

# Shanghai Futures Exchange

## Options Trading Guidance

### Introduction and Disclaimer

This *Options Trading Guidance* is created to regulate options trading activities, protect options market participants, maintain an orderly market, and promote market functioning.

Normative references include:

*Options Trading Rules of the Shanghai Futures Exchange;*  
*Overseas Special Participants Management Rules of the Shanghai Futures Exchange;*  
*Futures Trading Participant Eligibility Management Rules of the Shanghai Futures Exchange;*  
*Risk Management Rules of the Shanghai Futures Exchange;*  
*Administration of Abnormal Trading Behaviors Rules of the Shanghai Futures Exchange;* and  
*Administration of Accounts Involving Actual Control Relationship Rules of Shanghai Futures Exchange.*

This *Options Trading Guidance* mainly applies to the options trading activities at the Shanghai Futures Exchange (**SHFE** or the “**Exchange**”) and functions as reference materials for SHFE’s Members (i.e., Futures Firm Members and Non-Futures Firm Members), Overseas Special Participants (i.e., Overseas Special Brokerage Participants and Overseas Special Non-Brokerage Participants), Overseas Intermediaries, and Clients when trading options. SHFE will update and revise this *Options Trading Guidance* based on market developments and changes to its options trading rules.

### Chapter I Market Entry Requirements and Procedures

Members, Overseas Special Participants (“**OSPs**”), and Overseas Intermediaries should establish in-house rules on options brokerage, trading, clearing and settlement, and risk management in line with the options rules of SHFE. They should be fully prepared in terms of IT systems, options-related rules, risk management, and staffing before engaging in options trading.

A Client should fully assess his knowledge about the market and products, risk control and tolerance, and financial position in accordance with the eligibility rules, and prudently decide whether to engage in options trading.

#### I. Futures Firm Members, Overseas Special Brokerage Participants, and Overseas Intermediaries

Futures Firm Members (“**FF Members**”) and Overseas Special Brokerage Participants (“**OSBPs**”) should establish sound internal rules on options trading and risk management

frameworks and procedures that cover brokerage business, trading, clearing and settlement, risk control, client eligibility assessment, and investor education. They should also develop contingency plans to anticipate any options trading emergencies and ensure smooth operations.

## 1. Internal rules

Required internal rules and procedures include but are not limited to:

- (1) Options brokerage business management rules;
- (2) Options clearing and settlement rules;
- (3) Options risk management rules;
- (4) Futures trading participant eligibility rules; and
- (5) Options brokerage contracts and risk disclosure statements.

## 2. Risk management procedures

FF Members and OSBPs must strictly follow risk management procedures when offering options brokerage services. Such procedures include but are not limited to:

- (1) Risk management procedures in relation to Client capital;
- (2) Risk management procedures in relation to Clients' exercise or fulfillment of options;
- (3) Large trader position reporting procedures; and
- (4) Forced liquidation procedures.

## 3. IT system

- (1) The brokerage trading system should support the following features: Client trading privilege management, options trading and exercise and fulfillment of option contracts, day-end clearing and settlement, and risk control, among others;
- (2) Appropriate communication and market data links should be established and configured;
- (3) Meeting other options-related system preparedness requirements set by SHFE; and
- (4) Meeting other system preparedness requirements set by SHFE.

Overseas Intermediaries should, in reference to the brokerage service requirements for FF Members and OSBPs, establish sound internal rules and risk management procedures, and make the necessary IT preparations to ensure smooth operations.

## **II. Non-FF Members and Overseas Special Non-Brokerage Participants**

### **1. Rules and procedures**

Non-FF Members and Overseas Special Non-Brokerage Participants (“**OSNBPs**”) should establish sound internal controls, risk management rules, and other systems for the management of options trading, including but not limited to rules and procedures for options trading decision-making, order submission, and risk management to ensure smooth operations.

### **2. IT system**

- (1) Appropriate communication and market data links should be established and configured;
- (2) Meeting other options-related system requirements set by SHFE; and
- (3) Meeting other system preparedness requirements set by SHFE.

## **III. Clients**

SHFE enforces eligibility rules for options trading.

When applying for options trading code or trading access, a Client should meet eligibility criteria regarding basic knowledge of futures trading, trading experience, simulated trading experience, available funds, creditworthiness and integrity, and risk tolerance.

## **IV. Market Access Application**

FF-Members and OSBPs intending to access the options market need to submit an application to SHFE. Access will be granted if they have made the necessary preparations and passed the IT system tests organized by SHFE. Non-FF Members and OSNBPs that have made the necessary preparations may apply to SHFE for options trading access. Clients meeting the eligibility criteria may apply for options trading access through their carrying FF Members, OSBPs, Overseas Intermediaries, or other account-opening institutions.

# **Chapter II Trading Options**

## **I. Trading Orders**

For option contracts, SHFE supports limit orders, cancellation requests, and other types of orders as it determines from time to time. A limit order may be given the additional attribute of fill-or-kill (FOK) or fill-and-kill (FAK) orders.

## **II. Initial and Subsequent Listing of Contracts**

### **1. Initial listing**

Option contracts for a new month are listed at the time given in the contract specifications.

As of the date of this *Options Trading Guidance*, product rules state that SHFE will list option contracts of “the nearest two consecutive months and, when the open interest of the underlying futures contract, after daily clearing, has reached a specific threshold to be separately announced by SHFE, for later months on the second trading day thereafter.”

See SHFE’s circulars for the specific open interest threshold of the corresponding futures products.

## 2. Subsequent listings

After an option contract is listed for trading, SHFE will, on each trading day, list contracts for the same expiration month but of updated strike prices determined based on the strike price interval (see contract specifications), until market close on the trading day before the expiration date.

Listed option contracts can be traded until they are delisted. Newly listed option contracts and their listing benchmark prices can be viewed on SHFE’s official website and in the Member Service System. The settlement data package contains a list of option parameters, which include the contracts to be listed on the following trading day and their listing benchmark prices.

## **III. Trading Hours**

Option contracts share the same trading hours with their underlying futures contracts, i.e., 9:00–11:30 a.m., 1:30–3:00 p.m., and other hours announced by SHFE.

## **IV. Request for Quote**

Non-FF Members, OSNBPs, and Clients may request for quote (“RFQ”) on option contracts under the following conditions:

1. RFQ is available to option contracts of all months;
2. RFQ should indicate the contract symbol; buy/sell direction and number of lots are not needed;
3. There should be a minimum 60-second interval between two RFQs for the same option contract;
4. No RFQ is accepted during the central auction session for option contracts;
5. No RFQ is accepted for an option contract when it has reached the price limit;
6. No RFQ is accepted for an option contract when the best bid-ask spread is less than or equal to the maximum bid-ask spread specified by SHFE. The maximum bid-ask spread is given through circulars posted on SHFE’s website.

FF Members, OSBPs, and Overseas Intermediaries should effectively manage their Clients by refusing excessively frequent RFQs or RFQs when there are rational quotes in the market.

## **Chapter III Exercising Options**

### **I. Options Exercise and Fulfillment at SHFE**

#### **1. Time limit for the submission of exercise requests**

A buyer of a European-style option may, before 3:30 p.m. on the expiration date, submit a request to exercise or abandon the option through the client software, Member Service System, or Overseas Intermediary Service System.

A buyer of an American-style option may submit a request to exercise the option during trading hours on any trading day before the expiration date, or a request to exercise or abandon the option before 3:30 p.m. on the expiration date. Such requests can be submitted through client software, Member Service System, or Overseas Intermediary Service System.

#### **2. Results of exercise and fulfillment**

Following the exercise and fulfillment of obligations under a call (put) option, the buyer will hold a long (short) position in the underlying futures contract at the strike price and the seller will hold a short (long) position in the underlying futures contract at the same strike price. These positions will be counted toward the open interest of the futures contract.

The exercise of an option held for general or hedging purposes will establish a corresponding general or hedging futures position.

#### **3. Exercise check**

Upon receiving an exercise request, the SHFE system will not make a front-end check of the corresponding funds or futures position limit. Upon receiving an exercise or abandonment request (in the form of an instruction) from client software, the SHFE system will check its validity and freeze the corresponding option positions. SHFE does not perform such checks or freezing operations for exercise or abandonment requests submitted through the Member Service System or Overseas Intermediary Service System.

#### **4. Automatic exercise**

Before time of clearing on the expiration date, SHFE will automatically exercise options that are in-the-money as determined by the settlement price of the underlying futures contract, and automatically abandon all other options, even if no exercise or abandonment request has been submitted within the specified time limit.

## 5. Assignment

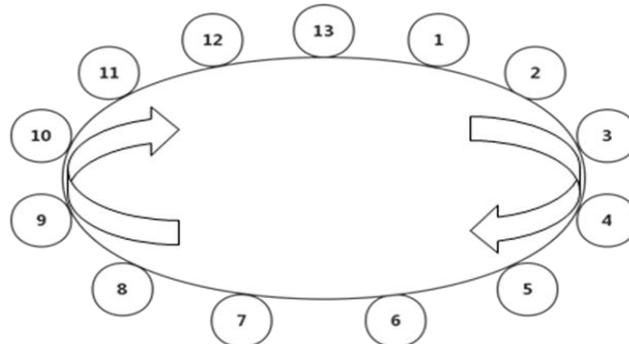
Upon the closing of the submission window for exercise requests, the SHFE system will randomly assign the requests to sellers based on the buyers' exercise and abandonment instructions and the result of automatic exercise. The specific assignment algorithm is as follows:

- (1) Forming an initial ordered sequence of seller positions based on the Client ID code;
- (2) Determining a random starting point, which is one plus the remainder of the (single-counted) options trading volume divided by the size of the short option position;
- (3) From the starting point, excluding seller positions at every  $y$  internal ("exclusion interval"), until a total of  $x$  number of seller positions are excluded, where  $x$  is the remainder of the size of short option positions divided by the exercise request quantity and  $y$  is the quotient of the size of short option positions divided by  $x$ ;
- (4) Because the original starting point will be excluded in the step above as part of  $x$ , the position next in the sequence will be used as the new starting point. For purposes of assignment, the SHFE system will evenly select short positions among this remaining sequence according to the selection interval number, which is the quotient of the size of remaining short option positions divided by the exercise request quantity.

For example, if the trading volume is 27 lots, short positions are 13 lots, and exercise requests amount to 5 lots, then SHFE would select 5 out of 13 lots for assignment.

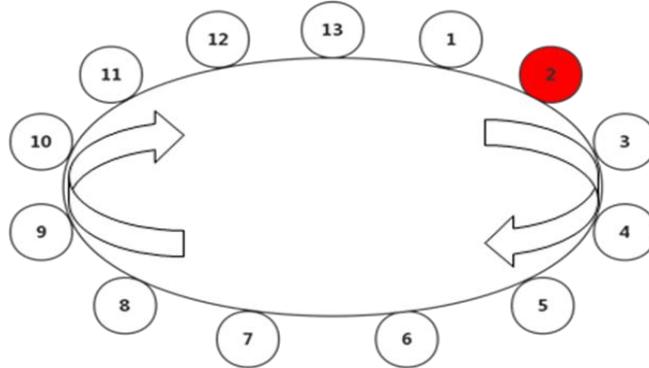
Step 1: Arranging the short positions in ascending order of Client ID number (Figure 1).

Figure 1: Sequence formed after arranging short positions by ascending Client ID number



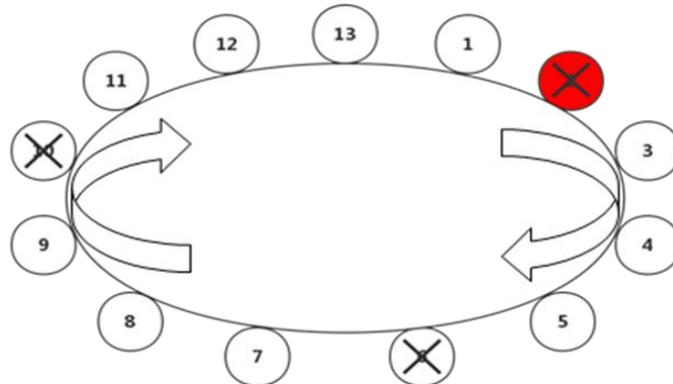
Step 2: Because  $27 \div 13 = 2 \text{ R } 1$  (remainder of 1), the starting point is  $1 + 1 = 2$  and the end point is 1 (Figure 2).

Figure 2: Determination of the starting and end points



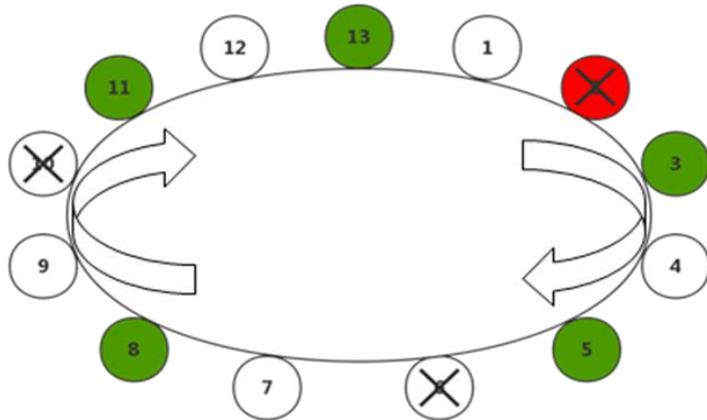
Step 3: Because  $13 \div 5 = 2 \text{ R } 3$  and  $13 \div 3 = 4 \text{ R } 1$ , 3 lots of short option positions will be excluded, at the frequency of one for every 4 lots (the exclusion interval), beginning from the starting point. The remaining sequence is shown in Figure 3.

Figure 3: The sequence formed after excluding the excess positions



Step 4: Because the original starting point (2) has been excluded, 3 will be the new starting point. Starting from this new starting point, SHFE selects 5 lots for assignment at an even spacing of one for every  $10 \div 5 = 2$  lots (the selection interval). The resulting assignment is shown in figure 4.

Figure 4: Results of exercise matching



## 6. Netting of open option positions

A Non-FF Member, OSNBP, or Client may request for the netting of its long and short positions in the same option contract held under the same trading code. The positions thusly offset are deducted from the day's open interest for that option contract and added to the contract's trading volume. Request for netting should be submitted during the following hours:

- (1) European-style option: before 3:30 p.m. of the expiration date;
- (2) American-style option: during the trading hours on any trading day before the expiration day; and before 3:30 p.m. on the expiration date.

Before daily clearing, the SHFE system automatically nets the long and short positions in the same option contract held under the same dedicated market-making trading code. A market maker can request for the partial or complete exclusion of its positions from this automatic netting process.

## 7. Netting of futures positions created by exercise (fulfillment) of options

An option buyer (seller) may request for the netting of its long and short futures positions obtained upon the exercise (or fulfillment) of options under the same trading code, or the netting of such futures positions against its existing futures positions to the extent of the former. The positions thusly offset are deducted from the day's open interest for that futures contract and added to the contract's trading volume. Request for netting should be submitted during the following hours:

- (1) European-style option: before 3:30 p.m. on the expiration date;
- (2) American-style option: during the trading hours on any trading day before the expiration day; and before 3:30 p.m. on the expiration date;

## **II. Options Exercise and Fulfillment by FF Members, OSBPs and Overseas Intermediaries**

## 1. Front-end check and validation of exercise requests

When an exercise request is submitted, the option buyer should have sufficient amount of available funds to meet the margin requirements for the resulting futures positions, and its carrying FF Member, OSBP, or Overseas Intermediary should freeze a corresponding amount of funds and positions. FF Members, OSBPs, and Overseas Intermediaries should not accept the exercise request of an option buyer who has insufficient funds.

Upon the cancellation of an exercise request, the FF Member, OSBP, or Overseas Intermediary should unfreeze the corresponding amount of funds and positions.

An FF Member, OSBP, or Overseas Intermediary should monitor whether a Client would exceed the position limit on the underlying futures contract upon exercising an option. If such a scenario is likely, the FF Member, OSBP, or Overseas Intermediary should remind the Client to close out its futures or option positions as early as possible, or risk forced position liquidation.

## 2. Estimation of funds needed for exercise

An FF Member, OSBP, or Overseas Intermediary should, after daily clearing on the trading day prior to the expiration date and before 3:30 p.m. on the expiration date, calculate the amount of funds Clients would need to exercise their options and inform those with insufficient funds, especially those with a significant shortfall, to prepare additional funds, cancel their exercise requests, or request to abandon the options or close their positions. The goal is to avoid the situation where Clients have to abandon options en masse because of insufficient funds.

For Clients who have failed on numerous occasions to prepare sufficient funds for options exercise, their carrying FF Member, OSBP or Overseas Intermediary should urge such Clients to improve the awareness of risk management. FF Members, OSBPs and Overseas Intermediaries should duly estimate the amount of funds needed for each type of transaction and have sufficient funds in their clearing accounts at SHFE. SHFE's Clearing Department will, based on the estimation on how much funds are needed to exercise options ("exercise funds estimation"), notify the FF Member or OSBP with insufficient funds to make additional and timely deposits. Likewise, based on exercise funds estimations, the FF Member or OSBP for an Overseas Intermediary with insufficient funds should notify it to make additional deposits in time.

## 3. Cancellation of exercise requests

An FF Member, OSBP or Overseas Intermediary should sign an agreement with its Clients regarding the standard related to exercise funds estimation and the rights and obligations of each party.

If a Client does not have sufficient funds for the exercise, the FF Member, OSBP or Overseas Intermediary should, in accordance with its agreement with the Client and the rules of SHFE, cancel the Client's exercise requests on its behalf.

FF Members, OSBPs, and Overseas Intermediaries should properly retain the data related to the cancellation of exercise requests on the expiration dates, both for future examinations and as evidence in potential legal disputes.

#### 4. Exercise or abandonment requests submitted through the Member Service System or Overseas Intermediary Service System on behalf of Clients

The Member Service System and the Overseas Intermediary Service System will be provided as backup channels for submitting exercise and abandonment requests on behalf of Clients. The former system is available to FF Members and OSBPs; the latter is available to Overseas Intermediaries.

Before using either channel to submit exercise or abandonment request on behalf of a Client, the FF Member, OSBP, or Overseas Intermediary should check the Client's fund balance and position holding, so as to avoid submitting a request when there is a fund or position shortfall. SHFE recommends FF Members, OSBPs, and Overseas Intermediaries to treat these two channels as emergency options to be used under special circumstances.

#### 5. Reminders on the expiration of options

Starting from the third trading day before the expiration of an option contract, an FF Member, OSBP, or Overseas Intermediary should remind its Clients to properly manage their positions in the contract. These reminders can be sent through the client software, text messages, or settlement statements.

#### 6. Reminders on exercise or abandonment on the expiration date

SHFE performs automatic exercise and abandonment of an option contract at the time of clearing on its expiration date. Therefore, FF Members, OSBPs, and Overseas Intermediaries should remind their Clients that they do not need to submit exercise requests for in-the-money ("ITM") options or abandonment requests for out-of-the-money ("OTM") options (relative to the settlement price), so as to avoid unnecessary actions and to save time.

FF Members, OSBPs, and Overseas Intermediaries should remind their Clients of the situations where exercise and abandonment requests should be submitted. Where the settlement price of the underlying futures contract deviates significantly from its closing price on the option's expiration date, Clients can submit exercise or abandonment requests as necessary if they wish to handle the expiring options differently from how SHFE's automated processes would handle them. FF Members, OSBPs, and Overseas Intermediaries should offer appropriate training and instructions in this regard.

FF Members, OSBPs, and Overseas Intermediaries are recommended to improve their system functionalities so that their systems can reject invalid exercise and abandonment requests. They can also improve system features and agree with their Clients beforehand on how exercise requests for OTM options and abandonment

requests for ITM options are to be handled, such that these situations are automated on their ends (i.e., without further Client input) for greater efficiency.

### **III. Time, Manner, and Order of Exercise**

#### **1. Non-expiration date**

For a European-style option, buyers may not submit either exercise or abandonment requests before the expiration day. For an American-style option, buyers may submit exercise requests during trading hours on trading days before the expiration day, but not abandonment requests.

#### **2. Expiration date**

On the expiration date of a European-style or American-style option, buyers may submit either exercise or abandonment requests through their client software during trading hours and between market close and 3:30 p.m.

Overseas Intermediaries may submit these requests through the Overseas Intermediary Service System to be automatically forwarded to the Member Service System. FF Members and OSBPs may submit these requests (including as batch requests) directly through the Member Service System.

#### **3. Order of exercise**

At the time of clearing, SHFE will handle buyers' exercise requests in the following order:

	Non-expiration date (American-style)	Expiration date (European- or American-style)
Step 1	Process exercise requests submitted as instructions from client software in reverse order of submission.	Process exercise and abandonment requests submitted as instructions from client software in reverse order of submission.
Step 2	Process exercise requests (including batch requests) submitted through the Member Service System in reverse order of submission. If the cumulative requested quantity exceeds the Client's actual positions, requests will be valid to the extent of the Client's actual positions and be processed in the foregoing order.	Process exercise and abandonment requests (including batch requests) submitted through the Member Service System in reverse order of submission. If the cumulative requested quantity exceeds the Client's actual positions, requests will be valid to the extent of the Client's actual positions and be processed in the foregoing order.
Step 3	-	Automatically exercise or abandon the remaining options.

Take the exercise of a gold option on its expiration date as an example:

Assuming the settlement price and closing price of the underlying futures contract AU2008 is RMB 283 per gram and RMB 285 per gram, respectively, and the Client's option position is as follows:

Option Contract	Contracts Held
AU2008C284	10
AU2008P284	10

For its AU2008C284 position, the Client has submitted the following requests through the client software:

Order of Submission	Option Contract	Requested Quantity	Action	Method
1	AU2008C284	2	Abandon	Instruction
2	AU2008C284	3	Exercise	Instruction

... and the following requests through the Member Service System (MSS):

Order of Submission	Option Contract	Requested Quantity	Action	Method
1	AU2008C284	7	Exercise	MSS
2	AU2008C284	4	Abandon	MSS

In this case, the SHFE system will process these requests in the following order: 3 lots of exercise request via instruction, 2 lots of abandonment request via instruction, 4 lots of abandonment request via MSS, and 7 lots of exercise request via MSS (As there is only 1 lot left, 1 lot is actually exercised). Automatic abandonment by the SHFE system is not necessary because all positions in AU2008C284 are closed after this step.

For its AU2008P284 position, the Client has submitted the following requests through the trading system:

Order of Submission	Option Contract	Requested Quantity	Action	Method
1	AU2008P284	1	Abandon	Instruction
2	AU2008P284	4	Exercise	Instruction

... and the following requests through the Member Service System:

Order of Submission	Option Contract	Requested Quantity	Action	Method
1	AU2008P284	2	Exercise	MSS
2	AU2008P284	1	Exercise	MSS

In this case, the SHFE system will process these requests in the following order: 4 lots of exercise request via instruction, 1 lot of abandonment request via instruction, and 1 lot and then 2 lots of exercise request via MSS. Because at this point the Client is still

long 2 lots on AU2008P284 which is ITM relative to the settlement price, the SHFE system will automatically exercise these 2 remaining lots at the time of clearing.

#### **IV. Things to Note**

##### **1. Difference between “close intraday” and “close yesterday” in exercise requests**

SHFE freezes Client positions according to the quantity indicated in each exercise request. When submitting an exercise request, the Client should enter the exercise quantity and choose between “close intraday” and “close yesterday.” These two choices are mutually exclusive. If the quantity indicated in a request exceeds the Client’s outstanding positions, the request is deemed invalid.

##### **2. Exercise requests for a significant number of OTM options**

FF Members, OSBPs, and Overseas Intermediaries should pay particular attention to Clients who request to exercise a large number of OTM options, understand their purpose and intentions and alert them to the risks.

##### **3. Unfilled close-out orders on the expiration date**

If a Client has not canceled its close-out order for an expiring option by market close, the Client, its FF Member, OSBP, or Overseas Intermediary will not be able to submit an exercise or abandonment request through the client software for the corresponding option positions before 3:30 p.m. In this case, the FF Member or OSBP may use the Member Service System (or, for an Overseas Intermediary, the Overseas Intermediary Service System) as the alternative way for submitting these requests on the Client’s behalf.

##### **4. Suspension of trading**

An option contract is suspended from trading if the underlying futures contract is suspended from trading. If an option contract is suspended from trading for the whole last trading day, its original last trading day and expiration date are postponed to the next trading day. If this happens, FF Members, OSBPs, and Overseas Intermediaries should promptly notify their Clients.

##### **5. Insufficient funds and breach of position limit after options exercise**

If an FF Member, OSBP, or Overseas Intermediary has insufficient funds or a Client exceeds the position limit as a result of exercising options, applicable rules on forced liquidation will apply.

##### **6. Exercise quantity requested through MSS exceeds open positions**

Since requests submitted from the Member Service System are not pre-validated and do not trigger a freeze on open positions, it is possible that the exercise quantity requested actually exceeds the size of open positions. During clearing, SHFE will

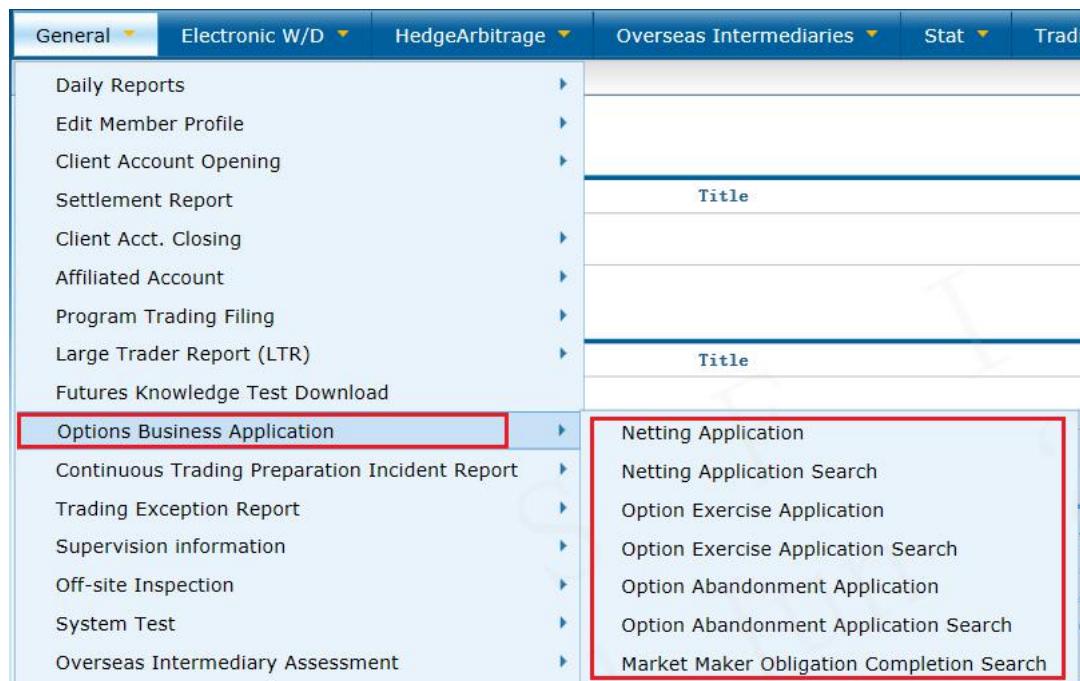
process all requests submitted from the Member Service System in reverse order of submission, until available positions are exhausted.

## V. Member Service System User Interface

### 1. MSS home page

From the Member Service System's home page (shown below), navigate to "General" → "Option Business Application," which contain seven menu functions. The three main functions are "Netting Application (i.e., netting request)", "Option Exercise Application (i.e., exercise request)," and "Option Abandonment Request."

Home page of SHFE's Member Service System



### 2. Netting application

A screenshot of the "Netting Application" page is shown below. This menu item offers two major functions, "Import Single Request" and "Batch Upload."

- (1) Click "Add" to enter a single netting request. For Non-FF Members, OSNBPs, and Clients, netting service consists of "options netting" and "futures netting" (only applicable to the futures positions established by fulfilling options); for market makers, it consists of "futures netting" (only applicable to the futures positions established by fulfilling options) and "hold-open positions". The menu item for netting of futures positions established by exercising options is found in the "Option Exercise Application" page.
- (2) Click "Batch Upload" to upload a set of netting requests in one go. This function requires the upload of a CSV format file, a template for which can be downloaded from the same "Batch Upload" window.

- (3) Click “Export” to export the netting requests to an Excel file.
- (4) Netting requests are only valid for the day of submission.

Interface for the “Netting Application” menu item

### 3. Option exercise application

A screenshot of the “Option Exercise Application” page is shown below. This menu item offers two major functions, “Import Single Request” and “Batch Upload.”

- (1) Click “Add” to enter a single exercise request. Users need to provide the following information: client ID, product symbol, contract code, hedging flag, position direction, quantity, and whether to automatically net the futures positions established by the exercise.
- (2) Click “Batch Upload” to upload a set of exercise requests in one go. This function requires the upload of a CSV format file, a template for which can be downloaded from the same “Batch Upload” window.
- (3) Click “Export” to export the exercise requests to an Excel file.
- (4) Exercise requests are only valid for the day of submission.

Interface for the “Option Exercise Application” menu item

#### 4. Option abandonment application

A screenshot of the “Option Abandonment Application” page is shown below. This menu item offers two major functions, “Import Single Request” and “Batch Upload.”

- (1) Click “Add” to enter a single abandonment request. Users need to provide the following information: client ID, product symbol, contract code, hedging flag, position direction, quantity.
- (2) Click “Batch Upload” to upload a set of abandonment requests in one go. This function requires the upload of a CSV format file, a template for which can be downloaded from the same “Batch Upload” window.
- (3) Click “Export” to export the abandonment requests to an Excel file.
- (4) Abandonment requests are only valid for the day of submission.

Interface for the “Option Abandonment Application” menu item

## Chapter IV Clearing

### I. Premiums

The option premium must be paid with cash rather than the funds balance derived from collateralized marketable securities.

When an option buyer (seller) establishes a position, it pays (receives) a premium equaling the amount needed to establish that position; when an option buyer (seller) closes a position, it receives (pays) a premium equaling the amount needed to close that position. The premium is calculated as follows:

Premium paid (received) by the option buyer (seller) for opening a position =  $\Sigma$  buy (sell) price  $\times$  number of option contract bought (sold)  $\times$  contract size of the underlying futures contract

Premium received (paid) by the option buyer (seller) for closing a position =  $\Sigma$  sell (buy) price  $\times$  number of option contract sold (bought)  $\times$  contract size of the underlying futures contract

### II. Fees

Fees for options trading at SHFE are transaction fees, intraday position close-out fees, exercise (fulfillment) fees, pre-exercise netting fees, and post-exercise netting fees. Please visit the SHFE website for the latest fee rates.

SHFE may adjust the fee rates based on market conditions and disclose to the public accordingly.

### **III. Clearing Deposit**

Current-day (CD) clearing deposit balance = preceding-day (PD) clearing deposit balance + (PD trading margin – CD trading margin) + (CD actual available value of margin collaterals – PD actual available value of margin collaterals) + CD profit or loss + (CD option premiums received – CD option premiums paid) + (funds deposits – funds withdrawals) – transaction fees and other expenses.

### **IV. Settlement Price**

#### **1. Settlement price on any trading day other than the last trading day**

On trading days other than the last trading day, current-day settlement price for European-style options is calculated using the Black-Scholes pricing model; that for American-style options is calculated using the binomial option pricing model. The risk-free interest rate is taken to be the benchmark rate for one-year term deposit. SHFE reserves the right to adjust an abnormal settlement price. The volatility used by the theoretical pricing models is determined as follows:

- (1) If trades are executed in option contracts of a particular expiration month, SHFE will first calculate the implied volatility of each contract of that month that has at least one trade based on the trading-volume-weighted average current-day transaction price (the price of the underlying futures contract is taken to be its current-day settlement price), then calculate the implied volatility of all contracts of that month as the average of implied volatility of each of the contracts in the previous step weighted by the contract's trading volume.
- (2) If no trade is executed in all option contracts of a particular month, their implied volatility is:
  - (i) the implied volatility of the contracts of the earlier of the two nearest adjacent months, if there is trading on contracts of those two months;
  - (ii) the implied volatility of the contracts of the nearest adjacent month that have executed transactions, if only contracts of one of the two nearest adjacent months have executed transactions;
  - (iii) the implied volatility of the contracts of the earlier of the two next-nearest adjacent months or of the next-nearest adjacent month, as determined in the foregoing manner, if contracts of both of the two nearest adjacent months have not executed any transaction; repeated until the implied volatility can be determined thusly;
  - (iv) the preceding trading day's implied volatility of the contracts, if none of the above conditions is met.

Take gold options as an example. Assuming options are listed for underlying futures contracts AU2101, AU2102, AU2103, AU2104, AU2106, AU2108, AU2110, and

AU2112, then the volatility of the option contract on AU2108 is determined as follows:

Scenario 1: Trade is executed in option contracts on AU2108 on the current day.

If only AU2108C280, AU2108C284, and AU2108P288 are traded on the current day, first calculate their respective implied volatility  $\sigma_1$ ,  $\sigma_2$ , and  $\sigma_3$ , then calculate their average implied volatility  $\sigma$  weighted by the trading volume of the corresponding option contract. This  $\sigma$  will be the implied volatility of the AU2108 option series.

Scenario 2: No option contracts on AU2108 are traded on current day.

If trade is executed in the AU2106 series or AU2110 series (but not both), the implied volatility of the AU2108 series will be that of whichever series that has been traded. If trade is executed in both AU2106 and AU2110 series, the implied volatility of the AU2108 series will be that of the AU2106 series. If both the AU2106 and AU2110 series see zero trade, the implied volatility of the AU2108 series will be determined by the AU2104 and AU2112 series by the same method, and so on.

Scenario 3: No trade is executed in all series on the current day.

The implied volatility of the option contracts on AU2108 will be that for the AU2108 series on the preceding trading day.

## 2. Settlement price on the last trading day

Settlement price of call options = Max (settlement price of underlying futures contract – strike price, minimum price fluctuation);

Settlement price of put options = Max (strike price – settlement price of underlying futures contract, minimum price fluctuation).

## **V. Settlement Risk Management**

FF Members, OSBPs, and Overseas Intermediaries should offer effective investor education programs, fully disclose the risks of options trading, streamline transaction and service procedures, appoint dedicated staff members to manage settlement and exercise risks, and improve their IT systems.

### 1. Irrational behaviors

Exposure: Clients may go long on deep OTM options that are approaching the expiration date or request for exercising such options.

Recommendation: Offer investor education programs, disclose risks, and warn Clients of the potential risks.

## 2. Funds-related risks

### (1) Substantial change in premium

Exposure: Because option pricing is affected by a multitude of factors including the price of the underlying, volatility, time to expiration, and interest rate, there may be rapid and significant changes in the option premium and changes in the margin level.

Recommendation: Enhance the risk control system and pay attention to Client accounts that need enhanced monitoring.

### (2) Increasing margin rate

Exposure: Margin rate may be raised for holidays or in the event of a Limit-Locked Market.

Recommendation: Incorporate margin rate change in risk estimation.

### (3) Divergence of settlement price and closing price

Exposure: Theoretical pricing models are used to calculate the settlement price of options and option contracts of the same expiration month use the same volatility value.

Recommendation: Strength pre-trade risk management and prudently manage fund withdrawals by Clients.

## 3. Liquidity risks

Exposure: Since liquidity is spread across a large number of option contracts, some contracts may have poor liquidity.

Recommendation: Prepare a liquidity contingency plan and beware of the forced liquidation procedures.

## 4. Client options exercise (fulfillment) risks

### (1) Operating risks during exercise and netting

Exposure: In the Member Service System, netting of options, netting of futures positions established by exercising or fulfilling options, exercise requests, and abandonment requests share the same interface page, so caution is required to prevent misclick.

Recommendation: Streamline options exercise and netting procedures and improve system automation.

### (2) Risk of higher trading margin requirements after option exercise (fulfillment)

Exposure: Exercising or fulfilling options may increase margin requirements.

Recommendation: Risk estimation should fully consider the additional margin requirements from options exercise and fulfillment and the potential losses from the exercise, as well as such events as a significantly different current-day settlement price compared with the settlement price of the previous trading day or increases in margin rate.

(3) Risk from exercising OTM options

Exposure: Exercising OTM options may incur losses.

Recommendation: Properly disclose and warn Clients of the risks.

(4) Risks on the expiration date

Exposure: The results of automatic exercise may differ from expectation (because determination of ITM and OTM hinges on the settlement price, for example); failing to meet margin calls may incur losses.

Recommendation: Remind Clients when their contracts are nearing expiration and improve the estimation of exercise risks.

## VI. Miscellaneous

One can find options-related data such as trade orders, executed orders, contract settlement parameters, and non-trading position changes through the Member Service System.

# Chapter V Risk Control

## I. Options Risk Management

### 1. Trading margin

- (1) Option buyers do not need to pay trading margins.
- (2) Option sellers need to pay trading margins. The amount is collected at the higher of the following two values:
  - (i) Settlement price of the option contract  $\times$  contract size of underlying futures contract + trading margin for the underlying futures contract  $- (1/2) \times$  OTM amount of the option contract; or
  - (ii) Settlement price of the option contract  $\times$  contract size of underlying futures contract  $+ (1/2) \times$  trading margin for the underlying futures contract.
- (3) The OTM amount of an option is calculated as follows:

For a call option:  $\text{Max}(\text{strike price} - \text{settlement price of underlying futures contract}, 0) \times \text{contract size of underlying futures contract};$

For a put option:  $\text{Max}(\text{settlement price of underlying futures contract} - \text{strike price}, 0) \times \text{contract size of underlying futures contract}.$

- (4) SHFE may apply different trading margin rates for different combinations of option positions.

## 2. Price limit

- (1) An option contract is subject to the same price limit as the underlying futures contract (underlying's settlement price of the previous trading day  $\times$  corresponding price limit rate).
- (2) Upper limit price = option contract's settlement price of the previous trading day + (futures contract's settlement price of the previous trading day  $\times$  futures contract's upper limit rate);

Lower limit price =  $\text{Max}(\text{option contract's settlement price of the previous trading day} - \text{futures contract's settlement price of the previous trading day} \times \text{futures contract's lower limit rate}, \text{option contract's minimum price fluctuation}).$

- (3) Where an option contract's settlement price of the previous trading day is equal to or less than the current day's price limit, i.e., the lower limit price is the minimum price fluctuation, if, in the five minutes before the close of a trading day, there are only asks at the lower limit price but no bids at the lower limit price, or if during such time any bid is instantly filled without deflecting the price away from the lower limit price, then SHFE will *not* treat the situation as a Limit-Locked Market.

## 3. Position limit

- (1) Position limits for futures and options are separate.
- (2) Position limit for an option contract varies across the different periods of trading within its lifecycle. These time periods coincide with those for the underlying futures contract.
- (3) Option position with respect to any particular underlying asset is calculated as:
  - Long calls + short puts in that underlying;
  - Short calls + long puts in that underlying.
- (4) The prevailing position limits are determined and announced by SHFE (see SHFE circulars).

## 4. Large trader position reporting

The large trader position reporting regime for options is similar to that for futures. Any Member, OSP, or Client whose general positions in a product reach 80 percent of its general position limit set by SHFE, or any Overseas Intermediary whose general positions in a product reach 60 percent of its general position limit, is required to file a large trader position report with SHFE.

A Member or OSP should file its large trader position report to SHFE directly. An Overseas Intermediary should file these reports through the FF Member that provides it trading and clearing services or the OSBP that provides it trading services. A Client should do so through its FF Member or OSBP, or, for any Client trading through an Overseas Intermediary, delegate the Overseas Intermediary to file such reports through the corresponding FF Member or OSBP.

If the aggregate positions held by a Client through multiple trading codes with different FF Members, OSBPs, and Overseas Intermediaries reach the reporting threshold, the Client should voluntarily file a report through an FF Member, OSBP, or Overseas Intermediary.

If a Client does not make this filing, its carrying FF Member, OSBP, or Overseas Intermediary should do so on the Client's behalf. SHFE can also designate and notify the relevant FF Members, OSBPs, and Overseas Intermediaries to file this report.

## 5. Forced position liquidation

- (1) SHFE will carry out forced liquidation if:
  - (i) the clearing deposit balance of a Member on any internal ledger at SHFE (for its own account or for whom it provides clearing services to) falls below zero and the margin requirement is not met within the specified time limit;
  - (ii) position limit is exceeded;
  - (iii) there is a violation of SHFE's rules that warrants forced liquidation;
  - (iv) there is any emergency that warrants forced liquidation; or
  - (v) there is any other circumstance that necessitates forced liquidation.
- (2) SHFE will also carry out forced liquidation according to its rules if a Non-FF Member, OSNBP, or Client exceeds the position limit for an underlying futures contract after exercising the corresponding options.
- (3) The principles and procedures of forced liquidation of option positions are governed by the *Risk Management Rules of the Shanghai Futures Exchange*.

## 6. Risk warning

SHFE implements a risk warning regime. Whenever SHFE deems it necessary, it may take one or a combination of the following measures to warn against and resolve risks: requiring certain market participants to give an explanation on a specific matter; arranging a meeting to give a verbal alert; issuing a written warning; giving a reprimand; issuing a risk warning notice to the public; and/or taking other necessary measures.

## 7. Trading limit

SHFE enforces trading limits. Trading limit means the maximum position some or all of the Members, some or all of the OSPs, and some or all of the Clients may open in a particular contract during a specified time interval. Based on market conditions, SHFE may, with respect to the different products and contracts listed on SHFE, limit the size of new positions established (“position-opening volume”) by some or all of the Members, some or all of the OSPs, and some or all of the Clients within a day. Specific standards will be separately provided by SHFE.

## **II. Abnormal Options Trading Behaviors**

1. Clients, Non-FF Members, and OSNBPs engaging in options trading must comply with the laws, regulations, and ministry-level rules of China and the rules of SHFE and voluntarily regulate their trading behaviors. Clients should accept the lawful and compliant oversight of their trading behaviors by FF Members, OSBPs, and Overseas Intermediaries.
2. Abnormal options trading behaviors are identified and handled in accordance with the *Administration of Abnormal Trading Behaviors Rules of the Shanghai Futures Exchange*.
3. FF Members, OSBPs, and Overseas Intermediaries should effectively manage the trading activities of Clients, prevent potential abnormal trading behaviors, and guide Clients to participate in options trading in a rational and compliant manner. If abnormality is detected in a Client’s options trading activities, FF Members, OSBPs, and Overseas Intermediaries are to alert, dissuade, and stop those behaviors and promptly report the situation to SHFE in writing.