder.

5.2.2 Underlying Assets

Underlying assets are the main factors of futures and options trading as the prices of those futures and options vary in relation to the changes in prices of underlying assets. Such relationship can be a predictive indicator of the price of underlying assets in the future. In addition, when futures and options contracts reach their expiration dates, the final settlement price is announced. In general practice, the price of underlying assets is used to calculate the final settlement price. Therefore, before trading futures and options, investors are recommended to study and understand the price variation of underlying assets to make appropriate decisions and fulfil their objectives.

Currently, there are a variety of contracts available in TFEX which cover all types of financial products including indices, stocks, commodities, currency exchange rates, and interest rates. Details are as follows:

- **SET Indices**

SET50 Index

SET50 Index is a stock price index calculated and issued by the Stock Exchange of Thailand (SET). The 50 stocks used in the index calculation are selected from SET listed stocks with large market capitalization and has cash flow which meets the selection criteria. The stock list for the SET50 Index is

reviewed every six months to ensure that the stocks maintain the elements and qualifications as required by the criteria.

SET50 Index Futures is a good indicator of the overall movement in the stock market and mainly varies in relation to the SET indexes. It is, then, applied to risk management of stocks invested in the stock market and speculation based on the overall price variation in the stock market.

Sector Indices

These indices are calculated and issued by the Stock Exchange of Thailand (SET) which reflects the movement of the stocks with the same fundamentals. They are calculated using common stocks in each business sector. In selecting appropriate sector indices to use as underlying indices for futures, the selection method used is the same as the method used in other derivative products. That is, the underlying asset must have large market capitalization, high liquidity, and variation at a high enough rate to encourage underlying asset holders to manage risk from holding the futures and to build up investor's interest in trading for profits.

Here is the list of sector indexes which are underlying indices for sector futures trading in TFEX.

- Banking (BANK)
- Information and Communication Technology (ICT)
- Energy and Utilities (ENERG)
- Food and beverage (FOOD)
- Commerce (COMM)

Individual Stocks

Selecting underlying stocks for Single Stock Futures, TFEX uses the same standard as selecting underlying assets. TFEX has determined basic principles in which underlying stocks must:

1. Be listed in the SET,
2. Have high liquidity, have large market capitalization, are enlisted as the constituents of SET100, and
3. Is not in the list of possible delisting companies according to the SET regulations or will voluntarily delist in the near future, or is under suspension (SP) or has the possibility of being suspended for a long period.

- **Commodities**

Gold

Gold is a precious metal with value, is durable and is an asset that is near money due to its liquidity and can easily be converted into cash. 70% of gold goes to jewellery manufacturing, 11% goes to the industrial and medical sectors, and 19% goes to investment. The demand for gold in the investment sector tends to

increase continuously as it is a safe asset. When confidence in the economic condition declines, investors turn to increasingly invest in gold.

The sources of gold include gold mines, and gold reserves sold off by central governments, and gold scrapings.

Gold is an asset that is traded in various regions around the world all day. Therefore, the price of gold in trading changes all the time. The price traded in key markets is the price of gold with different purity ratio, such as in the London market the price of gold of 99.5% purity, etc. Specifically, for the gold as an underlying product traded in TFEX, there are 3 types of contracts:

- Gold futures: futures contracts on gold with 96.5% pure gold bullions as the underlying asset, with 2 contract sizes available for trading: 10-Baht Gold (GF10) and 50-Baht Gold (GF50).
- Gold-D futures: futures contracts on gold traded in dollars with 99.99% pure 100g gold bullions as the underlying asset, having trading price offer in US dollars.
- Gold online futures: futures contracts with 99.5% pure gold bullions (international trading standard) as the underlying asset. The contract size is 300 times the price of the underlying asset, without taking the exchange rate into the calculation.

Silver metal

Silver is a highly valuable metal. It has multiple benefits used in many areas, such as the production of coins, furniture, jewellery, including industrial works and current medical field, etc. Silver is also one of the safe-haven assets with similar attractiveness to gold. Amid uncertainty in economic situations, silver has become more and more sought after, not only in terms of investment but also in the jewellery industry where the demand for silver is growing as well.

TFEX is currently open for trading Silver Online Futures with 99.9% purity and quoted according to the global market silver price in US dollars, but settlement and calculation of the profit/loss in baht by determining that every US dollar that changes is equal to THB 3,000, which is the same as Gold Online Futures. This way investors do not have to worry about exchange rate risk, making it easy for follow-up, price analysis, and trading. In addition, Silver Online Futures are cash settlement contracts with no product delivery.

Rubber

In global derivative markets, trading of derivatives with commodities as underlying assets has become continuously popular. Derivatives on agricultural products have high growth and have increased in trading volume. This demonstrates the future growth capability of agricultural products.

TFEX has considered agricultural products that have the potential to become underlying assets for futures to meet investors' needs. It is discovered that rubber is a suitable underlying asset due to its significant role in the Thai economy as a national product with high export volume. Rubber is exported to major importers including China, European countries, the United States, and

Japan. Rubber products can be processed and used widely in major industries, such as automobiles and parts manufacturing, road construction, as well as in small and medium industries, such as manufacturing of rubber gloves, hair bands, and mattresses.

Used globally, rubber is a commodity of which the price or value varies upon supply in the global economy. During a positive economic condition, there is always an increase in consumption. More people buy new cars, and more roads are constructed. Rubber is an agricultural product. Its production depends on a number of factors including weather, season, and government policies. Consequently, the inelasticity of demand and supply may occur, causing a fluctuation in rubber price which is a price risk for manufacturers and consumers.

Moreover, as rubber is widely used all over the world, rubber has become a commodity in which the value or price fluctuates according to the world demand and supply. When the world economy is in a good state, consumption increases, people buy new vehicles, and more roads are built. However, since rubber is an agricultural product that requires many factors in production, whether they are weather conditions or government policies, sometimes the demand and supply are not inline creating fluctuation in rubber price, this is a price risk affecting both rubber producers and users.

Due to the price properties of rubber that are very volatile, it is essential to have a tool to manage risk from price fluctuations. Therefore, TFEX has launched the trading of futures contracts with natural rubber ribbed smoked sheet No.3 as the underlying commodity product based on the Green Book standard, which is one type of rubber products used as a benchmark for rubber prices globally, consisting of 3 types of contracts as follows:

– RSS3 Futures has the underlying product which is natural rubber ribbed smoked sheet No.3: RSS3, in accordance with the Green Book standard, having the contract code: RSS3, and payment by either physical delivery or cash settlement.
– RSS3D Futures has the underlying product which is natural rubber ribbed smoked sheet No.3: RSS3, in accordance with the Green Book standard, having the contract code: RSS3D, and payment by physical delivery.
– Japanese Rubber Futures has the underlying product which is natural rubber ribbed smoked sheet No.3, which is traded in the Japan Exchange Group (JPX). The contract code is JRF. The payment is by cash settlement.

Exchange rate

Foreign exchange rate is important to the global economy and the Thai economy as it is used in international trade and investment. The movement of foreign exchange rates in Thailand is an important factor that import-export entrepreneurs must closely monitor since it affects the performance of Thai businesses and the national economy as a whole. In addition, in the past years, increasing number of Thai investors prefers to invest in foreign assets, such as

foreign securities, gold, oil, etc. All these factors have increased the demand for risk management against forex rate movements.

TFEX has therefore launched the trading of futures contracts based on foreign exchange rates (currency futures) as underlying assets, as an alternative for risk management among entrepreneurs, and trading option for foreign exchange-related products among investors. The futures contracts can be divided into 2 main types according to the currency used as underlying asset:

1) THB Cross Currency Futures: Futures contracts that have the underlying asset of foreign exchange rates against Thai baht, such as USD Futures using the US dollar as underlying asset against the Thai baht, etc., and
2) Non-THB Cross Currency Futures are futures contracts that have the underlying asset that are not related to the Thai baht, such as EUR/USD Futures, USD/JPY Futures, etc.

Interest Rate

Long-term Interest Rate

An underlying asset of Bond Futures is the 5-year loan bond (LB), a type of government bonds, with a coupon rate of 5% interest per year paid semi-annually. It is hard for a bond with exactly 5-year maturity to be available in the market as each bond's maturity decreases over time. That is why TFEX has issued a basket of eligible bonds to substitute investment in a particular bond. Those eligible bonds need to:

- Have an outstanding value of not less than 5,000 million baht per series as of the day TFEX announces the list of eligible bonds
- Have remaining maturities of 4-6 years as of the first day of the month those futures mature

TFEX applies the standard of the Thai Bond Market Association (ThaiBMA) for the selection of loan bonds. That is, it uses the bid-offer yield for MOF Outright PD transactions to determine which series the bond will be a part of. The series will then be used as underlying assets of government bond futures with a 5-year maturity. TFEX will announce seven days prior to the day any futures series start their status as nearest month series.

For example, the bond futures which matures in September 2021 (TGB5U21) comprises a basket of eligible bonds with outstanding yields of not less than THB 5,000 million as of the day TFEX announces the list of eligible bonds. Those bonds have remaining maturities of 4-6 years as of the first business day of September 2021.

Providing that, as of June 1st, 2021, the bonds as stated in Table 5-2 are available in the market and being considered to be eligible bonds.

Table 5-2: Bond Information as of June 1st, 2021

Series	Issue Code	ISIN Code	Maturity Date	Coupon (%)	Amount* (THB million)
TGB5U21	LB25DA	TH0623034C08	12-Dec-25	3.850	205,270
TGB5U21	LB26DA	TH0623036C06	17-Dec-26	2.125	240,382

*As of June 17, 2021

According to Table 5-2, LB25DA and LB26DA are considered to be eligible bonds as their maturity terms starting from September 1st, 2021 are between 4-6 years and their outstanding amounts are more than THB 5,000 million.

TFEX announces the list of eligible bonds which are underlying assets for futures series before those futures series commence their status as nearest month series. In the case of TGB5U21 of which status as a nearest month series commences in the middle of June 2021 (There are only two bond futures in each period of which details will be given later), TFEX announces the list of bonds in the basket of eligible bonds of September 2021 in early June 2021 or no later than seven days prior to the day any of those futures series commence their status as nearest month series.

Short-term Interest Rate

The Bangkok Interbank Offered Rate (BIBOR) is approved by the Bank of Thailand to be a benchmark rate for short-term interest rates in the market. Nowadays, the Bank of Thailand promotes the use of the BIBOR as a benchmark rate in interbank and key customer-and-bank transactions. Currently, most rates refer to the THBFIX interest rates. But as THBFIX rates are affected by foreign exchange rates, they may not reflect actual rates when there is fluctuation in foreign exchange rates.

The BIBOR is calculated or fixed by the Bank of Thailand based on the rates quoted by 13 banks in Thailand who are BIBOR contributors.

Figure 5-1: BIBOR Quotations as of December 30, 2022 (by banks)

Institution	O/N	1 Week	1 Month	2 Month	3 Month	6 Month	1 Year
Bangkok Bank	1.25000	1.27000	1.37000	1.44000	1.48000	1.65000	1.90000
Bank For Agriculture and Agricultural Cooperatives	1.25000	1.27200	1.37900	1.39600	1.44100	1.61900	1.89700
Bank of Ayudhya	1.25000	1.27000	1.32000	1.40000	1.45000	1.61000	1.93000

CIMB Thai Bank	1.25000	1.26000	1.27000	1.40000	1.43000	1.60000	1.83000
Kasikorn bank	1.25000	1.27900	1.30210	1.38760	1.43970	1.61680	1.90000
Krung Thai Bank	1.25500	1.27817	1.29134	1.32598	1.37264	1.75000	1.79660
Mizuho Bank	1.25000	1.27000	1.35000	1.44000	1.52000	1.70000	1.95000
Siam Commercial Bank	1.25000	1.30000	1.36000	1.45000	1.50000	1.70000	1.90000
Standard Chartered Bank	1.22249	1.25191	1.28786	1.33387	1.38245	1.56302	1.87649
Sumitomo Mitsui Banking	1.25000	1.28000	1.32000	1.39000	1.44000	1.62000	1.89000
The Government Savings Bank	1.25500	1.27000	1.30000	1.38000	1.44000	1.60000	1.90000
TMBThanachart BANK	1.25000	1.27000	1.32000	1.40000	1.47000	1.60000	1.90000
United Overseas Bank	1.25000	1.28000	1.31000	1.39000	1.44000	1.62000	1.90000

Source: Bank of Thailand

To fix a BIBOR, the Bank of Thailand eliminates the highest two rates and the lowest two rates for each interest rate category. Then, the rest is included in the calculation of average rates for each interest rate category.

The Bank of Thailand has a policy to promote the 3-month BIBOR to be used as the main benchmark according to international standards. Also, the BIBOR has high transaction value, and is expected to be even higher due to the Bank of Thailand's promotion. TFEX has therefore selected the 3M BIBOR to be another underlying asset for futures on short-term interest rate.

5.3 Ticker Symbols for Futures

TFEX has determined ticker symbols for futures and options. The abbreviations reflect important information related to the product including the contract's underlying assets, maturity month and year. For options which can be divided into put and call contracts, terms and conditions of strike price are also identified in the ticker symbol.

5.3.1 Definitions and Characteristics of Symbols for Futures

The ticker symbol for futures comprises three elements: name of underlying asset, maturity month, and maturity year.

For example, S50H22 is an abbreviation for SET50 Index Futures of which its maturity month and year are March (H) and 2022 respectively. For ease in understanding and memorization for investors, futures ticker symbols are as follows:

Table 5-3: Symbols for Underlying Assets of Futures

Futures	Underlying Asset	Symbol of Underlying Asset
SET50 Index Futures	SET50 Index	S50
Sector Futures in 5 Sector Indices	Banking Information and Communication Technology Energy and Utilities Commerce Food and Beverage	BANK ICT ENERG COMM FOOD
Single Stock Futures	Common stocks announced by TFEX	Symbol for Stock Futures are similar to stock symbols. For example, the symbol for futures referencing ADVANC is ADVANC.
Gold Futures	Gold with a purity of 96.5%	Two gold futures with different weights uses symbols as follows: - 50Baht Gold Futures: GF - 10Baht Gold Futures: GF10
Gold Online Futures	Gold bullion with 99.5% purity	GO
Gold D-Futures	Gold with a purity of 99.99%	GD
Silver Online Futures	Silver metal with 99.5% purity	SVF
Interest Rate Futures	Interest Rates: - 3-month BIBOR - 5-year Thai Government Bond	Symbols: BB3 TGB5
USD Futures	THB currency rate per USD	USD
EUR/USD Futures	Exchange rate: Euro to US dollar	EURUSD
USD/JPY Futures	Exchange rate: US dollar to Japanese yen	USDJPY
RSS3 Futures	Natural rubber ribbed smoked sheet No.3 (RSS3) in accordance with the Green Book standard. The delivered products must be standardised and produced by the manufacturer based on the criteria specified by TCH.	RSS3: Payment to be made by physical delivery or cash settlement

RSS3D Futures	Natural rubber ribbed smoked sheet No.3 (RSS3) in accordance with the Green Book standard	RSS3: Payment to be made by physical delivery
Japanese Rubber Futures	Natural rubber ribbed smoked sheet No.3 traded on Japan Exchange Group (JPX)	JRF

The second part shows letter codes for contract months which are the same as international standards used in the global markets. The letter codes are 12 English alphabets representing twelve months in the calendar.

Table 5-4: Letter Codes Specifying Contract maturity Months

Months	Letter Codes Specifying Contract Maturity Months
January	F
February	G
March	H
April	J
May	K
June	M
July	N
August	Q
September	U
October	V
November	X
December	Z

The final part displays the details of maturity years shown in A.D. years which can be easily understood among all investors. A maturity year is represented through the last two digits. For example, if a contract matures in any month of year 2022, “22” will be the symbol appearing at the final position in the ticker symbol.

Therefore, in choosing to buy or sell a contract, an investor can use the remaining maturity term of each contract to analyse the price trend during that period. For example, S50H22 of which maturity is March 2022 can be a predictor for the price of SET50 Index during March 2022.

5.3.2 Definitions and Specifications of Symbols for Options

For SET50 Index Options, in addition to considering the characteristics of underlying assets and remaining maturity, it is necessary to consider two more factors: types of options (call or put) and strike price as stated in the contract, such as call option at 850 or put option at 900 points.

Due to the additional conditions of Options, details regarding the types of right and strike price must be included in the symbol, which is stated after the maturity year. For example, S50H22C900 is a call option maturing in March 2022 and has a strike price of 900 points.

Noticeably, options have strike prices stated in the product specification. Consequently, when the index significantly changes (whether increase or decrease), the strike prices of the series currently trading are sometimes insufficient. Therefore, TFEX has increased the number of options series based on the changes of the underlying assets price. This is done by determining the strike price intervals and minimum numbers of series based on strike price intervals for each period.

The strike price interval: According to the regulations of SET50 Index Options, TFEX has set the strike price interval at 25 points. Therefore, investors will be informed of the same standard of practice what exercise price levels will be. The conditions for the minimum series of options will be set to cover the movement of the underlying Index, while being sufficient to meet the needs of investors to use trading strategies. It specifies that each day there must be SET50 Index Options with At-the-money status of 1 series, and SET50 Index Options with In-the-money status & Out-of-the-money status of at least 4 series on each side. To consider the status of SET50 Index Options is to compare the exercise price of the SET50 Index Options with the closing price of SET50 Index on the previous business day.

For example, if you want to know that on the first day of trading SET50 Index Options, which options with strike price will be available for trading, you must start by considering that At-the-money Options is at what strike price level. Assuming that the SET50 Index closed at 1,003.24 points on the previous business day, then At-the-money Options are SET50 Index Options with an exercise price of 1,000 points[9]. This is based on the fact that TFEX specifies that the strike price interval be an integer and equal to 25 points. Therefore, In-the-money Call Options (exercise price below SET50 Index level) that are available for trading are Series with exercise prices of 975, 950, 925 and 900 points respectively, or 4 intervals down counting from the At-the-money Series. Similarly, Out-of-the-money Call Options (exercise price higher than SET50 Index level) that are available for trading are therefore Series with exercise prices of 1,025, 1,050, 1,075 and 1,100 respectively, or 4 intervals up counting from At- the-money Series.

[9] According to the TFEX standard, the strike price interval is 25 points. A strike price of SET50 Index Options must be a whole number divisible by 25. If the closing price index as of the previous business day is indivisible by 25, the remainder of less than or equal to 12.50 will be rounded down to the whole number divisible by 25. On the contrary, the remainder of greater than 12.50 will be rounded up to the whole number divisible by 25. The whole number divisible by 25 after rounding is the strike price of At-the-money options.

Using the same principle, in the case of SET50 Put Options, there are: 1 Series of At-the-money Put Options (exercise price equal to 1,000 points) and 4 Series of In-the-money Put Options (exercise price above SET50 Index level) consisting of Series with exercise prices of 1,025, 1,050, 1,075 and 1,100 points respectively. There are 4 Series of Out-of-the-money Put Options (exercise prices below SET50 Index level) consisting of Series with exercise prices of 975, 950, 925 and 900 points respectively, as shown in Figure 5-5.

Table 5-5: Option series available for trading in each settlement month

Call	Strike Price	Put
S50C1100 Out-of-the-money	**1,100**	**S50P1100** In-the-money
S50C1075 Out-of-the-money	**1,075**	**S50P1075** In-the-money
S50C1050 Out-of-the-money	**1,050**	**S50P1050** In-the-money
S50C1025 Out-of-the-money	**1,025**	**S50P1025** In-the-money
S50C1000 At-the-money	**1,000**	**S50P1000** At-the-money
S50C975 In-the-money	**975**	**S50P975** Out-of-the-money
S50C950 In-the-money	**950**	**S50P950** Out-of-the-money
S50C925 In-the-money	**925**	**S50P925** Out-of-the-money
S50C900 In-the-money	**900**	**S50P900** Out-of-the-money

From Table 5-5, it can be seen that in each settlement month, there will be at least 9 Series of SET50 Call Options for trading (1 series of at-the-money options, 4 series of in-the-money options, and 4 series of out-of-the-money options), including 9 Series of SET50 Put Options available for trading, totalling

at least 18 Series. Due to the fact that TFEX specifies that at any point in time there are usually 4 different maturity months of SET50 Index Options being traded, therefore, at any given point in time, for every delivery or settlement month, the total number of Options Series is at least 72 Series.

The fact that TFEX specifies a large amount of SET50 Index Options at various exercise prices for trading is for the benefit of investors in buying or selling Options Series with different strike prices or different settlement months so they can form their different strategies as required. In addition, investors can also create the type of payoff or returns the way they prefer at an acceptable risk level.

The impact of changes on the SET50 Index level

From the above example: If at the end of the next business day, the SET50 Index level rises to close at 1,012.96 points, how will this affect the number of Options Series open for trading? In considering such impact, adhere to the principle that at any given time the options traded must have at least 1 Series of At-the-money, 4 Series of In-the-money, and 4 Series of Out-of-the money.

In this case, to consider the impact: We start by considering the At-the-money Series[10] when SET50 Index is at 1,012.96 points, which means that the At-the-money Series is the Options with an exercise price of 1,025 points. After that, consider whether or not there are at least 4 Options Series in the status of In-the-money for Call and Put, and at least another 4 Options Series in the status of Out-of-the-money for Call and Put?

Table 5-6: Option series available for trading when there is change in At-the-money Series

Call	Strike Price	Put
S50C1125 Out-of-the-money	**1,125**	**S50P1125** In-the-money
S50C1100 Out-of-the-money	**1,100**	**S50P1100** In-the-money
S50C1075 Out-of-the-money	**1,075**	**S50P1075** In-the-money
S50C1050 Out-of-the-money	**1,050**	**S50P1050** In-the-money

[10] The strike price is 1012.96 points. After rounding up 12.96 to a whole number divisible by 25, SET50 Index is 1025 points.

Call	Strike Price	Put
S50C1025 At-the-money	**1,025**	**S50P1025** At-the-money
S50C1000 In-the-money	**1,000**	**S50P1000** Out-of-the-money
S50C975 In-the-money	**975**	**S50P975** Out-of-the-money
S50C950 In-the-money	**950**	**S50P950** Out-of-the-money
S50C925 In-the-money	**925**	**S50P925** Out-of-the-money
S50C900 In-the-money	**900**	**S50P900** Out-of-the-money

According to Table 5-6, at the end of the first business day SET50 changed from 1000 points of the previous day to 1012.96 points at the end of the second business day. This causes a change in the At-the-money options series from the strike price of 1000 to 1025 points[11].

The In-the-money Call Options (exercise price below the SET50 Index level) consist of a total of 5 Series: Options with exercise prices ranging from 1,000 points to 900 points. The additional Series is the Call Options with an exercise price of 1,000 points, which is the original At-the-money Series that has changed its status to In-the-money Call Options as a result of the change in the SET50 Index level. Correspondingly, the Out-of-the-money Put Options (exercise price below SET50 Index level) can be explained in the same way.

As for Out-of-the-money Call Options (exercise price above SET50 Index level), the Out-of-the money Call Options Series with exercise price above SET50 Index level will have only 3 Series (these are: Series with exercise price from 1,050 points to 1,100 points). Therefore, on the following business day, TFEX will allow trading of one more Series of Call Options: Call Options with exercise price of 1,125 points, in order to have at least 4 Series of Options with Out-of-the-money status in the trading process.

[11] The whole number divisible by 25 and closest to 1,012.96 points after rounded up is 1,025 points because the value of the two final place values with the decimals is greater than 12.50 points.

In the case of In-the-money Put Options (exercise price above Index level), there are only 3 Series of In-the-money Put Options left (these are: Series with strike price of 1,050 points). Therefore, on the following business day, TFEX will open trading of 1 more Series of Put Options: Put Options with the strike price of 1,125 points.

SET50 Index Options have four different settlement months, so, when in trading, Out-of-the-money call options and In-the-money put options must be made available in every settlement month. In conclusion, a change in the SET50 index causes TFEX to offer eight series for trading which are one series of Out-of-the-money call options and one series of In-the-money put options for each of the four settlement months.

5.4 Contract Sizes

5.4.1 Contract Sizes and Definitions

As futures and options contracts relates to trades that will happen in the future, apart from time of trading, another important factor is the contract size or multiplier which determines the overall quantity of underlying assets represented by those futures and options contracts. A contract size is determined to meet the specification of the underlying assets. The contract size is a multiplier in case of indices. For example, the SET50 Index is an underlying asset of SET Index Futures, so the multiplier is THB 200 per point. Then, SET50 Index Futures displays a number with two decimals, e.g. 1050.00. The use of THB 200 as the multiplier for SET Index Futures is meant to convert an index value point to a money amount which makes settlement and calculation of profit and loss easy and convenient.

For example, an investor holds a buy position of one contract of SET50 Index Futures priced at 1040.00 points and sells it at 1049.00 points. The investor gains a profit of THB 1,800 (calculated from (1049.00-1040.00) x THB 200/contract = THB 1,800). In addition, the multiplier is the determinant of the value or contract size. For example, the trading price of SET50 Index Futures is 1050.00, so the contract value or size is 1050 x THB 200 or THB 210,000 per contract).

If an underlying asset has a clear size indicator, that indicator is then used to determine the contract size, e.g. 5000 kg ribbed smoked sheet rubber per contract or 10-baht gold.

The contract size of SET50 Index Options is equivalent to that of SET50 Index Futures, which is THB 200/index point. However, the price of a traded option is in the form of a premium which may be the theoretical price or an expected price given by investors. Theoretically, the factors affecting option prices are the underlying indices, strike prices, price volatility, interest rates, dividend yields, and maturity. The option trading price is called the premium.

For SET50 Index Options, investors are required to quote a trading price in index points with two decimals, e.g. 40.50 points. The multiplier is THB 200

per index point which converts an index point to a money amount, making settlement more convenient. For example, an investor holds a buy position of one contract of SET50 Index Options priced at 40.50 points and sells it at 42.00 points. The investor gains a profit margin of THB 300 (calculated from (42.00 - 40.50) x THB 200 = THB 300).

5.4.2 Adjustment of Contract Sizes of Single Stock Futures Due to Corporate Actions on Underlying Stocks

In the event of corporate actions on underlying stocks, the value of single stock futures always changes. If there is no appropriate adjustment in contract terms - contract size or open interest or position, one or the other holder of the futures may lose benefits.

For example, the contract size of ABC Futures is 1,000 shares. If ABC Company announces par decrease from 1 existing share to 10 new shares (split par value), if TFEX does not adjust the contract terms of ABC Futures, both long and short position holders will be affected. Adjustments include an increase of 10 times in position limits, an increase of 10 times in the contract size, a reduction by 10 times in the settlement price, etc. The objective of those adjustments is to have the contract correspond with stock prices after the par value split by 10 times and a reduction in futures prices. This measure is fair to futures holders.

Principles of Adjustment of Single Stock Futures Contracts Due to Corporate Actions

When a corporate action occurs affecting the underlying stocks of single stock futures, TFEX may consider undertaking one or a number of adjustments to single stock futures as follows:

- Adjustment of the contract size
- Adjustment of contracted price - the price of single stock futures matched by the Trading system of TFEX and recorded in the system of Thailand Clearing House (TCH) and the settlement price
- Adjustment of the open interest or open position of the contract

If necessary, TFEX may require cash settlement, delist the single stock futures of that common stock, or take other actions as appropriate.

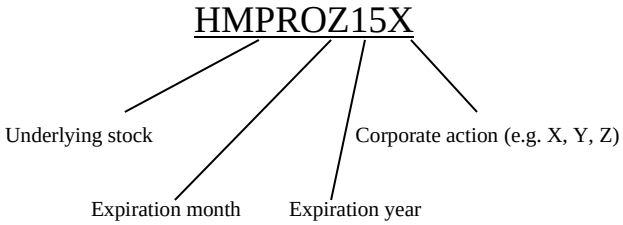
In general, the adjustment of single stock futures when corporate actions are taken follows the following standard.

Table 5-7: Forms of Corporate Actions and Single Stock Futures Adjustment Standard

Forms of Corporate Actions	Adjustments
Capital increase by means of right issuing or the receipt of transferable subscription rights (TSRs) to existing shareholders	The adjustment is made if the subscription rights of newly issued shares or TSRs received by existing shareholders in proportion to their shareholding rights are "in the money", that is, the strike price is lower than to the closing price of the underlying stock as of the business day prior to the date in which an 'X' is marked (showing that the offered price does not include benefits from holding such securities).
Par value adjustment	The adjustment is made in case of stock split up or stock split down.
Issue of stock dividends to existing shareholders	The adjustment is made in case a listed company of which stocks are underlying stocks of single stock futures issues stock dividends to its existing shareholders in proportion to the number of shares they hold.
Issue of extraordinary dividends or give capital return to existing shareholders	The adjustment is made in case a listed company of which stocks are underlying stocks of single stock futures announces an issue of extraordinary dividends or give capital return to its existing shareholders.
Mergers and Acquisitions / Takeovers	The adjustment is made in case a listed company of which stocks are underlying assets of single stock futures is affected by a merger, acquisition, takeover or there is a significant change in the company structure which affects the underlying stocks. For example, its underlying stocks are delisted after a merger or are no longer qualified as underlying stocks of its single stock futures.

In case of other corporate actions not mentioned in the table, TFEX may consider adjusting the contract as appropriate on a case-by-case basis.

When the contract size is adjusted and the contract size is no longer 1,000 shares/ contract, there will be three additional trading codes – X, Y, and Z – showing the number of times it has been adjusted (1st, 2nd, or 3rd time).



5.5 Settlement Months

5.5.1 Definitions and Specifications of Settlement Months

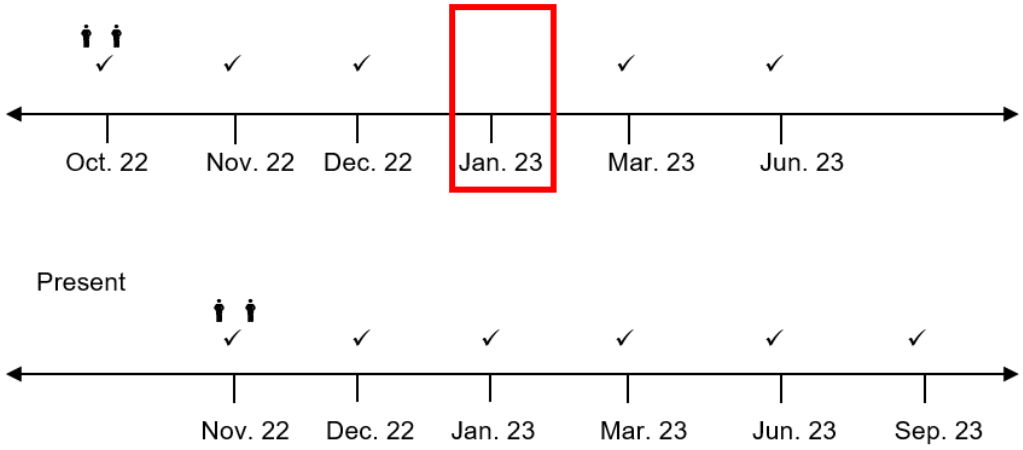
The settlement month is an important factor which determines the price of futures and options (premium). This is because according to the terms, when a contract matures, a settlement must be made. As the maturity term determines the price of underlying assets at an exact time in the future, investors can estimate the price of futures that reference it. For each period, TFEX determines different settlement months, so each contract type or series is available for trading in different times. For example, SET50 Index Futures will have a settlement month which is in the three nearest consecutive months and the final month of the quarter in the next three quarters. Therefore, during the final month of each quarter: March, June, September, and December, there will be six series of SET50 Index Futures with different settlement months.

Providing that the present month is October, 2022, there would be 6 series of SET50 Index Futures with different settlement months as follows:

- October 2022 (Maturity: the nearest month)
- November 2022 (Maturity: the 2nd month of three nearest consecutive months)
- December 2022 (Maturity: the 3rd month of three nearest consecutive months)
- March 2023 (Maturity: the final month of the nearest quarterly months)
- June 2023 (Maturity: the final month of the 2nd nearest quarterly months)
- September 2023 (Maturity: the final month of the 3rd nearest quarterly months)

At the end of October 2022, SET50 Index Futures of which the settlement month is October 2022 will reach maturity followed by those of which maturity is in November 2022 and December 2022, respectively. There will be another SET50 Index Futures of which settlement month is January 2023. The rest are those of which the settlement months are March, June, and September 2023. Therefore, there are six series available for trading as seen in Table 5-2. In practice, TFEX requires a new series (January 2023) to be traded on the final day the existing series matures (October 2022).

Figure 5-2: Settlement Months of SET50 Index Futures



5.5.2 Settlement Months of Futures in TFEX

The settlement month of futures and options contracts is determined based on demand by different types of investors. The types of settlement month for derivatives products currently traded at TEFX are mainly as follows:

1. Monthly contract – a contract for underlying assets that are demanded on a monthly basis, i.e. rubber futures which has 7 consecutive settlement months or gold futures whereby settlement is made only on even months of the year.

2. Quarterly contract – a contract for underlying assets that are demanded on a quarterly basis or, in particular, on the last month of each quarter (March, June, September and December). An example is Single Stock Futures on stocks that pay dividends quarterly as it creates demand for trading futures in order to gain profit during those specific periods.

As demand for futures contracts may vary according to market situations, there will be contracts available with both monthly and quarterly settlement months. For example, at any time, there will be SET50 Index Futures, that has settlement months in the 3 nearest consecutive months plus contracts that mature in the next 3 quarterly months, totaling to six series of SET50 Index Futures. This is so that investors will have investment choices both monthly and quarterly to choose from.

5.6 Price Quotation

5.6.1 Definition and description

By having a standard quoted price in TFEX can promote opportunities for more order matching, allow trades to be done conveniently, and is in line with practices of other derivatives markets wherein blind trades are operated. Price quotation is also required to be aligned with the price movements of the underlying assets so that investors can yield profits and be more convenient for investment portfolio management.

5.6.2 Price quotation

Futures price quotation in TFEX follows the same international standards as in other overseas markets contracts referencing similar underlying assets. Price quotations are as follows.

1. Quoted prices for SET50 Index Futures and Sector Futures are referred to as Index Points in order to be consistent with index movement and forecasting. The same goes for the SET50 Index Options. The quoted prices are also in Index Points and called the premium.

2. Pricing unit is in line with the unit of the underlying commodity. Baht per one baht-weight of gold (96.5% purity), for instance, is used for price quotation of Gold Futures so as to facilitate trading and price comparison.

3. Quoted price is in relation to the purpose of the contract. This condition is specifically applicable to short-term interest rate futures on interest rates. In this case, the quotation price can be calculated using the formula, (1 – the short-term interest rate that one wishes to buy/sell in the future) * 100. For example, if one wants a future interest rate at 3%, the quoted price of the futures contract is 97.

5.7 Daily Price Limit

5.7.1 Definition and description

Futures and options require the involvement of two parties, in which the parties involved may incur tremendous loss despite the fact that there is daily mark to market. This is in the circumstance where there is extreme price volatility on the price of the underlying during the day causing massive effect on the counterparties' trades. A daily price limit is therefore established to protect investors against such market conditions.

5.7.2 Determining the Daily Price Limit

The daily price limit is set to protect investors against risk to a certain point. However, if the limits are too narrow or too wide, it may become an obstacle for market participants in reaching their trading objectives. Therefore, the daily price limit for each underlying asset is different depending on its price volatility (See Appendix for details of the daily price limit).

Since there is a relationship between the price of the underlying asset and the futures, the futures' price range is generally set as a proportion of its price on the previous business day. TFEX also uses this method. For contracts in which there is continuous availability of the underlying asset's price, the daily limit is set to be the same as the limit for the underlying asset, which is ±30% of the previous settlement price. This is for instance in the case of SET50 Index Futures and Single Stock Futures.

However, when the underlying price is not continuously available, such as in the case of Gold Futures, contracts where the underlying asset is traded in OTC markets, or underlying assets that are traded all over the world and there is no central price to reference, a circuit breaker system will be exercised as the daily price limit. In this method, if the price hits a certain point triggering a circuit breaker, a trading halt will be announced. This halt is period is to help investors to thoroughly consider all available data, monitor the price changes (analyze why

the changes occur), and review their trading strategies. After the halt, the trading session will reopen. This time, the daily price limit will be expanded to a certain extent in order to facilitate trades and decision making.

As for options, the premium's relationship with the price of the underlying asset is quite complex. For this reason, determining the premium can be complicated. The daily price limit for options is therefore set to be a proportion of the underlying asset's price of the previous day.

Therefore, TFEX sets the daily price limit for SET50 Index Options as follows:

Daily Price Limit	=	±30% of the previous day's closing SET50 index

If the lowest price is a negative value, the lowest price will be 0.10 index points.

Provided that the latest settlement price for SET50 Index Options with the settlement month of October 2022, and exercise price of 1000 index points is equal to 30 index points and the closing index points for SET50 Index on the previous day is 1020 index points, the daily price limit for SET50 Index Options of the given series can be computed as follows:

- The ceiling price: 30 + (0.3)(1,020) = 30 + 306 = 336 index points
- The floor price: 30 – (0.3)(1,020) = 30 – 306 → 0.10 index points (the allowable lowest price when a negative yield is obtained.)

5.7.3 Trading when the price change reaches the set level

When trading on TFEX, investors can place an order with a quoted price within the Daily Price Limit as specified in the contract nature of each product. For example, TFEX specifies that SET50 Index Futures trading can have a daily maximum or minimum change of not over + 30% of the latest settlement price (such as if Day 1, the daily settlement price of SET50 Index Futures is equal to 1,000 points, then the futures price on Day 2 may increase or decrease by not over 30% of 1,000 points, that is + 300 points or 1,000 x 30%, etc.), so the price on Day 2 can vary between 700 - 1,300 points, or in other words, the ceiling and floor of the trading price on Day 2 are 1,300 points and 700 points in that order.

As for the products with specification of the maximum change of the price level of the trading price at two levels, when the trading price reaches the first level of Daily Price Limit, TFEX will stop matching trades for a period of time (currently set to stop trading for 2 minutes) and expand the Daily Price Limit to the second level. It is set to be the Pre-open period and trading orders can be sent in.

For example, at the end of the business day, 50 Baht Gold Futures has the latest daily settlement price of THB 30,000. The first and second levels of Daily Price Limit are + 10% and + 20% from the latest daily settlement price respectively. Therefore, the first levels of Floor and Ceiling are THB 27,000 and THB 33,000. If the trading is at THB 27,000 or THB 33,000, TFEX will temporarily stop trading for 2 minutes and extend the price limit to + 20% from the price used in the latest daily settlement or adjust the Floor and Ceiling of the trading price to THB 24,000 and THB 36,000. Investors can still send trading orders during those 2 minutes.

However, if during that trading period there are less than 2 minutes of the remaining trading time, TFEX may consider matching trades when the trading session ends.

5.8 Trading Hours

5.8.1 Definition and description

Determining futures and options trading hours has the same objective as other features and conditions of futures and options, that is, to allow investors to trade according to the price changes or market conditions of the underlying asset. Therefore, the trading hours of futures and options is set to be the same as the trading hours of the underlying asset. Moreover, TFEX has considered trading strategies of contracts with underlying assets that are traded overseas such as Gold Futures and Rubber Futures. In this case, the trading hours is adjusted to be in line with global markets to allow investors to have the opportunity to gain profit between markets as well.

5.8.2 Trading sessions

There are many types of trading sessions in TFEX which may be different depending on the underlying asset. In general, there is a pre-open using auction method followed by automatic order matching which has three trading sessions available per day: morning, afternoon, and night.

Morning session usually runs from 9:15 hrs. for investors to manage their orders and starts its regular session for order matching at 9:45 hrs.

- Pre-open: 9:15 – 9:45 hrs.
- Morning session: 9:45 – 12:30 hrs.

Currently, trading of Rubber Futures is allowed to continue from morning session to afternoon session with no intermission after 12:30 hrs. This is to give investors opportunities to keep track of global price movements during hours of trading in other markets as TOCOM or derivatives markets in India.

Afternoon session usually runs from 13:15 hrs. for investors to place orders and starts its regular session for order matching at 13:45 hrs.

- Pre-open: 13:15 – 13:45 hrs.
- Afternoon session: 13:45 – 16:55 hrs.

It is however noted that Gold-D Futures trades ceases at 16:30 hrs. and Interest Rate Futures trades ceases at 16:00 hrs., as there are not so many orders from that time onwards.

For night-time trading, TFEX is open for trading of products traded in international markets during such hours, providing investors with the opportunity to adjust their investment strategies to keep up with global market prices. Products consists of Gold Futures, Gold Online Futures, Gold-D Futures and

Silver Futures, starting from 18:45 hrs., allowing investors to submit trading orders again, and the matching/trading will start from 18.50 hrs. onwards.

- Pre-open: 18:45 – 18:50 hrs.
- Night session: 18:50 – 03:00 hrs. (on the next day)

For Currency Futures trading, TFEX is only open for trading during the Night Session until 23:55 hrs.

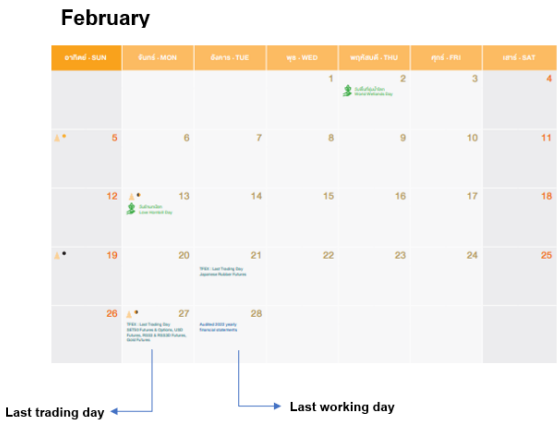
5.9 Last Trading Day

5.9.1 Definition and description

The last trading day is important for trading as it is the final day that a futures contract can be traded or automatically closed out or automatically exercised for options. TFEX will announce the closing price which is calculated from prices of the underlying assets. Therefore, the last trading day must fall on the day in which the underlying asset price is available. The last trading day for futures and options with the same underlying, e.g., SET50 Index Futures and SET50 Index Options, will be the same day.

5.9.2 Characteristics and specifications

The last trading day of options or futures contracts is the day immediately preceding a contract's expiration date. Adjustment for terms pursuant to the last trading day can, however, be made and is subject to trading liquidity in certain periods of the month. The last trading day of Interest Rate Futures, for example, is the third Wednesday of the expiring contract month as it is the period in which bond auction is conducted and thus shows the highest liquidity.



5.10 Final Settlement Price

5.10.1 Definition and description

After trading ceases on the last trading day, TFEX will announce the final settlement price. The Final settlement price represents a fixed settlement price for all open-position futures contracts and for long options holders at the moment.

Final settlement price shall be carefully calculated with fairness and transparency to ensure it is unbiased, acceptable among investors, and reflects the price of the underlying on that day. This day is also the final settlement day therefore the method of calculation must be clear and transparent to promote confidence among investors.

5.10.2 Determining the Final settlement price

Conditions and final settlement prices of contracts traded in TFEX are made clear and can be checked using available data which can be found in the platforms of the underlying assets. The underlying assets are:

SET50 Index Futures, Sector Futures, and SET50 Index Options.

The final settlement price shall be the numerical value rounded to the nearest two decimal points as determined by calculating from the average value plus the closing index value during the last 15 minutes (16:15 – 16:30) after deleting the three highest and three lowest values.

Example: Calculation of SET50 Index Futures final settlement price
Provided that the SET50 index during the time 16:15:01-16:30:00 and the SET50 closing index of the last trading day are as in Table 5-8, the average index value for the final settlement price shall be calculated as demonstrated in Table 5-8.

Table 5-8: Movement of SET50 Index during the Last 15 Minutes of Trading

	Time	Set50 Index	Deleted Values	Values for Calculating Average Price
1	16:15:02	1,045.87		1,045.87
2	16:15:17	1,045.62		1,045.62
3	16:15:32	1,045.66		1,045.66
4	16:15:47	1,045.54	→Third lowest value	
5	16:16:02	1,046.02		1,046.02
6	16:16:16	1,045.96		1,045.96
7	16:16:32	1,045.75		1,045.75
8	16:16:47	1,046.40		1,046.40
9	16:17:02	1,046.01		1,046.01
10	16:17:17	1,046.16		1,046.16
11	16:17:32	1,046.09		1,046.09
12	16:17:47	1,046.04		1,046.04
13	16:18:01	1,046.03		1,046.03
14	16:18:17	1,045.88		1,045.88
15	16:18:33	1,046.31		1,046.31
16	16:18:48	1,045.72		1,045.72
17	16:19:02	1,045.86		1,045.86
18	16:19:17	1,045.58		1,045.58
19	16:19:33	1,045.61		1,045.61
20	16:19:47	1,046.02		1,046.02
21	16:20:03	1,045.47	→ Second lowest value	
22	16:20:18	1,045.41	→First lowest value	
23	16:20:33	1,046.07		1,046.07
24	16:20:47	1,045.81		1,045.81
25	16:21:03	1,046.04		1,046.04
26	16:21:18	1,046.00		1,046.00
27	16:21:33	1,045.41	→First lowest value	
28	16:21:48	1,046.21		1,046.21
29	16:22:03	1,046.59		1,046.59
30	16:22:18	1,045.99		1,045.99
31	16:22:33	1,045.72		1,045.72
32	16:22:48	1,045.85		1,045.85
33	16:23:03	1,045.67		1,045.67
34	16:23:18	1,046.15		1,046.15
35	16:23:33	1,045.99		1,045.99
36	16:23:48	1,046.34		1,046.34
37	16:24:03	1,046.33		1,046.33
38	16:24:18	1,046.70		1,046.70
39	16:24:33	1,046.66		1,046.66
40	16:24:48	1,047.03	→First highest value	

41	16:25:03	1,046.94	→Second highest value	
42	16:25:17	1,046.07		1,046.07
43	16:25:34	1,046.25		1,046.25
44	16:25:48	1,046.61		1,046.61
45	16:26:03	1,046.40		1,046.40
46	16:26:19	1,046.19		1,046.19
47	16:26:34	1,046.75		1,046.75
48	16:26:49	1,046.07		1,046.07
49	16:27:04	1,045.99		1,045.99
50	16:27:18	1,046.15		1,046.15
51	16:27:33	1,046.50		1,046.50
52	16:27:48	1,046.24		1,046.24
53	16:28:03	1,046.19		1,046.19
54	16:28:19	1,046.20		1,046.20
55	16:28:34	1,046.85		1,046.85
56	16:28:49	1,046.17		1,046.17
57	16:29:04	1,045.55		1,045.55
58	16:29:19	1,046.00		1,046.00
59	16:29:34	1,046.75		1,046.75
60	16:29:49	1,046.41		1,046.41
61	16:30:04	1,046.87	→Third highest value	
62	16:36:34	1,046.19	Closing index value	1,046.19
			Average value	= 57,536.24 / 55 = 1,046.11

Remark: The lowest value deleted is 4 as there are two duplicate values of 1,045.41.

Final settlement price = [(Set50 index taken during the last 15 minutes plus SET50 closing index value) - (Three highest index values) - (Three lowest index values)] / [(The total amount of SET50 index) - (The total number of the highest index values) - (The total number of the lowest index values)]
= [57,536.24] / [55]
= 1,046.11

Accordingly, the average SET50 index value used as the final settlement price for SET50 Index Futures of the expiring series is 1,046.11 index points.

It is noted that this final settlement price will be utilized by the clearing house only for the series expiring on that day. The calculation for the other series will turn to the daily settlement price.

Single Stock Futures

Similar to other types of futures contracts, final settlement price of Single Stock Futures can be determined and calculated based on the stock trading and

closing price of the underlying assets during the last 15 minutes of the last trading day, rounded to two decimal points.

Gold Futures

Final settlement price of Gold Futures in TFEX references gold price announced by the London gold market which is one of the world's largest and most important gold trading center. The expiring series of Gold Futures will cease trade at 16:30 pm which is 10:30 am in London, the same time as London market's morning fixing time. The exchange rate used is quoted on that day at 15:30 pm. Transaction must be made by buyers and sellers on the day immediately after the final trading day. The formula for final settlement price calculation is as follows:

Price per one baht weight of gold = London Gold A.M. Fixing
x (15.244/31.1035) x (0.965/0.995)
x (THB/USD)

Example: The last trading day for Gold Futures expiring in October 2022 will be 28 October. On this day, London Gold A.M. Fixing price at 10:30 hrs. is 1,649.25 US Dollars per one troy ounce and the exchange rate obtained from Thomson Reuters is fixed at 15:30 hrs. is 37.8113 Baht per US Dollar as shown in Picture 5-3.

Figure 5-3: Reference price for calculating the final settlement price of Gold Futures

Date	Gold Price (LBMA Gold Price A.M.)		Exchange Rate	
28 October 2022	USD/troy ounce	Time	THB/USD	Time
	1,649.25	16:31	37.8113	15:30

Final Settlement Price = London Gold AM Fixing x (15.244/31.1035)
x (0.965/0.995) x (THB/USD)
= 1,649.25 x (15.244/31.1035) x (0.965/0.995) x 37.8113
= 29,641.63 Baht per one baht weight of gold

Gold-D Futures

Investors holding Gold-D Futures until the last trading day or contract's expiration date shall seek a settlement by physical delivery with delivery price calculated in the same way as its daily settlement price rounded to two decimal points.

In accordance with Fixing Price establishment of London Gold Fixing, Gold-D Futures daily settlement price is determined using the last 30 minutes

volume weighted average price (VWAP). Although Gold-D Futures is traded in US dollars, settlement is still done in Thai Baht currency. TFEX therefore uses the exchange rate of 15:30 pm announced by the commercial banks. The formula for its calculation as published by Thomson Reuters is as follows:

Settlement Value (THB) = Settlement Price (USD) x (THB/USD) x 3.2148

Remark: Gold-D Futures contract size = 3.2148 troy ounces

Gold Online Futures

TFEX specifies that the settlement be carried out in cash, using the LBMA Gold AM Fixing published by the ICE Benchmark Administration, of the last day of trading. It is the reference price for calculating the price for delivery or reference in order to calculate the difference in price for the purpose of settlement on the last trading day (final settlement price), without taking the exchange rate into calculation.

Silver Online Futures

TFEX specifies that the settlement be carried out in cash, using the LBMA Silver Price Fixing published by the ICE Benchmark Administration, of the last day of trading. It is the reference price for calculating the price for delivery or reference in order to calculate the difference in price for the purpose of settlement on the last trading day (final settlement price), without taking the exchange rate into calculation.

Interest Rate Futures – 5 Year Government Bond futures

The settlement of the 5-Year Government Bond futures contracts results in a cash settlement amount instead of a bond delivery. The final settlement amount is referenced to the yield on the basket of eligible bonds which is a representative of the underlying government bond for each series. Moreover, the final settlement price on the final settlement date shall be calculated from the primary dealers' Bid-Offer Yield of underlying government bonds and/or of other financial institutions as stipulated by TFEX. The details are as follows:

1) The calculation of the average yield for each government bond series (Mid Range)

   - The yield data for each government bond series from primary dealer and/or other financial institutions are considered separately and in each series the average Bid and Offer Yields are sorted in order. For example, Bid Yields are sorted in descending order and then discard the highest and the lowest values to calculate the average Bid Yield. This is to ensure that the calculations will not be affected any outliers. A similar calculation is performed for the Offer Yield.

- The Mid Range is then calculated from the average Bid and Offer Yield. This Mid Range will then be used as a proxy to calculate the price of each Government Bond Series. Similar calculations are performed to calculate the yield representing the bonds in the basket of eligible bonds.

2) The calculation of the Final Yield of the Basket of Eligible Bonds

- The Final Yield of the Basket of Eligible Bonds is calculated by calculating the equally weighted average of the Mid Ranges of all bonds in the Basket of Eligible Bonds. This Final Yield is used to calculate the Final Settlement Price. The number of decimal places used in the calculation of the Final Yield is 4 decimal places. For example, the Final Yield of 3.53285% will be rounded to 3.5329% (Round up if the 5th decimal place is 5 or higher).

3) The calculation of the Final Settlement Price

a. The formula to calculate Final Settlement Price from Final Yield is

$$\text{Final Settlement Price} = \sum_{i=1}^{10} \frac{2.5}{(1+\frac{y}{2})^{i}} + \frac{100}{(1+\frac{y}{2})^{10}}$$

or

$$\text{Final Settlement Price} = \left\{\frac{c}{y}\left(1-(1+\frac{y}{2})^{i}\right) + (1+\frac{y}{2})^{-10}\right\}$$

where:

c is Coupon rate. For instance, coupon rate is 5%, so, c is 0.05

y is Final Yield. For instance, Final Yield is 3.4050%, so y is 0.034050.

Moreover, Final Settlement Price stipulated by TFEX is 100 Baht per bond and the number of decimal places used in the calculation of Final Settlement Price is 4 decimal places.

Example: Basket of Eligible Bonds is comprised of 3 Series of bonds and there are 9 financial institutions offering to buy and offer each Series of bonds. The details are as follows:

Figure 5-4: Sample of the calculation of the Final Yield used in calculation of Final Settlement Price of 5 Year Government Bond Futures.

	Bond 1	Bond 2	Bond 3	
Bid 1	~~**3.2800%**~~	~~**3.1900%**~~	~~**3.3300%**~~	
Bid 2	3.5935%	3.4000%	3.4200%	
Bid 3	3.6210%	3.4300%	3.5800%	
Bid 4	3.6800%	3.4710%	3.6500%	
Bid 5	3.6900%	3.5435%	3.7310%	
Bid 6	3.8300%	3.5800%	3.7400%	
Bid 7	3.8700%	3.5900%	3.8400%	
Bid 8	3.9400%	3.8400%	3.8800%	
Bid 9	~~**3.9540%**~~	~~**3.9200%**~~	~~**3.9854%**~~	
Offer 1	~~**3.0100%**~~	~~**3.0100%**~~	~~**3.0300%**~~	
Offer 2	3.1400%	3.0800%	3.0900%	
Offer 3	3.1400%	3.0900%	3.1200%	
Offer 4	3.1410%	3.1100%	3.1400%	
Offer 5	3.1500%	3.1100%	3.1750%	
Offer 6	3.1500%	3.2600%	3.1900%	
Offer 7	3.1570%	3.3100%	3.2510%	
Offer 8	3.1572%	3.3400%	3.2770%	
Offer 9	~~**3.1600%**~~	~~**3.3600%**~~	~~**3.3990%**~~	
Average	**3.447121%**	**3.368179%**	**3.434571%**	3.416624%

Final Yield	3.4166%

The Mid Range is calculated separately by series. The bid prices are sorted in ascending order and then discard the highest and lowest data of bid prices. From picture 5-4, the bond price 1 discards the lowest bid price at 3.2800% and the highest bid price at 3.9540%. The offer prices are also sorted in ascending order and then discard the highest and the lowest offer prices as well. When the remaining bid and offer data are calculated to find the average (In this case, there are 14 data points remaining), it is found that Mid Range of bond 1 is at 3.447121%

The Mid Range of other Government Bond Series within the Basket of Eligible Bonds, which are Bond 2 and Bond 3 are 3.368179% and 3.434571% respectively. The Final yield of the Basket of Eligible Bonds is the average of the Mid Ranges of all bonds in the Basket of Eligible Bonds. This will be the Final Yield used to calculate the Final Settlement Price. The number of decimal places used in the calculation of the Final Yield is four. From the example, the average mid range is 3.416624%. Therefore, the final Yield is 3.4166% (Round up if the 5th decimal place is 5 or higher).

In order to obtain the Final Settlement Price, substitute the Final Yield obtained into the calculation (according to the stated formula) of the price of a 5 Years semi-annual Government Bond with 5% coupon rate. The Final Settlement price shall consist of 4 decimal places. For instance, suppose the value obtained from

the formula is 107.2212828, the final settlement price will be rounded to 107.2213.

Interest Rates Futures: 3M BIBOR Futures

Upon reaching the end of the trading session of the last trading day, TFEX will use the 3M BIBOR announced by the Bank of Thailand at 11 am of that day as the Final Settlement Price for the maturing series of contracts.

Currency Futures

For Baht/USD Futures, TFEX specifies the exchange rate of Thai baht to US dollar calculated in accordance with the guidelines and disseminate via Thomson Reuters at 11:00 a.m., which is the rate used by many contributors and is the rate used by commercial banks as reference in practical transactions.

The EUR/USD Futures and EUR/JPY Futures: TFEX specifies to use the exchange rate announced by Refinitiv (Thomson Reuters: WM Spot Rate) at 11:00 a.m. on the last day of trading. It is the reference price to calculate the Final Settlement Price.

Agriculture Futures: RSS3/RSS3D Futures

Calculation of the Final Settlement Price of Rubber Futures shall depend on the type of contract: RSS3 Futures resulting in a cash settlement and RSS3D Futures resulting in physical delivery respectively.

1. The calculation of the Final Settlement Price of RSS3 Futures

    1.1. If the on the last trading day the trading volume is more than 100 contracts AND not less than 10% of the previous trading day's Open Interest: Use the Volume Weighted Average Price (VWAP) of the last trading day, rounded to 2 decimal places,

    1.2. Otherwise: Use the simple average of the last three Daily Settlement Price including the last trading day, rounded to 2 decimal places.

2. The calculation of the Final Settlement Price of RSS3D Futures

2.1 Use the Volume Weighted Average Price (VWAP) of the last trading day, rounded up to 2 decimal places.

2.2 In case that there is no trading on the last trading day, the market price of a comparative contract[12] or domestic underlying asset price will be used, rounded to 2 decimal places.

In specifying the calculation principle of the Final Settlement Price of Japanese

[12] Comparative Contract means domestic or international Futures contract having the same or close underlying assets. The remaining term of contract shall be equal or close to contract in TFEX

Rubber Futures, which is a contract that specifies payment in cash, by using the price of the ribbed smoked sheet rubber No.3 futures (settlement price) published by Osaka Exchange (OSE) of the last day of trading. It is the reference price for calculating the price for delivery or reference for calculating the difference in price for payment on the last trading day (final settlement price), without taking the exchange rate into the calculation.

5.11 Method of delivery or settlement

5.11.1 Definition and specification of delivery and settlement

For outstanding positions, the principles of delivery of a commodity when Futures contract is due to deliver or settlement is, the investors holding a long position shall pay for settlement and receive the underlying while the investors holding a short position shall deliver the underlying with the amount and conditions stipulated in the contract and receive the payment of the specified commodity. In case of Options, it depends on the rights whether it is the right to buy or sell. In the event that the investors holding Long Options exercise the specified rights, the procedure of delivery or settlement will occur. Currently, an obstacle for delivery might be the high cost associated with physical delivery. For instance, in case of the delivery of securities index following the mentioned principles, one must purchase the securities with each share's weight is the same as in the index. Therefore, cash settlement is available to avoid obstacle of delivering the actual underlying.

5.11.2 Specification of delivery or settlement of Futures in TFEX

Most futures and options contracts in TFEX settle in cash. There is no delivery of securities or commodity as it is a standard method of Futures in financial markets. In addition, most investors have no interest in receiving physical asset. This Cash Settlement method uses the Final Settlement price announced by TFEX as a reference price for the calculation of profit and loss.

The investors, however, may need to obtain the actual commodities in cases such as Gold-D Futures and Rubber Futures. Thus, there is a contract designed by TFEX for physical delivery which is stipulated to deliver as specified by the clearing house. RSS3D Futures, for example, is specified to deliver within the last day of the delivery month (a calendar month after the delivery or settlement month). The following are the delivery terms, one of which buyers can choose.

1. Free on Board (F.O.B.) delivery at Bangkok port or Laem Chabang port or other port as specified by TFEX

2. Domestic delivery at warehouses or factories in the areas of Bangkok, Nakon Patom, Patum Thani, Samut Prakarn, Samut Sakhon, Saraburi, Chonburi and Rayong.

Furthermore, it is necessary to follow the additional conditions stipulated by the Clearing House for Physical Delivery. In case of failure to deliver a commodity, the investor may pay by cash (Cash Settlement); however, they may be fined

according to the amount specified by the Clearing House.

5.12 Exchange Fee

TFEX has specified the fee related to Exchange Fee as a part of the contract specification. Such fee is considered to be maximum fee. TFEX shall announce the actual fee of each contract by separating details of Trading Fee and Clearing Fee. There may be further fees such as Licensing Fee for products that require referencing such as Gold Futures.

5.13 Speculative Position Limit

5.13.1 Principles for specifying Speculative Position Limit of product types in TFEX.

Regulations related to Speculative Position Limit of Futures are stipulated by TFEX in order to prevent any investors from trading and holding Futures contracts over the limit as it may cause the market to deviate from its normal state. Furthermore, the regulations can help investors limit their risk from the change in Futures price, especially those holding a large position.

TFEX has specified the maximum position for any investor as follows:

Table 5-9: Speculative Position Limit for Futures Trading

Product Types	Speculative Position Limit
SET50 Index Futures	Maximum 100,000 position in SET50 Index Futures and position in SET50 Index Options equivalent to SET50 Index Futures on one side of the market in any contract month or all contract months combined
Sector Futures	Maximum 20,000 contracts of any sector index in any contract month or all contract months combined
SET50 Index Options	Maximum 100,000 position in SET50 Index Futures and position in SET50 Index Options equivalent to SET50 Index Futures on one side of the market in any contract month or all contract months combined
Single Stock Futures	Total of net positions in Stock Futures of any particular stock in any given month or in all months combined shall not exceed the amount specified by TFEX, the number of which varies according to each ordinary stock used as underlying product. Details are available at https://www.tfex.co.th/th/products/stock-spec.html
Gold-D Futures	Maximum 5,000 contracts of Gold-D Futures in any contract month or all contract months combined.
5 Year Government Bond Futures	Maximum 10,000 contracts of 5 Year Government Bond Futures in any contract month or all contract months combined
3M BIBOR Futures	Maximum 2,000 contracts of 3M BIBOR Futures in any contract month or all contract months combined
USD Futures	Maximum 10,000 contracts of USD Futures in any contract month or all contract months combined.

EUR/USD Futures	Maximum 50,000 contracts of EUR/USD Futures expiring in any given month or all contract months combined
USD/JPY Futures	Maximum 50,000 contracts of USD/JPY Futures expiring in any given or all contract months combined
RSS3 Futures	Maximum 10,000 contracts in every contract month and maximum 1,000 contracts in delivery month or settlement price of the nearest month
RSS3D Futures	Maximum 10,000 contracts in every contract month and maximum 1,000 contracts in delivery month or settlement price of the nearest month

Remarks: The Speculative Position Limit of Gold Futures/ Gold Online Futures/ Silver Online Futures and Japanese Rubber Futures have not yet to be stipulated by TFEX at the present time. TFEX, however, may announce the maximum when it deems appropriate.

According to table 5-9, Speculative Position Limit of SET50 Index Futures and SET50 Index Options are specified as follows. Futures position of both Futures and Options are considered together as they have the same underlying assets which are SET50 Index. In the event that there is fluctuation in the mentioned index, it may have an effect on markets of both Set50 Index Futures and Set50 Index Options. In addition, TFEX has agreed that one can hold a maximum 100,000 equivalent position in SET50 Index Futures contracts on one side of the market in any delivery contract months of SET50 Index Futures and SET50 Index Options combined. The entire net (Futures) position of every month combined shall not also be in excess of 100,000 contracts except getting approval from TFEX.

In counting Speculative Position Limit of a person, all trading accounts of that person and/or related persons must be counted together. This includes all trading accounts in which that person benefits from the trades. In addition, the total position means position of holding SET50 Index Futures together with position of holding SET50 Index Options when calculating to equivalent positions in SET50 Index Futures. Delta is used to calculate and adjust equivalent positions. The principles and details of calculation are as follows.

1. Consider current holding position by classifying into Long Position and Short Position.
2. Calculate equivalent positions in SET50 Index Futures both Long Position and Short Position by using the following formula.

Amount of Equivalent Positions in SET50 Index Futures
= Amount of positions in SET50 Index Options x Delta

Delta is the Options' Delta which is different for each Series. Composite Delta announced by the Clearing House at the end of the trading day is used. The signs that comes with the Delta must also be used in the calculation.

3. Combine the equivalent positions of SET50 Index Options with the SET50 Index Futures of the same month to get the net position of both Futures and Options in any months and every month combined by considering each side of positions in order to evaluate whether the position limit has been exceeded.

5.13.2 Example of a comparison between the calculation of position and number of maximum futures

Example: Mr. Yingrauy's Futures trading is as follows:

Day 1:

- Mr. Yingrauy buys (Long) 5,000 contracts in SET50 Index Futures with the expiration date in September 2022.
- Mr. Yingrauy sells (Short) 4,000 contracts in SET50 Index Futures with the expiration date in December 2022.

Table 5-10: Calculation of number of SET50 Index Futures

	Long	Short	Net
S50U22 (Sep 22)	5,000		Long 5,000
S50Z22 (Dec 22)		4,000	Short 4,000
Total			**Long 1,000**

According to Table 5-10, Mr. Yingrauy trades only SET50 Index Futures on the first day. The details are as follows.

- The net position in each month is as follows. In September 2022 and December 2022, there are net long position of 5,000 contracts and net short position of 4,000 contracts respectively.

- Net position of all month combined is not more than Long 1,000 contracts

The net position of each month and all months combined is not more than 100,000 contracts. Thus, Mr. Yingrauy holds Futures which is not in excess of the position limit.

Day 2: Mr. Yingrauy's additional Futures trading is as follows.

- Mr. Yingrauy buys (Long) 10,000 contracts in SET50 Index Futures with the expiration date in September 2022.

- Mr. Yingrauy buys (Long) 9,100 contracts in SET50 Index Futures with the expiration date in March 2023.

Table 5-11: Calculation of number of SET50 Index Futures

	Long	Short	Net
S50U22 (Sep 22)	5,000 + 90,000		Long 95,000
S50Z22 (Dec 22)		4,000	Short 4,000
S50H23 (Mar 23)	9,100		Long 9,100
Total			**Long 100,100**

According to table 5-11, Mr. Yingrauy trades more SET50 Index Futures on the second day. The following are details of Mr. Yingrauy's contracts positions.

- The net position in each month is as follows. In September 2022, December 2022 and March 2023, there are net long position of 95,000 contracts, net short position of 4,000 contracts and net long position of 9,100 contracts respectively.

- Net position of all month combined equals 100,100 contracts.

From the net position in each month, it can be seen that there are not more than 100,000 contracts; however, the net position of all months combined equals 100,100 contracts. Consequently, in the event that Mr. Yingrauy holds the Futures in excess of the position limit, he has to partially close out of the position in order for the net position to not exceed the limit.

Day 3: Mr. Yingrauy's Futures trading to close partial positions in SET50 Index Futures and further opening positions in SET50 Index Options are as follows.

- Mr. Yingrauy sells (Short) 5,000 contracts in SET50 Index Futures with the expiration date in March 2023.
- Mr. Yingrauy buys (Long) 6,000 contracts in SET50 Call Option with the expiration date in September 2022. The exercise price is 1,030 (S50U22C1030).
- Mr. Yingrauy buys (Long) 5,000 contracts in SET50 Put Option with the expiration date in September 2022. The exercise price is 1,030 (S50U22P1030).

Table 5-11a: Calculation of number of SET50 Index Futures and SET50 Index Options before comparing with the equivalent position in SET50 Index Futures

	Long	Short	**Net**
Futures			
S50U22 (Sep 22)	95,000		*Long 95,000*
S50Z22 (Dec 22)		4,000	*Short 4,000*
S50H23 (Mar 23)	9,100	5,000	*Long 4,100*
Options			
S50U22C1030 (Sep 22)	6,000		??
S50U22P1030 (Sep 22)	5,000		??
Total			??

Due to the fact that the position in SET50 Index Options is unable to directly combine with SET50 Index Futures, the equivalent position in SET50 Index Futures shall be firstly calculated. Delta for Call Options and Put Options in the mentioned Series are specified to equal + 0.35 and – 0.65 respectively. Thus, the position of SET50 Index Options in each Series is equivalent to the position of SET50 Index Futures. The details are as follows.

S50U22C1030: 6,000 x (+0.35) = 2,100 contracts

S50U22P1030: 5,000 x (-0.65) = -3,250 contracts

It is found that 6,000 contracts of Long Call Options (S50U22C1030) is equal to 2,100 contracts of Long SET50 Index Futures while 5,000 contracts of Long Put Options (S50U22P1030) is equal to 3,250 contracts of Short SET50 Index Futures. This is because Delta for Put Options is a negative number making a Long Put equivalent to Short Futures.

As a result, the following are SET50 Index Futures positions and SET50 Index Options positions after converting to equivalent positions in SET50 Index Futures.

Table 5-11b: Calculation of SET50 Index Futures positions and SET50 Index Options positions after converting to equivalent positions in SET50 Index Futures

	Long	Short	Net
September 22 Contract			
S50U22 (Sep 22)	95,000		Long 95,000
S50U22C1030 (Sep 22)	2,100		Long 2,100
S50U22P1030 (Sep 22)	-3,250		Short 3,250
Total September 22 Contract			**Long 93,850**
December 22 Contract			
S50Z22 (Dec 22)		4,000	Short 4,000
Total December 22 Contract			**Short 4,000**
March 23 Contract			
S50H23 (Mar 23)	9,100	5,000	Long 4,100
Total March 23 Contract			**Long 4,100**
Total All Months Combined			**Long 93,950**

When considering the positions in each month, positions in both Futures and Options after calculating position equivalent to SET50 Index Futures must be considered. Therefore, the net position of Mr. Yingrauy in September 2022 is equal to Long position of 93,850 contracts (95,000 + 2,100 – 3,250) while the net position in December 2022 and March 2023 is equal to Short position of 4,000 contracts and Long position of 4,100 contracts respectively. The total net position is equal to Long position of 93,950 contracts which is not over 100,000. Thus, Mr. Yingrauy holds Futures which is not in excess of the position limit.

Day 4: Mr. Yingrauy's Futures trading for opening additional positions in SET50 Index Options is as follows:

- Mr. Yingrauy sells (Short) 1,000 September 2022 Put Options contracts with a strike price of 1000.
- Mr. Yingrauy buys (Long) 1,000 September 2022 Call Options contracts with a strike price of 1010.

Suppose the delta values for each Options series are fixed as follows:

- SET50 Call Options with a strike price of 1030 have a delta of 0.35.
- SET50 Put Options with a strike price of 1030 have a delta of -0.65.
- SET50 Put Options with a strike price of 1000 have a delta of -0.46.
- SET50 Call Options with a strike price of 1010 have a delta of 0.54.

For help understanding on the calculation process, the delta values are set to be stable, whereas, in reality, they change every day.

Table 5-12a: The Calculation of SET50 Index Futures and SET50 Index Options Positions Before Calculating SET50 Index Futures Equivalent Positions

	Long	Short	Net
September 22 Contract			
S50U22 (Sep 22)	95,000		*Long 95,000*
S50U22C1030 (Sep 22)	6,000		??
S50U22P1030 (Sep 22)	5,000		??
S50U22P1000 (Sep 22)		1,000	??
S50U22C1010 (Sep 22)	1,000		??
Total September 22 Contract			??
December 22 Contract			
S50Z22 (Dec 22)		4,000	*Short 4,000*
Total December 22 Contract			***Short 4,000***
March 23 Contract			
S50H23 (Mar 23)	9,100	5,000	*Long 4,000*
Total March 23 Contract			***Long 4,000***
Total All Months Combined			*??*

From the preceding data, the September 2022 SET50 Index Options positions must be converted to SET50 Index Futures equivalent positions before calculating the total positions.

S50U22C1030:	6,000 x (+0.35)	=	2,100 contracts
S50U22P1030:	5,000 x (-0.65)	=	-3,250 contracts
S50U22P1000:	1,000 x (-0.46)	=	-460 contracts
S50U22C1010:	1,000 x (+0.54)	=	540 contracts

The data reveals that selling 1,000 Put Options (S50U22P1000) is equivalent to buying 460 SET50 Index Futures while buying 1,000 Call Options (S50U22C1010) is equivalent to buying 540 SET50 Index Futures.

Moreover, the net positions of S50Z22 and S50H23 equal to 4,000 and 4,100, respectively. Thus, the details of SET50 Index Futures and SET50 Index Options positions after calculating SET50 Index Futures equivalent positions can be found in the following table.

Table 5-12b: The Calculation of SET50 Index Futures and SET50 Index Options Positions After Calculating SET50 Index Futures Equivalent Positions

	Long	Short	Net
September 22 Contract			
S50U22 (Sep 22)	95,000		*Long 95,000*

S50U22C1030 (Sep 22)	2,100		*Long 2,100*
S50U22P1030 (Sep 22)	-3,250		*Short 3,250*
S50U22P1000 (Sep 22)		-460	*Long 450*
S50U22C1010 (Sep 22)	540		*Long 540*
Total September 22 Contract			***Long 94,850***
December 22 Contract			
S50Z22 (Dec 22)		4,000	*Short 4,000*
Total December 22 Contract			***Short 4,000***
March 23 Contract			
S50H23 (March 23)	9,100	5,000	*Long 4,100*
Total March 23 Contract			***Long 4,100***
Total All Months Combined			**94,950**

Considering each month's contract, Mr. Yingruay's net positions of September 2022 contracts equal to 94,850 (Long) SET50 Index Futures (95,000 + 2,100 – 3,250 + 460 + 540) while his net positions of December 2022 and March 2023 contracts equal to 4,000 (Short) and 4,100 (Long), respectively. These make his all-months-combined positions equal to 94,950 (Long). Since the net positions in any contract month or all contract months combined are below 100,000, Mr. Yingruay's overall net positions do not exceed the speculative position limit.

Day 5 Mr. Yingruay closes out some SET50 Index Futures positions and opens more SET50 Index Options positions as described below:

- Sell 5,000 December 2022 SET50 Index Futures contracts
- Buy 2,000 December 2022 SET50 Put Options contracts with a strike price of 1030 (S50Z22P1030)
- Sell 1,000 December 2022 SET50 Put Options contracts with a strike price of 1040 (S50Z22P1040)

Suppose the delta values for each Options series are fixed as follows:

- SET50 Call Options with a strike price of 1030 have a delta of 0.35.
- SET50 Put Options with a strike price of 1030 have a delta of -0.65.
- SET50 Put Options with a strike price of 1000 have a delta of 0-.46.
- SET50 Call Options with a strike price of 1010 have a delta of 0.54.
- SET50 Put Options with a strike price of 1030 have a delta of -0.57.
- SET50 Put Options with a strike price of 1040 have a delta of -0.62.

Table 5-13a: The Calculation of SET50 Index Futures and SET50 Index Options Positions Before Calculating SET50 Index Futures Equivalent Positions

	Long	Short	Net
September 22 Contract			
S50U22 (Sep 22)	95,000		*Long 95,000*
S50U22C1030 (Sep 22)	6,000		??
S50U22P1030 (Sep 22)	5,000		??
S50U22P1000 (Sep 22)		1,000	??

S50U22C1010 (Sep 22)	1,000		??
Total September 22 Contract			??
December 22 Contract			
S50Z22 (Dec 22)		4,000 + 5,000	*Short 9,000*
S50Z22P1030 (Dec 22)	2,000		??
S50Z22P1040 (Dec 22)		1,000	??
Total December 22 Contract			??
March 23 Contract			
S50H23 (Mar 23)	9,100	5,000	*Long 4,100*
Total March 23 Contract			***Long 4,100***
Total All Months Combined			??

From the above delta values and Options positions, SET50 Index Options in each Options series after calculating SET50 Index Futures equivalent positions are as follows:

S50U22C1030:	6,000 x (+0.35)	=	2,100 contracts
S50U22P1030:	5,000 x (-0.65)	=	-3,250 contracts
S50U22P1000:	1,000 x (-0.46)	=	-460 contracts
S50U22C1010:	1,000 x (+0.54)	=	540 contracts
S50Z22P1030:	2,000 x (-0.57)	=	-1,140 contracts
S50Z22P1040:	1,000 x (-0.52)	=	-620 contracts

The data shows that buying 2,000 Put Options (S50Z22P1030) is equivalent to selling 1,140 SET50 Index Futures while selling 1,000 Put Options (S50Z22P1040) is equivalent to buying 620 SET50 Index Futures.

Moreover, S50Z22 contracts have Short positions equal to 9,000 and S50H23 contracts have Long positions equal to 4,100.

Therefore, the details of SET50 Index Futures and SET50 Index Options positions after calculating SET50 Index Futures equivalent positions can be found in the following table.

Table 5-13b: The Calculation of SET50 Index Futures and SET50 Index Options Positions After Calculating SET50 Index Futures Equivalent Positions

	Long	Short	Net
September 22 Contract			
S50U22 (Sep 22)	95,000		*Long 95,000*
S50U22C1030 (Sep 22)	2,100		*Long 2,100*
S50U22P1030 (Sep 22)	-3,250		*Short 3,250*
S50U22P1000 (Sep 22)		-460	*Long 460*
S50U22C1010 (Sep 22)	540		*Long 540*
Total September 22 Contract			***Long 94,850***

December 22 Contract			
S50Z22 (Dec 22)		4,000 + 5,000	*Short 9,000*
S50Z22P1030 (Dec 22)	-1,140		*Short 1,140*
S50Z22P1040 (Dec 22)		-620	*Long 620*
Total December 22 Contract			***Short 9,520***
March 23 Contract			
S50H23 (Mar 23)	9,100	5,000	*Long 4,100*
Total March 23 Contract			***Long 4,100***
Total All Months Combined			**89,430**

Considering each month's contract, Mr. Yingruay's net positions of September 2022 contracts equal to 94,850 (Long). The net positions of December 2022 contracts equal to 9,520 (Short) (-9,000 – 1,140 + 620) and the net positions of March 2023 contracts equal to 4,100 (Long). These make all-months-combined positions equal to 89,430 (Short). Since the net positions in any contract month or all contract months combined are below 100,000, Mr. Yingruay's overall net positions do not exceed the speculative position limit.

Speculative position limits are determined to prevent any over-speculation and damage that might occur; therefore, the position limits cannot be exceeded unless an exemption is obtained from TFEX. In case that any person wishes to hold position in excess of the limit stipulated by TFEX, such person shall file an application for position exemption together with documents and evidence as prescribed by TFEX. TFEX will consider such application on a case-by-case basis.

5.14 Reportable Positions

5.14.1 Reporting Principles

To regulate the futures trading, speculative position limits must be determined and the data on futures trading must be reported. The data will help TFEX gain better understanding of the market and the investors. Futures trading under TFEX's management will, therefore, be more effective and the risks from trading disruption and clearing and settlement of futures contracts might well also be reduced.

With the mentioned principles, a Large Position Report is requested, which is in line with international practices. The member shall report the positions in its own account or that of its client to TFEX when the numbers of positions held by the member or its client reach the reporting limit stipulated by TFEX. The data must be reported in accordance with the principles and guidelines prescribed by TFEX. The details of the reporting limit for each product are found in Table 5-14.

Table 5-14: The Reporting Limit Prescribed by TFEX

Products	Details
SET50 Index Futures	Reporting if holding of at least 2,500 net positions of SET50 Index Futures in any one contract month, or all contract months combined.
SET50 Index Options	Reporting if net holding in SET50 Index Options in any Options Series, or net holding in SET50 Index Call Options or SET50 Index Put Options, as the case may be, starting from 2,500 contracts.
Sector Futures	Reporting if net holding in Sector Futures with underlying products in any business sector Index expiring in any month, or having net holding in Sector Futures with underlying products in any business sector Index every month, starting from 500 contracts in total.
Single Stock Futures	Reporting if net holding in Single Stock Futures with underlying products in any ordinary stock expiring in any month, or having net holding in Single Stock Futures with underlying products in any ordinary stock every month, starting from 500 contracts in total.
50 Baht Gold Futures	Reporting if net holding in 50 Baht Gold Futures expiring in any month, or net holding in 50 Baht Gold Futures every month, starting from 1,000 contracts in total.
10 Baht Gold Futures	Reporting if net holding in 10 Baht Gold Futures expiring in any month, or net holding in 10 Baht Gold Futures every month, starting from 1,000 contracts in total.
Gold-D Futures	Reporting if net holding in Gold-D Futures expiring in any month, or net holding in Gold-D Futures every month, starting from 500 contracts in total.
Gold Online Futures	Reporting net holding in Gold Online Futures expiring in any month, or net holding in Gold Online Futures every month, starting from 500 contracts in total.
Silver Online Futures	Reporting if net holding in Silver Online Futures expiring in any month, or net holding in Silver Online Futures every month, starting from 1,000 contracts in total.
RSS3 Futures	Reporting if net holding in RSS3 Futures expiring in a particular month, or net holding RSS3 Futures every month, starting from 500 contracts in total.
RSS3D Futures	Reporting if net holding in RSS3D Futures expiring in a particular month, or net holding RSS3D Futures every month, starting from 500 contracts in total.

Japanese Rubber Futures	Reporting if net holding in Japanese Rubber Futures expiring in any month, or net holding in Japanese Rubber Futures every month, starting from 500 contracts in total.
5-Year Government Bond Futures	Reporting if net holding in 5-Year Government Bond Futures expiring in any month, or net holding in 5-Year Government Bond Futures every month, starting from 500 contracts in total.
3M BIBOR Futures	Reporting if net holding in 3M BIBOR Futures expiring in any month, or net holding in 3M BIBOR Futures every month, starting from 500 contracts in total.
Currency Futures	Reporting if net holding in each type of Currency Futures expiring in any month, or net holding of each type of Currency Futures every month, starting from 500 contracts in total.

From the table, it is obvious that each type of futures contracts has its own regulations. The reportable positions are commonly considered from any one contract month, or all contract months combined except for SET50 Index Options, which can be considered from 1) any Options series or, 2) the net positions of Call Options, or Put Options, as the case may be.

Moreover, TFEX has stipulated the calculation method for reportable positions of SET50 Index Futures and SET50 Index Options differently from the calculation method for speculative position limit. The position limit of SET50 Index Futures and SET50 Index Options are, therefore, considered separately.

If SET50 Index Futures positions are considered reportable, all SET50 Index Futures must be reported along with additional reporting of positions in SET50 Index Options. Equally, if SET50 Index Options positions are considered reportable, SET50 Index Futures positions also need to be reported since both products have the same underlying asset.

5.14.2 The Calculation Method for Position Limits and Reportable Positions

Examples of the Calculation of Reportable Positions

Example: Hold only one type of Futures products

Principle: In this case, the reportable positions are considered from the following factors.

- The net positions of futures contracts in any one month.
- The net positions of futures contracts in all contract months combined.

The data table below shows the calculation of reportable positions for SET50 Index Futures with the reporting limit of 2,500.

Table 5-15: The Calculation of Reportable Positions for SET50 Index Futures

	Long	Short	Net
S50U22 (Sep 22)	500	400	*Long 100*
S50Z22 (Dec 22)		1,200	*Short 1,200*
S50H23 (Mar 23)		1,400	*Short 1,400*
Total All Months combined			***Short 2,500***

Table 5-15 shows the net positions of SET50 Index Futures in any contract month which are below 2,500 which are not considered reportable. However, if consider total all months combined, the net positions equal to 2,500 (Short) which are considered reportable. Thus, in this case, all net positions of SET50 Index Futures must be reported.

This principle can also be applied to other types of futures contracts.

Example: Holding of only one type of SET50 Index Options products

Principle: In this case, the reportable positions are considered from the following factors.

- The net positions of SET50 Index Options in one series only.
- When consider the net positions of SET50 Index Options, Call Options and Put Options must be considered separately.
- When SET50 Index Options in any series are considered reportable, both Call Options and Put Options in all series must be reported.

The table below shows the calculation of reportable positions for SET50 Index Options with the reporting limit of 2,500.

Table 5-16: The Calculation of Reportable Positions for SET50 Index Options

	Long	Short	Net
Call Options			
S50U22C1010	2,000		*Long 2,000*
S50Z22C1050		500	*Short 500*
Call Options: Total All Months Combined			***Long 1,500***
Put Options			
S50Z22P1000		2,000	*Short 2,000*
S50Z22P1010		200	*Short 200*
S50M23P1020	3,000		*Long 3,000*
Put Options: Total All Months Combined			***Long 800***

According to Table 5-16, Call Options positions in each series and total all months combined are below 2,500 which are not considered reportable; however, March 2023 Put Options with a strike price of 1020 (S50M23P1020) is equal to 3,000 (Long) which are over the limit. Therefore, in this case, although total all months combined positions of Put Options are equivalent to 800 (Long),

S50M23P1020 series are considered reportable. Thus, the member must report the positions of all 5 series of SET50 Index Options of its clients to TFEX.

Example: Holding of a variety of types of products: SET50 Index Futures and SET50 Index Options

Table 5-17: The Calculation of Reportable Positions of SET50 Index Futures and SET50 Index Options

	Long	Short	Net
SET50 Index Futures			
S50U22 (Sep 22)	500		*Long 500*
S50Z22 (Dec 22)		200	*Short 200*
SET50 Index Futures: Total All Months Combined			***Long 300***
Call Options			
S50U22C1010	2,500		*Long 2,500*
S50Z22C1050		1,500	*Short 1,500*
Call Options: Total All Months Combined			***Long 1,500***
Put Options			
S50Z22P1000		2,000	*Short 2,000*
S50Z22P1010		100	*Short 100*
S50M23P1020	100		*Long 100*
Put Options: Total All Months Combined			***Short 2,000***

According to the table, the net positions of SET50 Index Futures in each month and all months combined are not considered reportable, however, the net positions of September 2014 Call Options with a strike price of 1010 (S50U22C1010) equal to 2,500 (Long) which are considered reportable. Therefore, in this case, although the positions in other Options series, or total all months combined of Call Options and Put Options are below 2,500, the member shall report the positions of all 5 series of SET50 Index Options and September 2022 and December 2022 SET50 Index Futures of its clients to TFEX.

5.14.3 Guidelines for Large Position Reports

The member shall have the duty to audit its client's account and deliver the report to TFEX. The member must report the data to TFEX the next business day from the date on which the net positions in the account of its client meet the reportable threshold prescribed in the contract specifications. The report must be delivered until the position limit of the account falls below reportable level for 2 consecutive business days. The system now allows the report to be filed automatically to TFEX when the numbers of positions are considered reportable.

Appendix of chapter 5

As stipulated in the Derivatives Act B.E. 2546, TFEX has been given permission to trade a variety of derivative products whether they are futures or options. Also, the underlying assets can also be indices, securities, interest rates, currency exchange rates and commodities.

Contract specifications for TFEX products can be found in the following links:

Contract Specification of SET50 Index Futures:
https://www.tfex.co.th/en/products/s50if-spec.html

Contract Specification of Sector Index Futures:
https://www.tfex.co.th/en/products/equity/sector-index-futures/contract-specification

Contract Specification of SET50 Index Options:
https://www.tfex.co.th/en/products/s50io-spec.html

Contract Specification of Single Stock Futures:
https://www.tfex.co.th/en/products/stock-spec.html

Contract Specification of Gold Futures:
https://www.tfex.co.th/en/products/gold-spec.html

Contract Specification of Gold Online Futures:
https://www.tfex.co.th/en/products/goldonline-spec.html

Contract Specification of Gold-D Futures:
https://www.tfex.co.th/en/products/goldd-spec.html

Contract Specification of Silver Online Futures:
https://www.tfex.co.th/en/products/precious-metal/silver-online-futures/contract-specification

Contract Specification of 5-Year Government bond Futures:
https://www.tfex.co.th/en/products/interest-rate/5y-gov-bond-futures/contract-specification

Contract Specification of 3M BIBOR Futures:
https://www.tfex.co.th/en/products/interest-rate/3m-bibor-futures/contract-specification

Contract Specification of USD Futures:
https://www.tfex.co.th/en/products/currency/usd-futures/contract-specification

Contract Specification of EUR/USD Futures:
https://www.tfex.co.th/en/products/currency/eur-usd-futures/contract-specification

Contract Specification of USD/JPY Futures:
https://www.tfex.co.th/en/products/currency/usd-jpy-futures/contract-specification

Contract Specification of RSS3 Futures:
https://www.tfex.co.th/en/products/agriculture/rss3-futures/contract-specification

Contract Specification of RSS3D Futures:
https://www.tfex.co.th/en/products/agriculture/rss3d-futures/contract-specification

Contract Specification of Japanese Rubber Futures:
https://www.tfex.co.th/en/products/agriculture/japanese-rubber-futures/contract-specification

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