

**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”

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: The suggested readings are provided to facilitate a reader in understanding the contents of the Thai text books that are not available in translated version. TSI tries our best to find an available English textbooks, websites, sources of information for a reader to study, however, it may not cover all contents especially all learning objectives. Please refer to the learning objectives and original Thai text books for exact correctness and completeness.

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. The contradiction of the original text book and the translation, please refer to the Thai version.

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

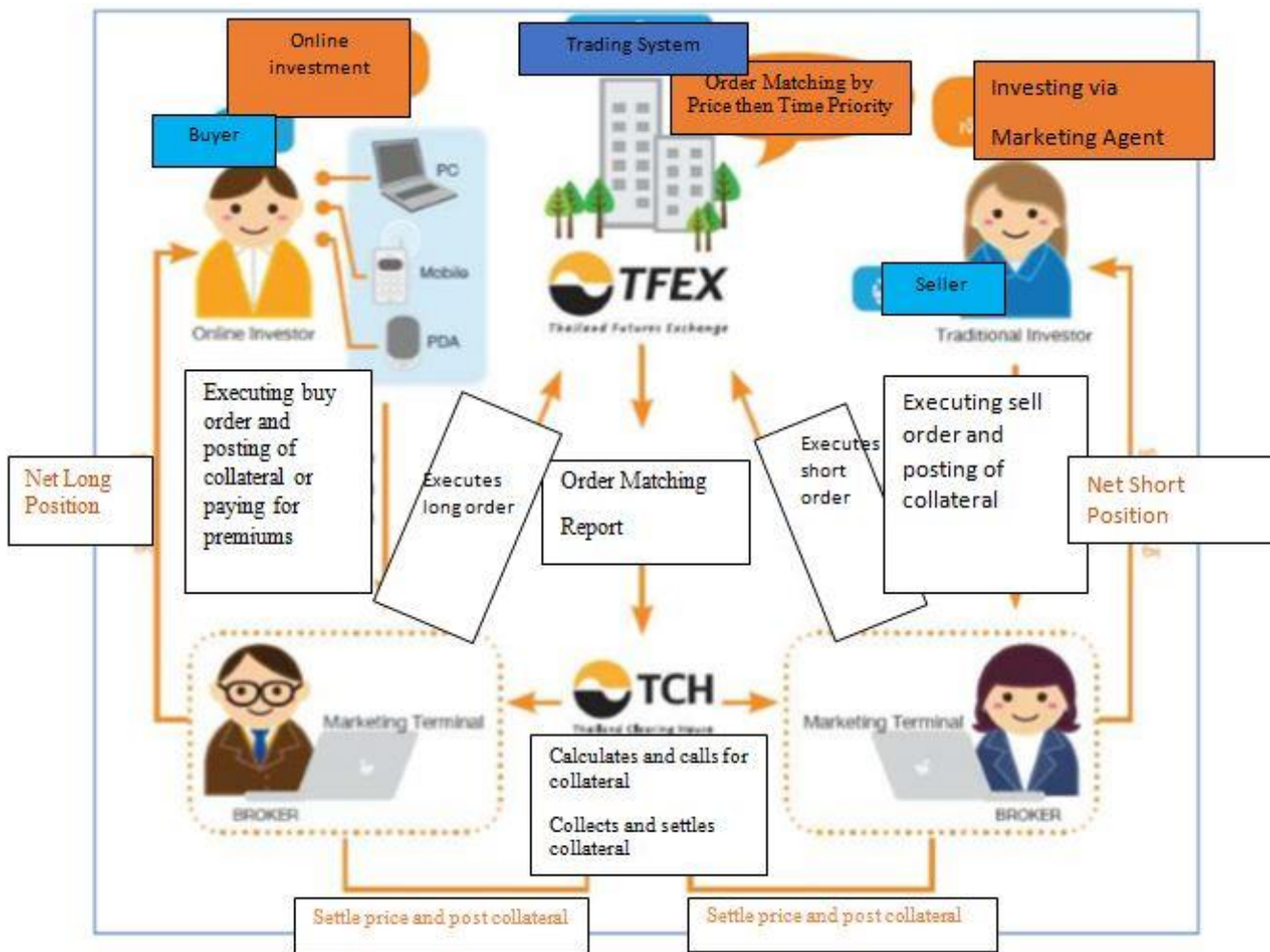
Trading of futures contract has the same trading methods and procedures as trading in stock exchanges. That is, investors may make a purchase order via brokerage's agents of the futures markets. The trading order will then be transmitted to the Thailand Futures Exchange (TFEX) trading system which acts 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 (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/sell 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 computer 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. Similarly, 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 Continuous 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).

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. 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. 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 (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 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 requirement, additional collateral requirements and closing of positions, and 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 the Future Contract Exchange

เอกสารเปิดเผยข้อมูลความเสี่ยงเกี่ยวกับการซื้อขายสัญญาซื้อขายล่วงหน้าฟิวเจอร์สและสัญญาซื้อขายล่วงหน้าอปชั่น
ในตลาดสัญญาซื้อขายล่วงหน้า

1. สัญญาซื้อขายล่วงหน้าฟิวเจอร์ส

1.1 ลักษณะของสัญญาซื้อขายล่วงหน้าฟิวเจอร์ส

สัญญาซื้อขายล่วงหน้าฟิวเจอร์ส เป็นสัญญาที่ผู้ซื้อและผู้ขายสัญญาต่างมีภาระผูกพันที่ต้องปฏิบัติตามข้อตกลงในสัญญา ดังนั้น ในกรณีที่ผู้สัญญาไม่ได้ตั้งฐานะสัญญาซื้อขายล่วงหน้าก่อนสัญญาครบกำหนด ผู้ขายสัญญามีหน้าที่ต้องส่งมอบสินค้าให้แก่ผู้ซื้อ ในขณะที่ผู้ซื้อมีหน้าที่ต้องชำระราคาสินค้าให้แก่ผู้ขาย (physical delivery) หรือ ผู้สัญญาฝ่ายใดฝ่ายหนึ่งจะได้รับชำระหรือต้องชำระเงินให้แก่ผู้สัญญาอีกฝ่ายหนึ่งเท่ากับจำนวนเงินที่คำนวณได้จากส่วนต่างระหว่างราคาใช้สิทธิกับราคา หรือมูลค่าของสินค้าหรือตัวแปรที่เป็นอยู่ ณ เวลาใดเวลาหนึ่งหรือช่วงเวลาใดเวลาหนึ่งในอนาคตตามที่กำหนดไว้ในสัญญา (cash settlement)

1.2 ความเสี่ยงที่เกิดจากอัตราขาดทุนในการซื้อขายสัญญาซื้อขายล่วงหน้าฟิวเจอร์ส

ในการซื้อขายสัญญาซื้อขายล่วงหน้าฟิวเจอร์ส ทั้งผู้ซื้อ (long position) และผู้ขาย (short position) มีหน้าที่ต้องวางรายมัดเงินไว้กับบริษัทฯ เพื่อเป็นประกันการปฏิบัติตามสัญญาซื้อขายล่วงหน้าของลูกค้า เนื่องจากการซื้อขายสัญญาซื้อขายล่วงหน้าฟิวเจอร์สเป็นธุรกรรมที่มี Leverage สูง คือจำนวนรายมัดเงินที่ต่อวางเป็นหลักประกันเริ่มต้น (initial margin) มีมูลค่าน้อยเมื่อเปรียบเทียบกับมูลค่าของสัญญาซื้อขายล่วงหน้า ดังนั้น แม้กรณีที่ราคาตลาดของสัญญาซื้อขายล่วงหน้ามีการเปลี่ยนแปลงเพียงเล็กน้อย ลูกค้าก็มีโอกาสได้รับผลกำไรจากการซื้อขายสัญญาซื้อขายล่วงหน้าเป็นจำนวนมากภายในเวลาอันรวดเร็ว เช่นเดียวกับโอกาสที่จะได้รับผลขาดทุนเป็นจำนวนมากภายในเวลาอันรวดเร็ว ซึ่งอาจเกินกว่ามูลค่าหลักประกันเริ่มต้นที่วางไว้กับบริษัทฯ ได้ และอาจทำให้เกิดผลขาดทุนเกินกว่ามูลค่าหลักประกันที่วางไว้กับบริษัทฯ หรืออาจต้องถูกบังคับให้ตั้งฐานะสัญญาในกรณีที่ไม่สามารถนำหลักประกันมาวางเพิ่มภายในระยะเวลาที่กำหนดได้

Once an investor has submitted account opening application forms and risk assessment and 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 receive 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 in confirming each trade.

Types and conditions of trading order

In submission of a trade order, if an investor chooses to perform the trading through 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:

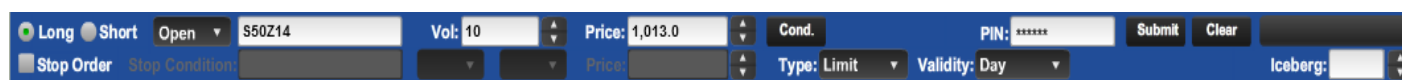
Table 4-1 details of trading order

| 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 | <p>The agent must specify the type of traders. The Future Contract Exchange classifies traders into four types of as follows:</p> <ol style="list-style-type: none"> 1. Principle (P): The trading is performed on the broker's account. 2. Foreign (F): The customer is a foreign institution or an individual investor holding nationalities other than Thai. 3. Institution (M): Traders are financial institutions as defined by SEC: Asset Management Companies, Banks, Finance Company, Insurance, Life Insurance Company, Juristic Person type: Corporation, Personal Trust Funds, Government Pension Funds, and Provident Funds. Any other juristic persons not identified as financial institutions are categorized as general customers (Customer). 4. Customer (C): Traders are Thai national individual investors and any other juristic persons who are not classified into each of the three types 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, making the quantity of position held reduces 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 the Futures Exchange. The agent can be identified in the boundary of the trade, e.g. Dxxx or D, followed by 4 letters or digits. |
| 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. See details 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



According to the above figure, an investor wants a buy (Long) order in the SET50 Futures maturing in December 2014 (S50Z14) to open a position for 10 quantities of contracts at the price of 1013.0 points, and the trader must supply the correct PIN (PIN Number)[SIC] before trading.

The investor can specify types and condition of the trade order to tailor a specific way to trade. Presently, the types and condition available for selection are as follows:

- Types of Trading
 - a) Limit Order is a type of trading where the trade price offered is specified.

- b) Market Order is a type of trading whereby trading orders are executed at the highest available bid or lowest available offer, respectively.
- c) Iceberg Order is a type of trading that divides the quantity of contract offered and enters the system in a smaller quantity automatically and periodically after the previously entered quantity has been matched.
- d) Combination order is a type of trading whereby at least two buy or sell orders are made. Both orders must be matched. There are no restrictions on the underlying and maturity dates. That means the contracts can have either the same or different underlying or expiration date. Nevertheless, buy and/or sell orders must not be in the same type of contracts (series) with the same underlying, maturity/delivery date, and/or option exercise price.
- e) Market to Limit Order is a type of trading that executes buy or sell orders at a single price only and should there be leftover orders they would enter into the system as bid/offer at the latest trading price. The sell/buy orders are executed at the highest available bid or lowest available offer respectively.
- f) Special Market Order is an offer to buy at the lowest offer price or sell at the highest bid price. If there are a number of unmatched offers, the system will consider the trading at the price of 1 tick behind the maximum/minimum offer.

Apart from those types of trading, an investor can choose to specify the trading condition to specify the duration of order matching after the order has entered the system. The available conditions are:

- a) *Day* means an offer to trade that executes within the day that the offer is made.
- b) *Good till Date* means an offer to trade that is effective in the system until a specified date or until the offer is cancelled.
- c) *Good till Cancel* means an offer to trade that is effective until the last trading period of the particular contract or until the offer is cancelled.

- d) *Fill and Kill* means an offer for immediate matching. If some quantities of the offer are unable to be matched or no quantities are matched, trading will be executed on the matched order and the rest will be cancelled.
- e) *Fill or Kill* means an offer for immediate matching. If a trade order is unable to be completely matched, the whole order will be rescinded immediately.
- f) Stop Limit Order refers to a limit order which is only effective in the trading system when the predetermined conditions have been reached. The predetermined conditions involve the movement of the price itself. For instance, orders can be effective when the final trading price and the highest bid or lowest offer reaches a certain level.
- g) Stop Order refers to a market order which is only effective in the trading system when the predetermined conditions have been reached. The predetermined conditions involve the movement of the price itself. For instance, orders will be effective when the final trading price and the highest bid or lowest offer reaches a certain level.
- h) *Good till Time* is an offer to trade that is effective during the dates specified or until the offer is cancelled.
- i) *Good till Session* means trading that is effective until the beginning of the specified trading time or until the order is cancelled.
- j) *Good till Next Auction* means trading that is effective until the period for the next pre-open session after the trade or until the offer is cancelled.

Examples of 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 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.

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 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. S50Z14 (SET50 Futures expiring in December 2014)
- 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

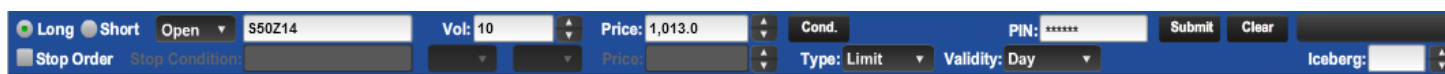


Figure 4-6: Example of an order to close position by specifying price offered to sell



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 S50Z14 contracts at 1,021.0 points whereby the stop condition of the last price of the S50Z14 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 S50Z14 is matched at 1021.0 points or higher, the investor’s order will be queued for matching. However, if the S50Z14 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 S50Z14, 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 1013 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

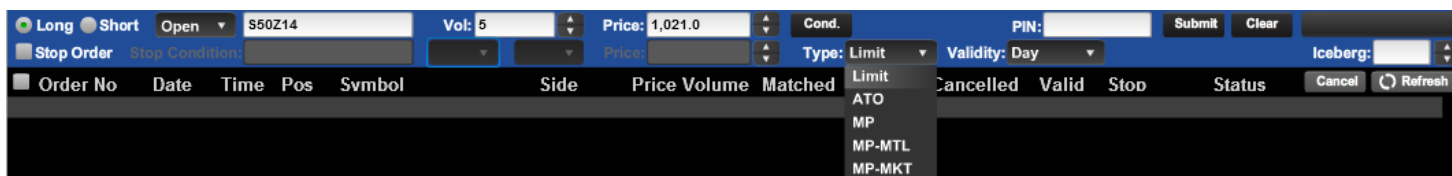
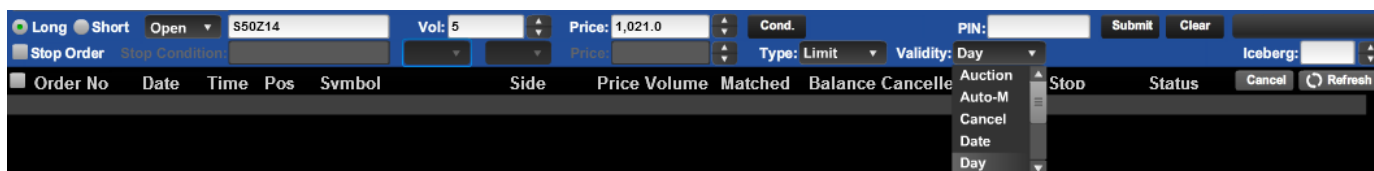


Figure 4-10: Selection of trading conditions in the “Validity” menu



4.1.3 Procedure to trade future contracts during night session

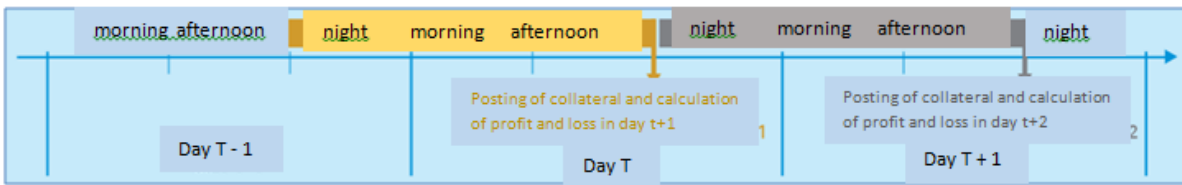
The Futures Exchange has extended the trading time for future contracts that have commodities as underlying assets. Commodities, such as gold and crude oil, are commonly traded in the international market. The extension in trading time has been implemented so that investors have the opportunity to alter their positions. This improves investors' opportunity to make profit as prices of commodities in the international market change during night time in Thailand.

Presently, Gold Futures and Gold-D Futures are available for trading in the Night Session which, similar to the Day session, has a Pre-Open session. The Pre-Open session for the Night Session begins from 18.45 to 19.00 hrs and ends at 23.55 hrs.

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.

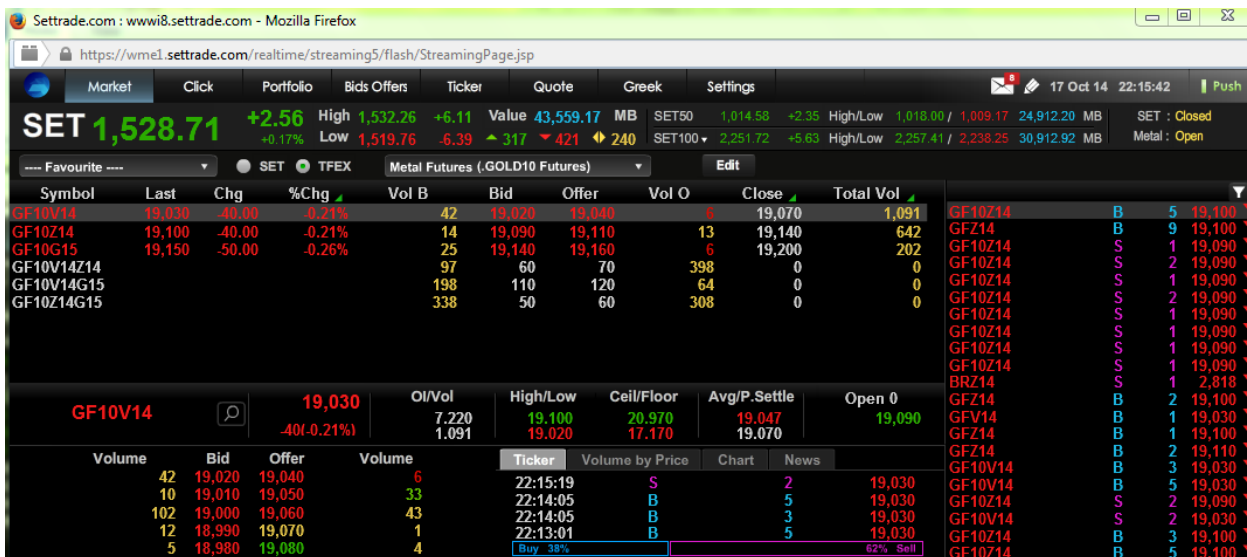
According to TFEX, transactions during the Night Session are considered as transactions made in the next operating day. Therefore, trading statistics of the next operating day will include transactions that occur during the previous Night Session. As a result, profit and loss will be calculated and settled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

Figure 4-12: Trading system during the Night Session



4.1.4 Collateral and Mart-to-Market

As trading in futures contracts, in the TFXE, is essentially a process of negotiating the agreed price of the underlying for future transaction. Price negotiation takes place through the TFXE 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

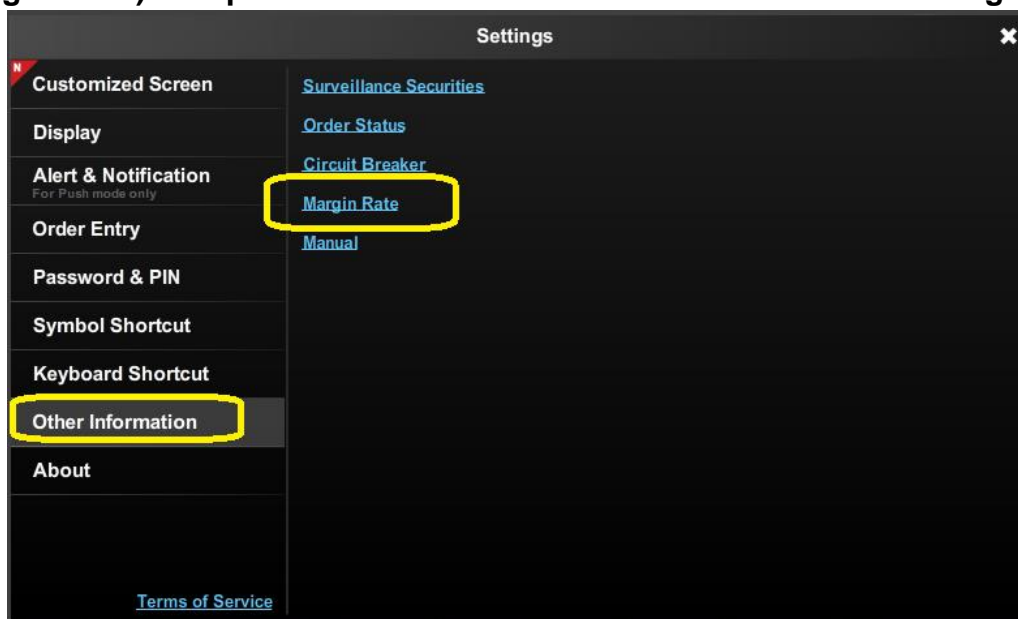
to trade at a specified price. The agreement will still hold for both buyer and seller regardless of any future outcomes. Contract traders must bear the market risk, a risk to a portfolio from movements in underlying prices. Long position holders risk buying at a price higher than the market while short 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 exist 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. 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 13: 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 4-14: Example of collateral requirements for the short position in each option series

| Instrument | Positions | IM | MM | FM | Price Scanning Range |
|----------------------------|------------------------|-----------|-----------|-----------|----------------------|
| SET50 Index Options | | | | | |
| SS0U15C875 | Short Options Outright | 19,082.20 | 16,495.54 | 13,046.66 | 5,000 |
| SS0U15C900 | Short Options Outright | 14,860.80 | 12,220.56 | 8,700.24 | 5,000 |
| SS0U15C925 | Short Options Outright | 11,132.60 | 8,536.82 | 5,075.78 | 5,000 |
| SS0U15C950 | Short Options Outright | 6,764.40 | 5,239.08 | 3,205.32 | 5,000 |
| SS0U15C975 | Short Options Outright | 4,760.00 | 3,620.00 | 2,100.00 | 5,000 |
| SS0U15C1000 | Short Options Outright | 4,340.00 | 3,200.00 | 1,680.00 | 5,000 |
| SS0U15C1025 | Short Options Outright | 4,200.00 | 3,060.00 | 1,540.00 | 5,000 |
| SS0U15C1050 | Short Options Outright | 3,840.00 | 2,700.00 | 1,180.00 | 5,000 |
| SS0U15C1075 | Short Options Outright | 3,860.00 | 2,720.00 | 1,200.00 | 5,000 |
| SS0U15C1100 | Short Options Outright | 3,820.00 | 2,680.00 | 1,160.00 | 5,000 |
| SS0U15P875 | Short Options Outright | 4,640.00 | 3,500.00 | 1,980.00 | 5,000 |
| SS0U15P900 | Short Options Outright | 7,670.10 | 6,371.07 | 4,639.03 | 5,000 |
| SS0U15P925 | Short Options Outright | 11,316.60 | 9,655.62 | 7,440.98 | 5,000 |
| SS0U15P950 | Short Options Outright | 15,634.90 | 13,770.43 | 11,284.47 | 5,000 |
| SS0U15P975 | Short Options Outright | 20,273.90 | 18,289.73 | 15,644.17 | 5,000 |
| SS0U15P1000 | Short Options Outright | 25,069.50 | 23,014.65 | 20,274.85 | 5,000 |
| SS0U15P1025 | Short Options Outright | 29,735.70 | 26,940.99 | 23,214.71 | 5,000 |
| SS0U15P1050 | Short Options Outright | 34,740.20 | 31,914.14 | 28,146.06 | 5,000 |
| SS0U15P1075 | Short Options Outright | 39,734.40 | 36,898.08 | 33,116.32 | 5,000 |
| SS0U15P1100 | Short Options Outright | 44,723.90 | 41,884.73 | 38,099.17 | 5,000 |
| SS0Z15C875 | Short Options Outright | 19,291.70 | 16,930.19 | 13,781.51 | 5,000 |
| SS0Z15C900 | Short Options Outright | 16,368.80 | 13,546.16 | 9,782.64 | 5,000 |
| SS0Z15C925 | Short Options Outright | 11,638.30 | 9,838.81 | 7,439.49 | 5,000 |
| SS0Z15C950 | Short Options Outright | 8,556.40 | 7,099.48 | 5,156.92 | 5,000 |
| SS0Z15C975 | Short Options Outright | 6,852.10 | 5,222.47 | 3,049.63 | 5,000 |
| SS0Z15C1000 | Short Options Outright | 5,000.00 | 3,860.00 | 2,340.00 | 5,000 |
| SS0Z15C1025 | Short Options Outright | 4,580.00 | 3,440.00 | 1,920.00 | 5,000 |
| SS0Z15C1050 | Short Options Outright | 4,220.00 | 3,080.00 | 1,560.00 | 5,000 |
| SS0Z15P875 | Short Options Outright | 6,495.10 | 5,338.57 | 3,796.53 | 5,000 |
| SS0Z15P900 | Short Options Outright | 9,774.30 | 8,522.01 | 6,852.29 | 5,000 |
| SS0Z15P925 | Short Options Outright | 13,041.50 | 11,169.05 | 8,672.45 | 5,000 |
| SS0Z15P950 | Short Options Outright | 17,053.30 | 14,883.31 | 11,989.99 | 5,000 |
| SS0Z15P975 | Short Options Outright | 21,382.10 | 19,467.47 | 16,914.63 | 5,000 |
| SS0Z15P1000 | 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 = $(204-206) = \text{THB } 2$ 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 $(199-204) = \text{THB } 5$ 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 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 | $(199-204)*1,000=-5,000$ | | 11,860 |
| | Posting of additional collateral | | | 6,000 | 17,860 |
| 4 | Futures sold at THB 207 | 207 | $(207-199)*1,000=+8,000$ | | 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.

Nevertheless, brokers have another level for collateral requirement, that is, the Force Closed level. Suppose an investor has yet to post the additional collateral required, and there are further changes in price during the day that results in additional losses and make the investor's margin account balance lower during the trading day. In this case, the investor's position will be forcefully closed. However, this process will take into consideration the intraday prices to examine the sufficiency of collateral in addition to the Mark-to-Market process that is done at the end of the trading day as per normal.

In case of options, the Mark-to-Market process will evaluate the overall characteristics of the underlying asset class. The process will be performed after trading

has concluded using the settlement price of each option series that has an open position in the portfolio. The framework used will be the SPAN (Standardized Portfolio Analysis of Risk) principle which is used in international futures exchanges such as CME in the US. SPAN will calculate for the maximum risk under certain assumptions about the change and the volatility in the underlying variable, which in this case being the SET50 index and the volatility of the SET50 index. Once the risk has been derived, it is evaluated against the assets. It is clear that the collateral requirements for options, both the Initial Margin and Maintenance Margin, will change in each day according to the SPAN calculations. This is difference from the collateral requirement for futures where the requirements are known and fixed until further change is announced by a 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 an additional collateral requirement to counteract the volatility in futures prices for periods where there is an extended period of non-trading days that is not part of normal holiday or special holiday only for the futures exchanges. During these periods, other markets may continue to operate as per normal and that could lead significant changes in the underlying price. Investors bear extra risk during these periods.

For example: Super Margin announcement is made for Gold Futures and Currency Futures during the Songkran holidays as the underlying prices continue to fluctuate according to the global market that operates as usual during the Songkran holidays. The collateral is required from those investors holding positions during the off-days and those making trade in the last operating day before the holidays. Once the

market resumes trading as normal, the collateral requirements will be reverted to the original.

2. **Concentration Margin:** is an additional collateral required to mitigate the effects from financial liquidity issues that arise from the concentration of the open position in the futures contract. The clearing house will evaluate the potential damage that could occur from traders being unable to clear their open interest status within 1 operating day. Should the risk be discovered, the clearing house will inform brokers to post additional collateral requirement before the next operating day starts trading. The value of the collateral will be the value measured against the risk from having an open interest position in all the accounts under the broker's management that show signs of clustering or higher proportion when compared to the overall market. Once the risk has subsided, 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 an additional collateral that is required as the contract enters into the maturity month. The Clearing house collects this collateral to ensure that traders will not default on the contract as the maturity draws near.

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 point, 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 clearing house must calculate the final settlement price to adjust the traders' position on the expiry date of the contract. Typically, futures contracts will have clear stipulations regarding the method that the clearing house will use to determine the final price. The price calculated must reflect the market value of the underlying on the delivery date (reflect S_T). After that, the clearing house will calculate profit or loss to the contract holder that has open interest status. The profit (loss) of an investor holding long position is (Final Price-Future Price with Open Interest Status) x Size of Contract x Quantity of Contracts while profit(loss) for an investor holding short position is (Future Price with Open Interest Status-Final Price) x Size of Contract x Quantity of Contracts with both party settling the difference between the two positions in cash with the clearing house instead of physical delivery. Investors who result in losses shall make their payments while investors who result in gains shall receive the payment for their profits.

Physical Delivery: Typically, in futures contracts that stipulate physical delivery, the contract conditions will allow the seller a choice in selecting the delivery option. These rights could prove to be valuable to the seller upon delivery time. For example, the contract could have a clause stating that the delivery must happen within a specified delivery period. The investor holding sell position has the right to choose any day within the delivery period. Some contract does not specify details regarding the underlying to be delivered. For instance, government bonds future contracts allow the sellers to deliver government bonds with differing coupon price. In some cases, the seller has an option to choose the place of delivery. Apart from that, traders may use the Exchange for Physicals Process (EPP) in case of EPP delivery, both traders will agree upon the terms of delivery themselves, which could differ from that on the contract. After which, the traders shall inform the Futures Exchange which usually will not disagree if both traders come to an agreement.

Apart from this, there are contracts that specify delivery in the form of 'both options' which is a condition that provides both parties options to choose either deliver

physically or settle the difference in cash. Once the futures contract matures, both traders must inform the exchange of their preference, if the exchange was not informed or the trader was not matched for physical delivery, the exchange will decide to terminate the position in the contract with cash settlement for the difference.

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 Oil 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 4-15: Trading report in the TFEX

ราคาคิดเฉพาะการซื้อขายแบบ Auto-Matching ข้อมูลล่าสุด 15 นาที 17 ต.ค. 2557 ข้อมูล ณ เวลา 17:16:43

| ชื่อย่อสัญญา | เดือนที่สิ้นสุดสัญญา | เปิด | สูง | ต่ำ | เสนอซื้อ | เสนอขาย | ล่าสุด | เปลี่ยนแปลง (%เปลี่ยนแปลง) | ปริมาณ | สถานะคงค้าง | ราคาที่ใช้ชำระราคาวันก่อนหน้า | ราคาที่ใช้ชำระราคา |
|--------------------------------|----------------------|---------|---------|---------|----------|---------|---------|-----------------------------|--|----------------|-------------------------------|--------------------|
| SET50 Index Futures | | | | | | | | วันที่ซื้อขาย: 17 ต.ค. 2557 | TFEX Thailand Equity Index Market Status: Closed | | | |
| SET50 Index Futures | | | | | | | | | | | | |
| S50V14 | ต.ค. 57 | 1,009.0 | 1,015.3 | 1,008.8 | 1,008.2 | 1,018.5 | 1,015.3 | +8.2 (+0.81%) | 10 | 27 | 1,007.10 | 1,015.30 |
| S50X14 | พ.ย. 57 | - | - | - | - | 1,015.6 | - | - | - | 2 | 1,006.40 | 1,014.60 |
| S50Z14 | ธ.ค. 57 | 1,009.2 | 1,013.6 | 1,007.5 | 1,012.6 | 1,013.0 | 1,013.0 | +6.3 (+0.63%) | 96,240 | 205,150 | 1,006.70 | 1,012.90 |
| S50H15 | ม.ค. 58 | 1,004.0 | 1,008.1 | 1,002.3 | 1,007.5 | 1,007.8 | 1,007.6 | +5.8 (+0.58%) | 8,689 | 19,823 | 1,001.80 | 1,007.80 |
| S50M15 | มี.ย. 58 | 1,001.7 | 1,005.4 | 1,000.0 | 1,003.7 | 1,004.5 | 1,004.0 | +4.1 (+0.41%) | 707 | 2,202 | 999.90 | 1,004.30 |
| S50U15 | ก.ย. 58 | 1,000.0 | 1,002.8 | 997.6 | 1,002.0 | 1,003.5 | 1,001.1 | +2.9 (+0.29%) | 205 | 821 | 998.20 | 1,002.00 |
| รวม SET50 Index Futures | | | | | | | | | 105,851 | 228,025 | | |

- **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 submit 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 $(100 - 99.20) \times 10 = \text{THB } 8$. 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 $(99.20 - 96.00) \times 10 = \text{THB } 32$, 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 $(101.00 - 96.00) \times 10 = \text{THB } 50$. 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 $(104 - 103) \times 10 = \text{THB } 10$. 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 $(104 - 100) \times 10 = \text{THB } 40$ or the price difference of the returned money in the account and the total money the investor has transferred to the account $130 - (50 + 40) = \text{THB } 40$.

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 $(100 - 104) \times 10 = \text{THB } 40$ or $45 - (50 + 35) = \text{THB } 40$.

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:

$$\text{Change in price} = (\text{Initial margin} - \text{Maintenance margin}) / \text{Contract size}$$

From the Examples, if the futures price changes by more than $(5 - 3) / 1 = \text{THB } 2$ 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 additional 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:

$$\text{Profit (Loss)} = (\text{Price of the seller position} - \text{Price of the buyer position}) \times \text{Contract size} \times \text{Numbers of contracts}$$

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 $(30-33) \times 1,000 \times 2 = -6,000$. 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 2 nd | Delivery Date |
| Sell 2 futures of XYZ stock at 30 THB/share on January 2 nd | | Receive 60,000 THB |
| Purchase 2 futures of XYZ stock at 33/share on January 10 th | | 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 Index¹ 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, S50U14C1000 refers to an options contract on SET50 Index with an expiration date in September 2014 and exercise price of 1,000 points. 'S50' is an abbreviation for underlying asset, U14 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 S50M15P1100 is sold at 30 points, the premium of such contract shall be $30 \times 200 =$ 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)

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 2014, there are U14, V14, X14 (three nearest consecutive months) and Z14 (the last month of the next quarter) contracts for trading. When U14 expires, H15 shall replace, resulting in V14, X14, Z14 (three nearest consecutive months) and H15 (the last month of the next quarter). When V14 expires, F15 shall replace, resulting in X14, Z14, F15 (3 nearest consecutive months) and H15 (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

¹ Please see chapter 1 for more details.

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 $0.1 \times 200 = \text{THB } 20 / \text{contract}$

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 2014.

Table 4-9: Example of SET50 Index Options Trading on September 23, 2014*

Underlying asset, information received on September 23, 2014 (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 2014, information received on September 23th, 2014 (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 margin².

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

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.

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contract. Also, in contract negotiating, only the price and numbers of contracts 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 closed³. 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 S50H14C900 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 S50H14C900. 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 $(20 - 25) \times 200 = \text{THB } -1,000$. This means Sompong is in loss caused by closing the

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.

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position. The Clearing House shall deduct the money from Sompong's account⁴ 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 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

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

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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.

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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.

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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

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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.

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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

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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

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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 Licensees⁵

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.

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

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.

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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.

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In addition, a person who is or will be a majority shareholder⁶ 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

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

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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 operating staff shall work in conformity to operational standards⁷ 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

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

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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 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

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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

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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.

Example: 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

Example: 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.

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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

Example: 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*

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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.*

Example: 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.

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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?*

Example: 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

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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

Example: 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.

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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

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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

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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.*

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- *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

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- 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:

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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

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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

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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

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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).

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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

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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

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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

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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

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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

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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:

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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.

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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;

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•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 facts⁸ and the facts have not yet open to the public, do the following acts:

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.

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.

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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.

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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.

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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

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| Items | Details |
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| 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 $\pm 30\%$ 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: 1:45 pm – 2:15 pm Afternoon session: 2:15 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

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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:

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- **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

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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 traded daily in all regions of the world, so gold price changes throughout. Price for gold trading varies depending on gold purity. In the London market, the trading price for gold is gold with a purity of 99.5%. However, is the underlying asset for gold derivative products traded in TFEX are based on two types of gold: gold with a purity of 96.5% which is the standard for gold trading in Thailand and is well known among Thai investors, and gold with a purity of 99.9% which is the international standard for pure gold. The latter is usually traded in US dollars and is the underlying asset of Gold-D Futures. To compare gold prices from international markets to calculate the prices of Gold Futures and Gold-D Futures, it is a must to consider different gold purities as well.

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

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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 a high fluctuation in its price, it is extremely necessary to have tools to manage any risk caused by price fluctuation. The underlying asset for RSS3 Futures and RSS3D Futures in TFEX is Ribbed Smoke Sheets No. 3 as per the “Green Book” standard. This is the first agricultural product that is traded in TFEX. RSS3 is an acronym for Ribbed Smoked Sheet No.3, which is a type of rubber product used as a benchmark for global rubber prices.

- **Currency Exchange Rate**

An underlying asset of USD Futures is the rate of Thai Baht currency per USD. This is due to the significant role of the USD in the global economy and it is an important currency for international trade, and in investment and commodity markets including crude oil, gold, etc. For Thailand, the movement of the THB currency against the USD currency is an economic factor that entrepreneurs and investors significantly rely on. As the United States is one of Thailand’s top export and import partners, the movement of the USD currency heavily affects Thai business sectors and the economy. Since the past few years, investors have been investing in commodity derivatives, such as gold and crude oil which increases investors’ needs for management of risk caused by the movement of the USD currency.

- **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-

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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 future which matures in December 2014 (TGB5Z14) 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 December 2014.

Providing that, as of September 1st, 2014, 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 September 1st, 2014

| Series | Issue Code | ISIN Code | Maturity Date | Coupon (%) | Amount* (THB million) |
|---------|------------|--------------|---------------|------------|-----------------------|
| TGB5Z14 | LB193A | TH062303T302 | 8-Mar-19 | 3.450 | 60,000 |
| | LB196A | TH062303T609 | 13-Jun-19 | 3.875 | 301,994 |

*As of September 1st, 2014

According to Table 5-2, LB193A and LB196A are considered to be eligible bonds as their maturity terms starting from December 1st, 2014 are between 4-6 years and their outstanding amounts are more than THB 5,000 million.

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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 TGB5Z14 of which status as a nearest month series commences in the middle of September 2014 (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 December 2014 in early September 2014 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 17 banks in Thailand who are BIBOR contributors.

Figure 5-1: BIBOR Quotations as of September 24th, 2014 (by banks)

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อัตราดอกเบี้ยอ้างอิงระยะสั้นตลาดกรุงเทพ (BIBOR) รายงานการ ณ วันที่ 24 กันยายน 2557

| Institution | 11.00 a.m. | | | | | | | |
|--|------------|---------|---------|---------|---------|---------|---------|---------|
| | O/N | 1 Week | 1 Month | 2 Month | 3 Month | 6 Month | 9 Month | 1 Year |
| Bangkok Bank | 2.00000 | 2.05000 | 2.10000 | 2.15000 | 2.20000 | 2.30000 | 2.45000 | 2.60000 |
| Bank For Agriculture and Agricultural Cooperatives | 2.00000 | 2.02000 | 2.08000 | 2.13000 | 2.18000 | 2.28000 | 2.42000 | 2.56000 |
| Bank of Ayudhya | 2.00000 | 2.02000 | 2.07000 | 2.12000 | 2.17000 | 2.27000 | 2.40000 | 2.50000 |
| Bank of Tokyo-Mitsubishi | 2.00000 | 2.02000 | 2.06000 | 2.10000 | 2.15000 | 2.27000 | 2.38000 | 2.51000 |
| CIMB THAI BANK | 2.02000 | 2.04000 | 2.10000 | 2.15000 | 2.20000 | 2.30000 | 2.43000 | 2.55000 |
| Citibank | 2.00000 | 2.03000 | 2.08000 | 2.14000 | 2.18000 | 2.29000 | 2.42000 | 2.54000 |
| HSBC | 2.00000 | 2.03000 | 2.07000 | 2.12000 | 2.16000 | 2.29000 | 2.40000 | 2.51000 |
| Kasikornbank | 2.00000 | 2.05000 | 2.12000 | 2.15000 | 2.20000 | 2.30000 | 2.45000 | 2.59000 |
| Krung Thai Bank | 2.00000 | 2.02000 | 2.10000 | 2.13000 | 2.16000 | 2.30000 | 2.45000 | 2.60000 |
| Mizuho Corporate Bank | 2.00000 | 2.03000 | 2.06000 | 2.10000 | 2.14000 | 2.27000 | 2.39000 | 2.49000 |
| Siam Commercial Bank | 2.00000 | 2.05000 | 2.10000 | 2.15000 | 2.19000 | 2.30000 | 2.45000 | 2.60000 |
| Standard Chartered Bank | 2.00000 | 2.00000 | 2.09000 | 2.14000 | 2.18000 | 2.29000 | 2.43000 | 2.55000 |
| Sumitomo Mitsui Banking | 1.95000 | 2.01000 | 2.07000 | 2.15000 | 2.20000 | 2.30000 | 2.42000 | 2.52000 |
| Thai Military Bank | 2.00000 | 2.03000 | 2.09000 | 2.15000 | 2.17000 | 2.27000 | 2.42000 | 2.54000 |
| Thanachart Bank | 2.00000 | 2.04000 | 2.10000 | 2.15000 | 2.20000 | 2.30000 | 2.45000 | 2.55000 |
| The Government Savings Bank | 2.00000 | 2.04000 | 2.08000 | 2.11000 | 2.16000 | 2.29000 | 2.41000 | 2.55000 |
| United Overseas Bank | 2.00000 | 2.03000 | 2.08000 | 2.13000 | 2.18000 | 2.28000 | 2.42000 | 2.52000 |

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, S50H18 is an abbreviation for SET50 Index Futures of which its maturity month and year are March (H) and 2018 respectively. For ease in understanding and memorization for investors, futures ticker symbols are as follows:

Table 5-3: Symbols for Underlying Assets of Futures

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| 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 D-Futures | Gold with a purity of 99.99% | GD |
| Interest Rate Futures | Interest Rates: - 3-month BIBOR - 5-year Thai Government Bond | Symbols: BB3 TGB5 |
| USD Futures | THB currency rate per USD | USD |
| Rubber Futures | Ribbed Smoke Sheets No. 3 | Two contracts are available: - RSS3: The contract which allows cash settlement in case an investor is incapable of delivering RSS3 - RSS3D: The contract which the settlement method is only to deliver RSS3 |

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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 2018, “18” 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 analyze the price trend during that period. For example, S50H18 of which maturity is March 2018 can be a predictor for the price of SET50 Index during March 2018.

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.

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Due to the additional conditions of Options, details regarding the type of right and strike price must be included in the symbol, which is stated after the maturity year. For example, S50H16C900 is a call option maturing in March 2016 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.

Strike price interval: According to the conditions of SET50 Index Options, TFEX has determined the **strike price interval** of 25 points so that investors will know which strike prices are available. **TFEX has determined minimum numbers of series, having them cover the movement of underlying indices and ensure sufficiency of supply for investors' trading demand.** Each day, there must be one series of SET50 Index Options holding the status "At-the-money", at least two series with "In-the-money" status and at least two series with "Out-of-the-money" status. To consider those statuses, there must be a comparison of strike prices of SET50 Index Options against their index closing prices as of the previous business day.

For example, to know the strike prices of SET50 Index Options on the first day of trading, first of all, we must know the strike price of "At-the-money" options. Providing that the index of SET50 closed at 1003.24 points on the previous business day, "At-the-money" options are SET50 Index Options with a strike price of 1000 points¹. As TFEX has determined the strike price interval of 25 points, the available "In-the-money" call options (with strike prices lower than SET50 index prices) are series with strike prices of 975 points and 950 points, respectively, or two intervals after the "At-the-money" series. Likewise, "Out-of-the-money" call options (with strike prices higher than SET50 index prices) are series with strike prices of 1025 points and 1050 points, respectively, or two intervals after the "At-the-money" series.

According to the principle above, SET50 Put Options comprises one series of "At-the-money" put options (with a strike price of 1000 points), two series of "In-the-money" put options (with a strike price of higher than SET50 index prices): one with a strike price of 1025 points and the other with a strike price of 1050 points, and two series of "Out-of-the-money" put options (with a strike price of lower than SET50 index prices): one with a strike price of 975 points and the other with a strike price of 950 points as shown in Table 5-5.

¹ 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

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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.

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

| Call | Strike Price | Put |
|------------------------------|--------------|-----------------------------|
| S50C1050 Out-of-the-money | 1050 | S50C1050 In-the-money |
| S50C1025 Out-of-the-money | 1025 | S50C1025 In-the-money |
| S50C1000 At-the-money | 1000 | S50C1000 At-the-money |
| S50C975 In-the-money | 975 | S50C975 Out-of-the-money |
| S50C950 In-the-money | 950 | S50C950 Out-of-the-money |

According to Table 5-5, in each settlement month, there are at least five series of SET50 call options available (one series of At-the-money, two series of In-the-money, and two series of Out-of-the-money) and five series of SET50 put options available totalling to ten series in each settlement month. In addition, TFEX's regulation states that, whenever there is trading, SET50 Index Options must have 4 different maturity months. Therefore, the minimum number of options series in each settlement month is at least 40 series.

The reason why SET50 Index Options have many strike prices is TFEX emphasizes the advantages of being able to trade of options with different strike prices in different settlement months as investors can use the different options to create investing strategies and pay-offs structures that according to their level of acceptable risk.

Effects of Change in the SET50 Index

According to the example above, if at the end of the business day, the SET50 index closes at 1012.96 points, what are effects on the number of option series opened for trading? To answer, first of all the principle is that there must be one series of At-the-money options, at least two series of "In-the-money" options and at least two series of "Out-of-the-money" options when in trading.

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We start with considering the At-the-money series¹. When SET50 is at 1012.96 points, At-the-money series are options with strike prices of 1025 points. Then, we must consider whether there are at least two series of “In-the-money” call options and put options each and at least two series of “Out-of-the-money” call options and options each.

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

| Call | Strike Price | Put |
|------------------------------|--------------|------------------------------|
| S50C1075 Out-of-the-money | 1075 | S50C1075 In-the-money |
| S50C1050 Out-of-the-money | 1050 | S50C1050 In-the-money |
| S50C1025 At-the-money | 1025 | S50C1025 At-the-money |
| S50C1000 In-the-money | 1000 | S50C1000 Out-of-the-money |
| S50C975 In-the-money | 975 | S50C975 Out-of-the-money |
| S50C950 In-the-money | 950 | S50C950 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 points².

For In-the-money call options (with a strike price lower than the SET50 Index), there are three series available: those with strike prices starting from 1000 to 950 points. The additional series comes from the series with the strike price of 1000 which was previously At-the-money and now is In-the-money, caused by the change in SET50 Index. The same effect is also found in Out-of-the-money put options (with a strike price lower than the SET50 Index).

¹ The strike price is 1012.96 points. After rounding up 12.96 to a whole number divisible by 25, SET50 Index is 1025 points.

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² The whole number divisible by 25 and closest to 1012.96 points after rounded up is 1025 points because the value of the two final place values with the decimals is greater than 12.50 points.

For Out-of-the-money call options (with a strike price higher than the SET50 Index), there is only one series available (the one with a strike price of 1050 points). Consequently, on the next business day, TFEX will offer one additional series of call options for trading, the one with strike price of 1075 points, in order to have at least two series of Out-of-the-money options available. For In-the-money put options (with a strike price higher than the SET50 index), there is only one left (the one with a strike price of 1050 points) causing TFEX to offer one more put option series with a strike price of 1075 points on the next business day.

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 $(1049.00 - 1040.00) \times \text{THB } 200/\text{contract} = \text{THB } 1,800$). 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 $1050 \times \text{THB } 200$ 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.

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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 $(42.00 - 40.50) \times \text{THB } 200 = \text{THB } 300$).

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

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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

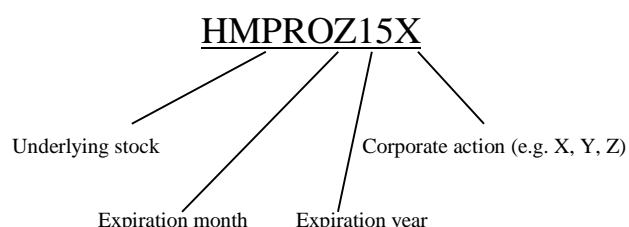
| Forms of Corporate Actions | Adjustments |
|---|---|
| Capital increase by means of right issuing or the receipt of transferable subscription rights (TSRs) to existing shareholders | The adjustment is made if the subscription rights of newly issued shares or TSRs received by existing shareholders in proportion to their shareholding rights are “in the money”, that is, the strike price is <u>lower than</u> 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 |

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| | |
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| | 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, 2017, there would be 6 series of SET50 Index Futures with different settlement months as follows:

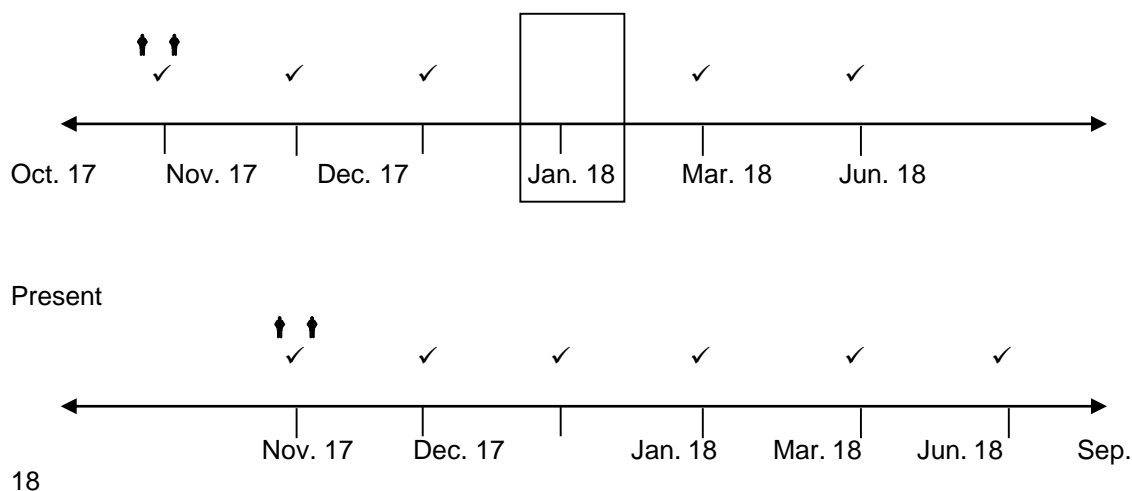
- October 2017 (Maturity: the nearest month)
- November 2017 (Maturity: the 2nd month of three nearest consecutive months)
- December 2017 (Maturity: the 3rd month of three nearest consecutive months)
- March 2018 (Maturity: the final month of the nearest quarterly months)
- June 2018 (Maturity: the final month of the 2nd nearest quarterly months)
- September 2018 (Maturity: the final month of the 3rd nearest quarterly months)

At the end of October 2017, SET50 Index Futures of which the settlement month is October 2017 will reach maturity followed by those of which maturity is in November 2017 and December 2017, respectively. The rest are those of which

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the settlement months are March, June, and September 2018. Therefore, there are six series available for trading as seen in Table 5-2. In practice, TFEF requires a new series (January 2018) to be traded on the final day the existing series matures (October 2017).

Figure 5-2: Settlement Months of SET50 Index Futures



5.5.2 Settlement Months of Futures in TFEF

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 TFEF 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

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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, $(1 - \text{the short-term interest rate that one wishes to buy/sell in the future}) * 100$. 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,

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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 $\pm 30\%$ 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 = $\pm 30\%$ 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 2017, 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: $30 + (0.3)(1020) = 30 + 306 = 336$ index points
- The floor price: $30 - (0.3)(1020) = 30 - 306 \rightarrow 0.10$ index points (the allowable lowest price when a negative yield is obtained.)

5.7.3 Trading when price reaches a certain limit

Trades over the price limit cannot be done in TFEX. For instance, SET50 Index Futures is allowed to fluctuate within a range of $\pm 30\%$ of the latest settlement price. Such trading prices will be announced at the end of each day by the clearing house. For example, if the clearing house declares the daily settlement price of 1000 index points for SET50 Index Futures, the price of the following

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day can fluctuate within a range of $\pm 30\%$ of 1000 index points equal to ± 300 index points ($1000 \times 30\%$). That is, the ceiling and floor limits on the second day are 1300 index points and 700 index points, respectively.

For products using a two-tier daily price limit system such as Baht Gold Futures and 10 Baht Gold Futures, when trading hits the limit at $\pm 10\%$ of the latest settlement price, a temporary halt (i.e. 20 minutes) will be made. Then, before reopening using automatic order matching, there will be a pre-open session (i.e. 10 minutes). The reopened session will have an expanded price limit of $\pm 20\%$ of the latest daily settlement price.

If the latest daily settlement price of 50 Baht Gold Futures is 20,000 baht, the quoted price on the following trading day can fluctuate within a range of 18,000-22,000 baht. That is, TFEX will announce a temporary halt when the price reaches the floor limit of 18,000 baht or the ceiling limit of 22,000 baht. After trading reopens, the price limits will be adjusted to $\pm 20\%$ which is the floor of 16,000 baht and the ceiling of 24,000.

TFEX implements the policy of daily price limit to allow a cool-off period for unexpected situations which may significantly affect the futures market. As the price will not exceed the limits, investors will have more time in seeking more information and making investment decisions.

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 am for investors to manage their orders and starts its regular session for order matching at 9:45 am.

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- Pre-open: 9:15 – 9:45 am
- Morning session: 9:45 am – 12:30 pm

Currently, trading of Rubber Futures is allowed to continue from morning session to afternoon session with no intermission after 12:30 pm. 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 13:45 pm for investors to place orders and starts its regular session for order matching at 14:15 pm.

- Pre-open: 13:45 – 14:15 pm
- Afternoon session: 14:15 – 16:55 pm

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

Night session usually runs from 18:45 pm for investors to place orders and starts its regular session for order matching at 19:00 pm.

- Pre-open: 18:45 – 19:00 pm
- Night session: 19:00 – 23:55 pm

Night session is open for investors to adjust their strategies and to cover Gold Futures and Gold-D Futures trades which operate during that time in global marketplaces.

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

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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

| | |
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| | 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 |

| | |
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| | | | | |
|----|----------|----------|-----------------------|--------------------------------|
| 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

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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:

$$\text{Price per one baht weight of gold} = \text{London Gold AM Fixing} \times (15.244/31.1035) \times (0.965/0.995) \times (\text{THB/USD})$$

Example: The last trading day for Gold Futures expiring in June 2017 will be 29 June. On this day, London Gold AM Fixing price at 10:30 am is 1,246.60 US Dollars per one troy ounce and the exchange rate obtained from Thomson Reuters is fixed at 15:30 pm is 33.9675 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 AM) | | Exchange Rate | |
|-----------|---------------------------------|-------|---------------|-------|
| | USD/troy ounce | Time | THB/USD | Time |
| 29-Jun-17 | 1,246.60 | 16:31 | 33.9675 | 15:30 |

$$\text{Final Settlement Price} = \text{London Gold AM Fixing} \times (15.244/31.1035)$$

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$$\begin{aligned}
& \times (0.965/0.995) \times (\text{THB/USD}) \\
& = 1,246.60 \times (15.244/31.1035) \times (0.965/0.995) \times 33.9675 \\
& = 20,127.26 \text{ Baht per one baht weight of gold}
\end{aligned}$$

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:

$$\text{Settlement Value (THB)} = \text{Settlement Price (USD)} \times (\text{THB/USD}) \times 3.2148$$

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

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.

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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

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

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.

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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:

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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% | | |
| <table border="1" style="margin: auto;"> <tr> <td>Final Yield</td> <td>3.4166%</td> </tr> </table> | | | | | Final Yield | 3.4166% |
| 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

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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: Baht/USD Futures

TFEX uses the USD/THB exchange rate announced via Thomson Reuters at 11 am as it is the rate which commercial banks generally refer to for transactions and has large number of contributors.

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 contract⁴ or domestic underlying asset price will be used, rounded to 2 decimal places.

⁴ 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

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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.

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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 quite high. 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 | Maximum 20,000 contracts of each underlying asset in Single Stock Futures in any contract month or all contract months combined |

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|--------------------------------|---|
| 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. |
| 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 has 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

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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 2014.
- Mr. Yingrauy sells (Short) 4,000 contracts in SET50 Index Futures with the expiration date in December 2014.

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

| | Long | Short | Net |
|-----------------|-------|-------|-------------|
| S50U14 (Sep 14) | 5,000 | | Long 5,000 |
| S50Z14 (Dec 14) | | 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 2014 and December 2014, 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 2014.
- Mr. Yingrauy buys (Long) 9,100 contracts in SET50 Index Futures with the expiration date in March 2015.

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

| | Long | Short | Net |
|-----------------|----------------|-------|--------------|
| S50U14 (Sep 14) | 5,000 + 90,000 | | Long 95,000 |
| S50Z14 (Dec 14) | | 4,000 | Short 4,000 |
| S50H15 (Mar 15) | 9,100 | | Long 9,100 |
| Total | | | Long 100,100 |

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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 2014, December 2014 and March 2015, 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 2015.
- Mr. Yingrauy buys (Long) 6,000 contracts in SET50 Call Option with the expiration date in September 2014. The exercise price is 1030 (S50U14C1030).
- Mr. Yingrauy buys (Long) 5,000 contracts in SET50 Put Option with the expiration date in September 2014. The exercise price is 1030 (S50U14P1030).

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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 | | | |
| S50U14 (Sep 14) | 95,000 | | <i>Long 95,000</i> |
| S50Z14 (Dec 14) | | 4,000 | <i>Short 4,000</i> |
| S50H15 (Mar 15) | 9,100 | 5,000 | <i>Long 4,100</i> |
| Options | | | |
| S50U14C1030 (Sep 14) | 6,000 | | ?? |
| S50U14P1030 (Sep 14) | 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.

$$\text{S50U14C1030: } 6,000 \times (+0.35) = 2,100 \text{ contracts}$$

$$\text{S50U14P1030: } 5,000 \times (-0.65) = -3,250 \text{ contracts}$$

It is found that 6,000 contracts of Long Call Options (S50U11C1030) is equal to 2,100 contracts of Long SET50 Index Futures while 5,000 contracts of Long Put Options (S50U11P1030) 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.

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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 14 Contract | | | |
| S50U14 (Sep 14) | 95,000 | | Long 95,000 |
| S50U14C1030 (Sep 14) | 2,100 | | Long 2,100 |
| S50U14P1030 (Sep 14) | -3,250 | | Short 3,250 |
| Total September 14 Contract | | | Long 93,850 |
| December 14 Contract | | | |
| S50Z14 (Dec 14) | | 4,000 | Short 4,000 |
| Total December 14 Contract | | | Short 4,000 |
| March 15 Contract | | | |
| S50H15 (Mar 15) | 9,100 | 5,000 | Long 4,100 |
| Total March 15 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 2014 is equal to Long position of 93,850 contracts (95,000 + 2,100 – 3,250) while the net position in December 2014 and March 2015 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 2014 Put Options contracts with a strike price of 1000.

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- Mr. Yingrauy buys (Long) 1,000 September 2014 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 14 Contract | | | |
| S50U14 (Sep 14) | 95,000 | | <i>Long 95,000</i> |
| S50U14C1030 (Sep 14) | 6,000 | | ?? |
| S50U14P1030 (Sep 14) | 5,000 | | ?? |
| S50U14P1000 (Sep 14) | | 1,000 | ?? |
| S50U14C1010 (Sep 14) | 1,000 | | ?? |
| | | | |
| | | | |
| Total September 14 Contract | | | ?? |
| December 14 Contract | | | |
| S50Z14 (Dec 14) | | 4,000 | <i>Short 4,000</i> |
| Total December 14 Contract | | | <i>Short 4,000</i> |
| March 15 Contract | | | |
| S50H15 (Mar 15) | 9,100 | 5,000 | <i>Long 4,000</i> |
| Total March 15 Contract | | | <i>Long 4,000</i> |
| Total All Months Combined | | | ?? |

From the preceding data, the September 2014 SET50 Index Options positions must be converted to SET50 Index Futures equivalent positions before calculating the total positions.

| | | | |
|--------------|-----------------|---|------------------|
| S50U14C1030: | 6,000 x (+0.35) | = | 2,100 contracts |
| S50U14P1030: | 5,000 x (-0.65) | = | -3,250 contracts |
| S50U14P1000: | 1,000 x (-0.46) | = | -460 contracts |
| S50U14C1010: | 1,000 x (+0.54) | = | 540 contracts |

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The data reveals that selling 1,000 Put Options (S50U14P1000) is equivalent to buying 460 SET50 Index Futures while buying 1,000 Call Options (S50U14C1010) is equivalent to buying 540 SET50 Index Futures.

Moreover, the net positions of S50Z14 and S50H15 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 14 Contract | | | |
| S50U14 (Sep 14) | 95,000 | | <i>Long 95,000</i> |
| S50U14C1030 (Sep 14) | 2,100 | | <i>Long 2,100</i> |
| S50U14P1030 (Sep 14) | -3,250 | | <i>Short 3,250</i> |
| S50U14P1000 (Sep 14) | | -460 | <i>Long 450</i> |
| S50U14C1010 (Sep 14) | 540 | | <i>Long 540</i> |
| Total September 14 Contract | | | <i>Long 94,850</i> |
| December 14 Contract | | | |
| S50Z14 (Dec 14) | | 4,000 | <i>Short 4,000</i> |
| Total December 14 Contract | | | <i>Short 4,000</i> |
| March 15 Contract | | | |
| S50H15 (March 15) | 9,100 | 5,000 | <i>Long 4,100</i> |
| Total March 15 Contract | | | <i>Long 4,100</i> |
| Total All Months Combined | | | <i>94,950</i> |

Considering each month's contract, Mr. Yingruay's net positions of September 2014 contracts equal to 94,850 (Long) SET50 Index Futures (95,000 + 2,100 – 3,250 + 460 + 540) while his net positions of December 2014 and March 2015 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 2014 SET50 Index Futures contracts
- Buy 2,000 December 2014 SET50 Put Options contracts with a strike price of 1030 (S50Z11P1030)

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- Sell 1,000 December 2014 SET50 Put Options contracts with a strike price of 1040 (S50Z11P1040)

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 14 Contract | | | |
| S50U14 (Sep 14) | 95,000 | | <i>Long 95,000</i> |
| S50U14C1030 (Sep 14) | 6,000 | | ?? |
| S50U14P1030 (Sep 14) | 5,000 | | ?? |
| S50U14P1000 (Sep 14) | | 1,000 | ?? |
| S50U14C1010 (Sep 14) | 1,000 | | ?? |
| Total September 14 Contract | | | ?? |
| December 14 Contract | | | |
| S50Z14 (Dec 14) | | 4,000 + 5,000 | <i>Short 9,000</i> |
| S50Z11P730 (Dec 11) | 2,000 | | ?? |
| S50Z11P730 (Dec 11) | | 1,000 | ?? |
| Total December 14 Contract | | | ?? |
| March 15 Contract | | | |
| S50H15 (Mar 15) | 9,100 | 5,000 | <i>Long 4,100</i> |
| Total March 15 Contract | | | <i>Long 4,100</i> |
| 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:

| | | | |
|--------------|-----------------|---|------------------|
| S50U14C1030: | 6,000 x (+0.35) | = | 2,100 contracts |
| S50U14P1030: | 5,000 x (-0.65) | = | -3,250 contracts |
| S50U14P1000: | 1,000 x (-0.46) | = | -460 contracts |

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| | | | |
|--------------|-----------------|---|------------------|
| S50U14C1010: | 1,000 x (+0.54) | = | 540 contracts |
| S50Z14P1030: | 2,000 x (-0.57) | = | -1,140 contracts |
| S50Z14P1040: | 1,000 x (-0.52) | = | -620 contracts |

The data shows that buying 2,000 Put Options (S50Z14P1030) is equivalent to selling 1,140 SET50 Index Futures while selling 1,000 Put Options (S50Z14P1040) is equivalent to buying 620 SET50 Index Futures.

Moreover, S50Z14 contracts have Short positions equal to 9,000 and S50H12 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 14 Contract | | | |
| S50U14 (Sep 14) | 95,000 | | <i>Long 95,000</i> |
| S50U14C1030 (Sep 14) | 2,100 | | <i>Long 2,100</i> |
| S50U14P1030 (Sep 14) | -3,250 | | <i>Short 3,250</i> |
| S50U14P1000 (Sep 14) | | -460 | <i>Long 460</i> |
| S50U14C1010 (Sep 14) | 540 | | <i>Long 540</i> |
| Total September 14 Contract | | | <i>Long 94,850</i> |
| December 14 Contract | | | |
| S50Z14 (Dec 14) | | 4,000 + 5,000 | <i>Short 9,000</i> |
| S50Z11P730 (Dec 11) | -1,140 | | <i>Short 1,140</i> |
| S50Z11P730 (Dec 11) | | -620 | <i>Long 620</i> |
| Total December 14 Contract | | | <i>Short 9,520</i> |
| March 15 Contract | | | |
| S50H15 (Mar 15) | 9,100 | 5,000 | <i>Long 4,100</i> |
| Total March 15 Contract | | | <i>Long 4,100</i> |
| Total All Months Combined | | | 89,430 |

Considering each month's contract, Mr. Yingruay's net positions of September 2014 contracts equal to 94,850 (Long). The net positions of December 2014 contracts equal to 9,520 (Short) (-9,000 – 1,140 + 620) and the net positions of March 2014 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.

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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.

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Table 5-14: The Reporting Limit Prescribed by TFEX

| Products | Details |
|--------------------------------|--|
| SET50 Index Futures | Holding of at least 2,500 net positions of SET50 Index Futures in any one contract month, or all contract months combined. |
| Sector Futures | Holding of at least 500 net positions of Sector Futures in which the underlying is a business sector index in any one contract month, or all contract months combined. |
| SET50 Index Options | Holding of at least 2,500 net positions of SET50 Index Options in any Options series, or hold at least 2,500 net positions of Call Options, or Put Options, as the case may be. |
| Single Stock Futures | Holding of at least 2,500 net positions of Single Stock Futures in which the underlying is a common stock index in any one contract month, or all contract months combined. |
| Gold Futures | - Holding of at least 1,000 net positions of 50 Baht Gold Futures in any one contract month, or all contract months combined. - Holding of at least 1,000 net positions of 10 Baht Gold Futures in any one contract month, or all contract months combined. |
| Gold-D Futures | Holding of at least 500 net positions of Gold-D Futures in any one contract month, or all contract months combined. |
| 5 Year Government Bond Futures | Holding of at least 500 net positions of 5 Year Government Bond Futures in any one contract month, or all contract months combined. |
| 3 M BIBOR Futures | Holding of at least 500 net positions of 3 M BIBOR Futures in any one contract month, or all contract months combined. |
| Brent Crude Oil Futures | Holding of at least 1,000 net positions of Brent Crude Oil Futures in any one contract month, or all contract months combined. |
| USD Futures | Holding of at least 500 net positions of USD Futures in any one contract month, or all contract months combined. |
| Rubber Futures | - Holding of at least 500 net positions of RSS3 Futures in any one contract month, or all contract months combined. - Holding of at least 500 net positions of RSS3D Futures in any one contract month, or all contract months combined. |

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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 |
|---------------------------|-------------|--------------|--------------------|
| S50U14 (Sep 14) | 500 | 400 | <i>Long 100</i> |
| S50Z14 (Dec 14) | | 1,200 | <i>Short 1,200</i> |
| S50H15 (Mar 15) | | 1,400 | <i>Short 1,400</i> |
| Total All Months Combined | | | <i>Short 2,500</i> |

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

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(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 | | | |
| S50U14C1010 | 2,000 | | <i>Long 2,000</i> |
| S50Z14C1050 | | 500 | <i>Short 500</i> |
| Call Options: Total All Months Combined | | | <i>Long 1,500</i> |
| Put Options | | | |
| S50Z14C1000 | | 2,000 | <i>Short 2,000</i> |
| S50Z14C1010 | | 200 | <i>Short 200</i> |
| S50M15C1020 | 3,000 | | <i>Long 3,000</i> |
| Put Options: Total All Months Combined | | | <i>Long 800</i> |

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 2015 Put Options with a strike price of 1020 (S50M15P1020) 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), S50M15P1020 series are considered reportable. Thus, the member must report the positions of all 5 series of SET50 Index Options of its clients to TFX.

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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 | | | |
| S50U14 (Sep 14) | 500 | | <i>Long 500</i> |
| S50Z14 (Dec 14) | | 200 | <i>Short 200</i> |
| SET50 Index Futures: Total All Months Combined | | | <i>Long 300</i> |
| Call Options | | | |
| S50U14C1010 | 2,500 | | <i>Long 2,500</i> |
| S50Z14C1050 | | 1,500 | <i>Short 1,500</i> |
| Call Options: Total All Months Combined | | | <i>Long 1,500</i> |
| Put Options | | | |
| S50Z14P1000 | | 2,000 | <i>Short 2,000</i> |
| S50Z14P1010 | | 100 | <i>Short 100</i> |
| S50M15P1020 | 100 | | <i>Long 100</i> |
| Put Options: Total All Months Combined | | | <i>Short 2,000</i> |

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 (S50U11C1010) 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 2014 and December 2014 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.

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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. The products currently traded in TFEX are as follows:

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 |
| 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 $\pm 30\%$ 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: 1:45 pm – 2:15 pm Afternoon session: 2:15 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 7 THB/contract collected from both buyers and sellers |

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Contract Specification of Sector Futures

| Items | Details |
|----------------------------|---|
| Underlying Asset | Sector Index computed and disseminated by the Stock Exchange of Thailand. Currently, there are 5 Sector Futures as following: <ul style="list-style-type: none"> • Banking (BANK) • Information and Communication Technology (ICT) • Energy and Utilities (ENERG) • Food and beverage (FOOD) • Commerce (COMM) |
| Type of Contract | Futures |
| Symbol | BANK, ICT, ENERG, FOOD, COMM |
| Multiplier | THB 1,000 per index point for BANK and ICT futures THB 10 per index point for ENERG, FOOD, and COMM Futures |
| Settlement Month | Final month of each quarter which is March, June, September, December, up to 4 quarters |
| Price Quotation | Sector index price |
| Tick Size | 0.1 index point (or THB 100 / contract) for BANK and ICT futures 1 index point (or THB 10 / contract) for ENERG, FOOD, and COMM Futures |
| Daily Price Limit | Not over $\pm 30\%$ 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: 1:45 pm – 2:15 pm Afternoon session: 2:15 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 Sector Indices, rounded to the nearest two decimal points as determined by the exchange, and shall be the average value of the Sector Indices taken during last 15 minutes and the closing index value, after deleting the three highest and three lowest values. |
| Speculative Position Limit | Net 20,000 contracts in any sector futures contract on one side of the market in any contract month or all contract months combined. |

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| Large Position Report | From 500 net position in any sector futures contract 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 |

Contract Specification of SET50 Index Options

| Items | Details |
|----------------------------|---|
| Underlying Asset | SET50 Index which is compiled, computed and disseminated by the Stock Exchange of Thailand |
| Type of Contract | Options (Call and Put) |
| Symbol | S50C: Call Options S50P: Put Options |
| Multiplier | THB 200 / index point |
| Settlement Month | Three nearest consecutive months plus the final month of the next 3 quarters |
| Strike Price | Strike Price Interval is 25 points At the start of every trading day, there must be at least 1 at-the-money option 2 in-the-money options and 2 out-of-the-money options |
| 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 $\pm 30\%$ 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: 1:45 pm – 2:15 pm Afternoon session: 2:15 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. |

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|-----------------------|--|
| Large Position Report | From 2,500 net position in SET50 Index Options in any contract month or from 2,500 position in Call or Put Options |
| Settlement Method | Cash settlement |
| Exchange Fee | 5 THB/contract collected from both buyers and sellers |

Contract Specification of Single Stock Futures

| Items | Details |
|----------------------------|---|
| Underlying Asset | Listed securities in SET which meet TFEX listing criteria. List of underlying will be announced by TFEX. |
| Type of Contract | Futures |
| Contract Size | 1,000 shares* |
| Settlement Month | Final month of each quarter which is March, June, September, December, up to 4 quarters |
| Price Quotation | Baht per share |
| Tick Size | 0.1 index point (equivalent to THB 10 / contract) |
| Daily Price Limit | Not over $\pm 30\%$ 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: 1:45 pm – 2:15 pm Afternoon session: 2:15 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 volume weighted average value of the underlying share trading transaction during last 15 minutes and at the closing on the last trading day, rounded to the nearest two decimal points. |
| Speculative Position Limit | Net 20,000 positions in Single Stock Futures on any underlying stock in any contract month or all months combined or amount as announced by TFEX which will consider the underlying stock's liquidity, unless received permission from TFEX to hold excess positions. |
| Large Position Report | From 500 net position in Single Stock Futures on any underlying stock in any contract month or all months combined. |
| Settlement Method | Cash settlement |

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| Exchange Fee | Not over 10 THB/contract collected from both buyers and sellers |
|--------------|---|

Remark: * TFEX may adjust the contract size in the case the company of the underlying stock announces corporate action which affects the underlying stock

Contract Specification of Gold Futures

| Items | 10 Baht Gold Futures | 50 Baht Gold Futures |
|------------------------|--|--|
| Underlying Asset | Gold Bullion with a purity of 96.5% | |
| Type of Contract | Futures | |
| Symbol | GF10 | GF |
| Settlement Month | 3 nearest even month : February, April, June, August, October, December (in each period, there will be 3 nearest series to trade) | |
| Price Quotation | Baht per one baht-weight of gold | |
| Contract Size | 10 Thai Gold Baht (1 Thai Gold Baht = 15.244 grams) | 50 Thai Gold Baht (1 Thai Gold Baht = 15.244 grams) |
| Tick Size | THB 10 (or THB 100 per contract) | THB 10 (or THB 500 per contract) |
| Daily Price Limit | Initial price limit is $\pm 10\%$ from the latest settlement price. Should traded price reach the limit, trading will be halted for a certain period announced by TFEX. After trading resumes, the price limit will be expanded to $\pm 20\%$ of the latest settlement price. | |
| Trading Hours | Pre-open: 09:15 - 09:45 hrs. Morning session: 09:45 - 12:30 hrs. Pre-open: 13:45 - 14:15 hrs. Afternoon session: 14:15 - 16:55 hrs. Pre-open: 18:45 - 19:00 hrs. Night session: 19:00 - 23:55 hrs. | |
| Final Settlement Price | Use the London Gold AM Fixing price to reference for final settlement price calculation. The formula for its calculation is as follows: $= \text{London Gold AM Fixing} \times (15.244/31.1035) \times (0.965/0.995) \times (\text{THB/USD})$ Where: - London Gold AM Fixing is price per 1 troy ounce based on 99.5% gold purity in which the weight is 31.1035 grams - 1 Thai Gold Baht = 15.244 grams - 0.965 is used to adjust the gold purity to 96.5% | |

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| | The THB/USD is the exchange rate announced by TFEX which is the average of the exchange rates received from commercial banks. | |
| Speculative Position Limit | TFEX may announce the position limit as it deems appropriate. | |
| Large Position Report | From 1,000 net position in Gold Futures in any contract month all months combined | |
| Last Trading Day | The business day prior to the final business day of the contract month (Trading hours end at 4.30 pm.) | |
| Settlement Method | Cash settlement | |
| Exchange Fee | 7 THB/contract collected from both buyers and sellers | 35 THB/contract collected from both buyers and sellers |

Contract Specification of Gold-D Futures

| Items | Details |
|----------------------------|---|
| Underlying Asset | Gold Bullion with a purity of 99.99% |
| Type of Contract | Futures |
| Symbol | GD |
| Settlement Month | 1 nearest quarterly month (March, June, September, December) |
| Price Quotation | USD per Troy Ounce (one decimal) |
| Contract Size | 100 grams (3.2148 Troy Ounces) |
| Tick Size | USD 0.10 per Troy Ounce |
| Daily Price Limit | Initial price limit is $\pm 10\%$ from the latest settlement price. Should traded price reach the limit, trading will be halted for a certain period announced by TFEX. After trading resumes, the price limit will be expanded to $\pm 20\%$ of the latest settlement price. |
| Trading Hours | Pre-open: 09:15 - 09:45 hrs. Morning session: 09:45 - 12:30 hrs. Pre-open: 13:45 - 14:15 hrs. Afternoon session: 14:15 - 16:55 hrs. Pre-open: 18:45 - 19:00 hrs. Night session: 19:00 - 23:55 hrs. |
| Speculative Position Limit | Net 5,000 contracts on one side of the market in any contract month or all contract months combined |
| Large Position Report | From 500 net position in Gold-D Futures in any contract month or all months combined. |
| Last Trading Day | The business day prior to the final business day of the contract month (Trading hours end at 4.30 pm.) |
| Settlement Method | Physical Delivery |
| Delivery Lot | 10 contracts or equivalent to 1 kilogram of Gold |

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| Exchange Fee | Not over 5 THB/contract collected from both buyers and sellers |
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Contract Specification of 5 Year Government Bond Futures

| Items | Details |
|----------------------------|--|
| Underlying Asset | 5 Year Thai Government Bond with 5% coupon (semi-annual) Represent by the basket of eligible bonds |
| Type of Contract | Futures |
| Symbol | TGB5 |
| Settlement Month | 2 nearest quarterly months on a March, June, September, December cycle |
| Price Quotation | Baht per bond with 100 par value, with 2 decimal points |
| Tick Size | 0.1 index point (equivalent to THB 100 / contract) |
| Daily Price Limit | If there is trading over $\pm 2.5\%$ of the most recent daily settlement price, TFEX will halt the trade before resuming trade in which the daily price limit will be expanded to not over $\pm 5\%$ of the most recent daily settlement price |
| Trading Hours | Pre-open: 9:15 am – 9:45 am Morning session: 9:45 am – 12:30 pm Pre-open: 1:45 pm – 2:15 pm Afternoon session: 2:15 pm – 4:00 pm |
| Final Settlement Price | Price is set as price per Bond with par value of 100 baht (4 decimal points) based on the yield of basket of eligible bonds on the last trading day according to the details and methods of TFEX. The yield for each series of bonds will be according to the information received from commercial banks as determined by TFEX (4 decimal points). |
| Speculative Position Limit | Net 10,000 positions in 5 Year Government Bond Futures in any contract month or all months combined |
| Large Position Report | From 500 net positions in 5 Year Government Bond Futures in any contract month or all months combined. |
| Last Trading Day | The third Wednesday of the contract month (Trading hours end at 4.00 pm.) |
| Settlement Method | Cash settlement |
| Exchange Fee | Not over 10 THB/contract collected from both buyers and sellers |

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Contract Specification of 3M BIBOR Futures

| Items | Details |
|----------------------------|---|
| Underlying Asset | 3M BIBOR |
| Type of Contract | Futures |
| Symbol | BB3 |
| Settlement Month | March, June, September, December up to 2 quarters |
| Price Quotation | In terms of index 100.000 – Future interest rate of 3M BIBOR with 3 decimal points |
| Contract Size | Minimum of THB 10,000,000 |
| Tick Size | 0.005 (or THB 125 per contract) |
| Daily Price Limit | If there is trading over $\pm 1.25\%$ of the most recent daily settlement price, TFEX will halt the trade before resuming trade in which the daily price limit will be expanded to not over $\pm 2.5\%$ of the most recent daily settlement price |
| Trading Hours | Pre-open: 9:15 am – 9:45 am Morning session: 9:45 am – 12:30 pm Pre-open: 1:45 pm – 2:15 pm Afternoon session: 2:15 pm – 4:00 pm |
| Final Settlement Price | Calculated from 100 - 3M BIBOR In which 3M BIBOR rate is the rate announced at 11:00 hrs. by Bank of Thailand on the last trading day (4 decimal points). |
| Speculative Position Limit | Net 2,000 positions in 3M BIBOR Futures in any contract month or all months combined |
| Large Position Report | Net 500 positions in 3M BIBOR Futures in any contract month or all months combined |
| Last Trading Day | The business day prior to the final business day of the contract month (Trading hours end at 11.00 am.) |
| Settlement Method | Cash settlement |
| Exchange Fee | Not over 20 THB/contract collected from both buyers and sellers |

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Contract Specification of Baht/USD Futures

| Items | Details |
|----------------------------|--|
| Underlying Asset | US Dollar |
| Type of Contract | Futures |
| Symbol | USD |
| Settlement Month | 3 nearest consecutive months plus the next quarterly months (March, June, September, or December) |
| Price Quotation | The price is quoted in term of Baht per 1 US Dollar (with 2 decimal points) |
| Contract Size | 1,000 USD |
| Tick Size | Tick size is 0.01 Baht (10 Baht per contract) |
| Daily Price Limit | If there is trading over $\pm 2\%$ of the most recent daily settlement price, TFEX will halt the trade before resuming trade in which the daily price limit will be expanded to not over $\pm 4\%$ of the most recent daily settlement price |
| Trading Hours | Pre-open: 9:15 am – 9:45 am Morning session: 9:45 am – 12:30 pm Pre-open: 1:45 pm – 2:15 pm Afternoon session: 2:15 pm – 4:55 pm |
| Final Settlement Price | Calculated from the exchange rate announced by Thomson Reuters at 11:00 hrs (BKK time) on the last trading day (4 decimal points) |
| Speculative Position Limit | Net 10,000 contracts in any contract month or all contract months combined |
| Large Position Report | Net 500 contracts in any contract month or all contract months combined |
| Last Trading Day | The business day prior to the final business day of the contract month (Trading hours end at 11.00 am.) |
| Settlement Method | Cash settlement |
| Exchange Fee | Not over 2 THB/contract collected from both buyers and sellers |

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Contract Specification of Rubber Futures

| Items | RSS3 Futures | RSS3D Futures |
|----------------------------|---|-------------------|
| Underlying Asset | Natural Rubber Ribbed Smoke Sheet No. 3 according to the Green Book standard. The delivered goods must meet the standard and must be produce by the producer as specified by TFEX | |
| Type of Contract | Futures | |
| Settlement Month | 7 nearest consecutive months | |
| Contract Size | 5,000 Kilograms (5 tons) | |
| Delivery Size | 20,000 Kilograms (20 tons) | |
| Price Quotation | THB per 1 Kilo (2 decimal points) | |
| Tick Size | THB 0.05 (or THB 250 per contract) | |
| Daily Price Limit | If there is trading over $\pm 5\%$ of the most recent daily settlement price, TFEX will halt the trade before resuming trade in which the daily price limit will be expanded to not over $\pm 10\%$ of the most recent daily settlement price | |
| Trading Hours | Pre-open: 9:15 am – 9:45 am Open session: 2:15 pm – 4:55 pm | |
| Speculative Position Limit | 1,000 contracts for the nearest contract month 10,000 contracts for all other contracts month combined | |
| Large Position Report | Net 500 contracts in any contract month or all contract months combined | |
| Last Trading Day | The business day prior to the final business day of the contract month (Trading hours end at 4.55 pm.) | |
| Settlement Method | Physical delivery or Cash settlement in case physical delivery cannot be done | Physical delivery |
| Delivery Method | 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. <ul style="list-style-type: none"> 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. | |
| Exchange Fee | Not over 40 THB/contract collected from both buyers and sellers | |

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