

Crude Oil Options Handbook

Table of Contents

History of Options

Overview of China's Crude Oil Futures Market

INE Crude Oil Option Contract Specifications

Definitions

Key Requirements for INE Crude Oil Options

Trading Requirements

Exercise Requirements

Clearing Requirements

Risk Control Requirements

Information Management Requirements

Investor Eligibility (i.e., Suitability) Requirements

Rationale of and Case Study on Options Hedging

History of Options

Options are one of the mankind's oldest risk management tools, and the origin of their trading can be traced back to thousands of years ago. According to research, ancient Greeks and Phoenicians started to manage their risks in maritime trade by using options as early as 1200 B.C. In 580 B.C., Thales, an ancient Greek astronomer, predicted that a good harvest of olive in the coming year would lead to a surge in the demand for olive presses. Therefore, he signed an option contract with olive press owners, whereby he bought the right to use their olive presses to hedge against the risk of an expected rise in olive press price.

Many centuries later, options trading emerged in modern financial markets. In 1730s, amid a sweeping mania for Dutch tulips in the Europe, tulip wholesalers used tulip option contracts to protect themselves from risks in tulip forward contracts held by them. In 1872, options trading was started by Russell Sage, a then well-known financial economist, in the United States. Options trading, however, was on an over-the counter (OTC) basis without effective regulation. At that time, the dominance of OTC options trading spawned the creation of the Put and Call Brokers and Dealers Association.

The unified and standardized options trading were symbolized by an array of milestone events: The Chicago Board Options Exchange (CBOE) was founded and launched the first standardized option contract on April 26, 1973; in that year, the Black-Sholes-Merton option pricing theory saw breakthroughs, and Texas Instruments Incorporated unveiled an option pricing calculator; and Option Clearing Corporation (OCC), a national options clearing house, was established in 1974. To meet the intrinsic development needs of an options market, the Commodity Futures Trading Commission (CFTC) relaxed restrictions on options trading and promoted the introduction of many different commodity and financial option products.

The establishment and successful operation of exchange-traded options markets—CBOE and Chicago Mercantile Exchange (CME)—cleared the way for the development of the options market in the U.S. and also served a reference for the world's other markets to develop options. Inspired by the success of the America's options market, other developed markets and major emerging markets around the world followed suit, offering nearly 100 options products covering commodities, financial instruments and securities, foreign exchange, and crude oil.

CME and Intercontinental Exchange (ICE), the world's top two hubs for crude oil trading, are substantially important in crude oil options. CME's New York Mercantile Exchange (NYMEX) initially rolled out WTI crude oil futures options in 1986, and ICE's International Petroleum Exchange (IPE) introduced Brent crude oil futures options in 1989. According to the 2020 statistics of the Futures Industry Association (FIA), WTI crude oil futures options and Brent crude oil futures options were the two best performers by trading volume in the world's markets, with an annual trading volume of 29,567,200 lots and 25,863,200 lots respectively.

Overview of China's Crude Oil Futures Market

I. Trading of Crude Oil Futures

On March 26, 2018, with the support of all market participants, China's first crude oil futures product was listed on the Shanghai International Energy Exchange ("INE" or the "Exchange"). Since then, China's crude oil futures market has grown rapidly. In 2020, INE crude oil futures boasted a trading volume of 41,585,800 lots, a total turnover of RMB 11.96 trillion, and an end-of-year open interest of 84,700 lots, with the largest monthly trading volume of 5,677,100 lots recorded in May and the largest end-of-month open interest of 178,000 lots in April.

Table 1 Trading of INE Crude Oil Futures from 2018 to 2020

Year	Trading Volume (10,000 lots)	Turnover (RMB trillion)	End-of-Year Open Interest (10,000 lots)
2018	2,650.94	12.74	2.99
2019	3,464.44	15.47	2.94
2020	4,158.58	11.96	8.47

Source: INE

II. Delivery

In 2020, physical delivery was performed against 85,159 lots of INE crude oil future contracts, equivalent to 85,159,000 barrels, with the largest delivery volume of 13,859 lots, equivalent to 13,859,000 barrels, reported in August.

Table 2 Physical Delivery Volume of INE Crude Oil Futures from 2018 to 2020

Year	Volume (lots)
2018	2,849
2019	17,618
2020	85,159

Source: INE

III. Composition of Investors

Crude oil enterprises and financial institutions have become increasingly involved in the trading of crude oil futures by using crude oil futures in their risk management and asset

allocation. In 2020, corporate Clients represented 62.20% of the total open interest in, and 35.90% of the total trading volume of, INE crude oil futures.

IV. Price Correlation

Domestic and foreign data show a high price correlation between INE crude oil futures and WTI crude oil futures and Brent crude oil futures. In 2020, there was a correlation coefficient of 0.75 between INE crude oil futures and WTI crude oil futures and of 0.88 between INE crude oil futures and Brent crude oil futures. The price of INE crude oil futures is also highly correlated with the spot price (based on the Platts price index). In 2020, the correlation coefficient between the two prices was 0.87.

INE Crude Oil Option Contract Specifications

Underlying	INE Crude oil futures (SC) contract (1,000 barrels)
Contract Type	Call option and put option
Contract Size	1 SC contract
Price Quotation	(RMB) Yuan/barrel
Minimum Price Fluctuation	0.05 Yuan/barrel
Daily Price Limit	Same as the SC contract
Listed Contracts (i.e., Contract Months)	Option contracts will be listed for 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 INE, for later months on the second trading day thereafter
Trading Hours	9:00 a.m. to 11:30 a.m., 1:30 p.m. to 3:00 p.m., and other hours specified by INE
Last Trading Day	The thirteenth-to-last trading day of the month before the delivery month of the underlying SC contract (INE reserves the right to adjust the last trading day based on national holidays and weekends)
Expiration Date	Same as the last trading day
Strike Price	The range of strike price is the previous trading days' settlement price of the SC contract plus or minus 1.5 times the current day's price limit. The strike price interval is 2 Yuan/barrel if strike price \leq 250 Yuan/barrel; 5 Yuan/barrel if 250 Yuan < strike price \leq 500 Yuan/barrel; 10 Yuan/barrel if strike price > 500 Yuan/barrel
Option Style	American style. Buyers may submit an exercise request during trading hours on any trading day before the expiration date and an exercise or abandonment request before 3:30 p.m. on the expiration date
Contract Symbol	Call: SC-Contract Month-C-Strike Price Put: SC-Contract Month-P-Strike Price
Listing Exchange	Shanghai International Energy Exchange (INE)

Definitions

I. Underlying

The underlying of an option contract refers to the assets that the buyer of the option contract has the right to buy (sell) and the seller has the obligation to sell (buy). The underlying of an INE crude oil option contract is an INE crude oil futures contract.

II. Contract Type

Option contracts include call options and put options.

A call option is the option contract which entitles the buyer to buy, and obligates the seller to sell, the underlying futures contract at a predetermined price in a specified period of time in the future.

A put option is the option contract which entitles the buyer to sell, and obligates the seller to buy, the underlying futures contract at a predetermined price in a specified period of time in the future.

III. Contract Size

The contract size of an option contract is lot, and option contracts should be traded in an integral multiple of one lot.

IV. Price Quotation

An option contract has the same price quotation as the underlying futures contract.

V. Minimum Price Fluctuation

The minimum price fluctuation of an option contract refers to the minimum allowable price movement of the option contract.

VI. Daily Price Limit

An option contract is subject to the same daily price limit as the underlying futures contract.

Daily price limit = the previous day's settlement price of the underlying futures contract × the current day's price limit rate for the underlying futures contract

VII. Contract Month

The contract month of an option contract refers to the delivery month of the underlying futures contract.

VIII. Last Trading Day and Expiration Date

The last trading day of an option contract is the final trading day on which the option contract may be traded.

The expiration date of an option contract is the final trading day on which the buyer may exercise its right.

IX. Strike Price

The strike price of an option contract is the price, specified in the option contract, at which the buyer has the right to buy or sell the underlying in a specified period of time in the future.

The strike price interval is the gap between two adjacent strike prices of an option contract.

The Exchange may adjust the strike price intervals and strike price range to reflect market conditions.

X. Option Style

Options are classified into American-style options, European-style options and other style options as prescribed by the Exchange. The buyer of an American-style option may exercise the option on the expiration date or any trading day before; and the buyer of a European-style option may exercise the option only on the expiration date.

INE crude oil options are American-style ones.

XI. Contract Symbol

The contract symbol of an option contract comprises the contract symbol of the underlying futures contract, contract month, call or put option symbol, and strike price.

Key Requirements for INE Crude Oil Options

Trading Requirements

Members, Overseas Special Participants (OSPs), and Overseas Intermediaries should be fully prepared in terms of IT systems, options-related rules, risk management, and staff before engaging in options trading.

I. Trading Code

Non-FF Members, Overseas Special Non-Brokerage Participants (OSNBPs), and Clients should use the same trading codes in options trading as they use in futures trading. If any Member, OSNBP, or Client does not have a trading code, it should apply for one pursuant to the applicable futures trading rules of the Exchange.

II. Request for Quote

A market maker regime may be introduced for options trading. Non-FF Members, OSNBPs, and Clients may request for quote (“RFQ”) from market makers. The Exchange will determine and announce contracts for and frequency of RFQs, and may adjust them based on market conditions.

FF Members, OSNBPs, and Overseas Intermediaries should manage RFQs from the Clients and require them to submit reasonable RFQs.

III. Premium

The price of an option contract refers to the premium of the option contract per quotation unit.

A premium refers to the amount that an option buyer pays in exchange of rights under the option.

IV. Trading Order

Trading orders for option contracts include limit orders and other orders prescribed by the Exchange. A limit order may be attached with the properties of both fill or kill (FOK) and fill and kill (FAK) orders.

The Exchange may adjust and announce the types of trading orders for option contracts according to market conditions.

V. Maximum Size of Each Trading Order

The maximum size of each trading order for a crude oil option contract is 100 lots.

The Exchange may specify, adjust, and announce the maximum size of each trading order according to market conditions.

VI. Listing of Option Contracts

Option contracts will be listed in accordance with the following rules:

- (i) The listing date of an option contract for a new month should be set out in the contract;
- (ii) The option contract to be listed should consist of one at-the-money contract and several in-the-money contracts and out-of-the-money contracts;
- (iii) Following the listing of an option contract for trading, the Exchange will, in accordance with the rules of the option contract, list option contracts for the same month but at new strike prices based on the price limit and previous settlement price of the underlying futures contract, until market close on the trading day before the expiration date.
- (iv) The Exchange will determine and announce the listing benchmark price of an option contract.

An at-the-money option refers to an option contract the strike price of which is equal or close to the previous settlement price of the underlying futures contract and, where the average value of two adjacent strike prices is equal to such settlement price, the higher strike price will be the strike price of the at-the-money option; an in-the-money option refers to a call (put) option the strike price of which is lower (higher) than that of the at-the-money option; and an out-of-the-money option refers to a call (put) option the strike price of which is higher (lower) than that of the at-the-money option.

VII. Close-out of Option Contracts

An option contract can be closed out by liquidation, exercise, or abandonment.

Liquidation refers to a method by which the seller or buyer of an option contract closes out such option contract by taking a reverse position in an option contract which has the same size, underlying futures contract, contract month, expiration date, option style, and strike price as such option contract.

Exercise refers to a method by which the buyer of an option contract closes out such option contract by buying or selling the underlying futures contract at the strike price in accordance with applicable rules.

Abandonment refers to a method by which the buyer of an option contract closes out such option contract by refusing to exercise its rights thereunder upon expiration thereof.

Exercise Requirements

I. Methods of Exercise and Fulfilment

The exercise and fulfillment of option contracts by Clients should be made at INE via the client software. The Exchange also provides the Member Service System and the Overseas Intermediary Service System as backup channels for submitting exercise and other requests on behalf of Clients. The former system is available to FF Members and OSBPs; the latter is available to Overseas Intermediaries.

II. Time of Exercise and Fulfillment

An option buyer may submit an exercise or abandonment request within the time limit as specified by the Exchange.

An option seller is obligated to fulfill the option. Upon the exercise of the option by the option buyer, the option seller should buy or sell a specified quantity of the underlying futures contract at such strike price as prescribed in the option contract.

The Exchange may adjust the time limit for submitting exercise and abandonment requests on the expiration dates of option contracts.

III. Assignment

Upon the expiration of the time limit for submission of exercise requests, the Exchange will assign exercise requests on a random and unbiased basis.

IV. Establishment of Futures Positions upon Exercise and Fulfillment

Upon exercise and fulfillment of a call option, the option buyer will hold a long position in the underlying futures at the strike price, and the option seller will hold a short position in the underlying futures at the same strike price.

Upon exercise and fulfillment of a put option, the option buyer will hold a short position in the underlying futures at the strike price, and the option seller will hold a long position in the underlying futures at the same strike price.

V. Automatic Exercise

For an option contract for which no exercise or abandonment request has been submitted within the specified time limit, the Exchange will, prior to the time of clearing on the expiration date thereof:

- (i) cause such option contract to be automatically exercised in the case of a call option the strike price of which is lower than the settlement price of the underlying futures contract on

that day;

(ii) cause such option contract to be automatically exercised in the case of a put option the strike price of which is higher than the settlement price of the underlying futures contract on that day; or

(iii) treat such option contract as being automatically abandoned in the case of any other option.

VI. Netting

A Non-FF Member, OSNBP, and 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 current day's open interest for that option contract, and added to the contract's trading volume.

An option buyer may request for the netting of its long and short futures positions obtained upon the exercise 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 current day's open interest for that futures contract and added to the contract's trading volume.

An option seller may request for the netting of its long and short futures positions obtained upon the 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 current day's open interest for that futures contract and added to the contract's trading volume.

The time limit and method of submission of the above requests will be separately announced by the Exchange.

VII. Requirements on Funds Needed for Exercise

When submitting an exercise request, an option buyer should have sufficient amount of available funds to meet the margin requirements for the resulting futures positions.

FF Members, OSBPs, and Overseas Intermediaries should not accept the exercise request of an option buyer who has insufficient funds. On the expiration date, if the option contract is as described in the foregoing V(i) or V(ii), but the option buyer has insufficient funds, its carrying FF Member, OSBP, or Overseas Intermediary should submit an abandonment request to the Exchange on its behalf.

Clearing Requirements

I. Payment of Premium and Margin

In an option trade, the option buyer pays the applicable premium and needs not to pay any trading margin, while the option seller receives the premium and needs to pay the trading margin.

When an option buyer establishes a position, it will pay a premium equaling the amount needed to establish that position; when an option buyer closes a position, it will receive a premium equaling the amount needed to close that position.

When an option seller establishes a position, it will receive a premium equaling the amount needed to establish that position; when an option seller closes a position, it will pay a premium equaling the amount needed to close that position.

When an option seller establishes a position, the Exchange will collect a trading margin from the option seller at the margin rate for the option contract applicable at the time of clearing on the previous trading day; when the option seller closes a position, the Exchange will release the trading margin for the option contract closed by the option seller.

II. Collection of Margin and Fees

At the time of clearing on a trading day, the Exchange will collect trading margin from option sellers based on the respective settlement price of the option contract and the underlying futures contract on that day, trading fees and exercise (fulfillment) fees from option buyers and sellers based on the trading volume and exercise (fulfillment) volume, and transfer the resulting receivables and payables on a lump-sum and netting basis as a credit or debit to their respective Member's clearing deposit.

The Exchange will determine and announce its fee rates and may adjust such fee rates to reflect market conditions.

III. Settlement Price

The settlement price of an option contract will be determined by the following methods:

- (i) The theoretical price of the option contract as determined by the Exchange based on its implied volatility will be treated as its settlement price on any trading day other than the last trading day;
- (ii) The calculation formula for the settlement price of the option contract on the last trading day will be as follows:

Settlement price of a call option = Max (settlement price of the underlying futures contract–

strike price, minimum price fluctuation);

Settlement price of a put option = Max (strike price – settlement price of the underlying futures contract, minimum price fluctuation);

(iii) The Exchange may adjust the settlement price of the option contract if the price of the option contract is clearly unreasonable.

The implied volatility of an option contract refers to the price volatility of the underlying futures contract as calculated by using the option pricing model based on the market price of the option contract.

IV. Treatment of Positions and Funds upon Exercise or Abandonment

In the case of exercise or abandonment of an option contract, the Exchange will, at the time of clearing, deduct the positions of the option buyer or seller in such option contract from their respective total open options, and release the option seller's trading margin for such position.

Futures positions established by the exercise (or fulfillment) of an option contract on a given day will not be included in the calculation of the settlement price for that day.

Risk Control Requirements

I. Risk Control

The Exchange will apply margin requirement, price limit, position limit, trading limit, large trader position reporting, forced liquidation, and risk warning rules to the management of risks in options trading.

II. Margin Requirement

The Exchange will apply margin requirement rules to options trading. The trading margin rate applicable to an option seller will be the higher of:

- (i) Settlement price of the option contract \times contract size of the underlying futures contract + trading margin for the underlying futures contract $- (1/2) \times$ out-of-the-money amount of the option contract; and
- (ii) Settlement price of the option contract \times contract size of the underlying futures contract + $(1/2) \times$ trading margin for the underlying futures contract.

Where:

Out-of-the-money amount of a call option contract = $\text{Max} (\text{strike price} - \text{settlement price of the underlying futures contract}, 0) \times \text{contract size of the underlying futures contract}$; or

Out-of-the-money amount of a put option contract = $\text{Max} (\text{settlement price of the underlying futures contract} - \text{strike price}, 0) \times \text{contract size of the underlying futures contract}$

The Exchange may prescribe different trading margin rates for different portfolios of options positions.

III. Price Limit

The Exchange will apply price limit rules to options trading. The limit prices for an option contract will be calculated as follows:

- (i) Upper limit price = the previous settlement price of the option contract + previous settlement price of the underlying futures contract \times upper limit rate for the underlying futures contract; and
- (ii) Lower limit price = $\text{Max} (\text{previous settlement price of the option contract} - \text{previous settlement price of the underlying futures contract} \times \text{lower limit rate for the underlying futures contract}, \text{the minimum price fluctuation of the option contract})$.

IV. Limit-Locked Market

A Limit-Locked Market for an option contract refers to the situation where, within five minutes prior to the close of a trading day, there are only bid (ask) orders at the limit price without any ask (bid) orders at such price, or all ask (bid) orders are instantly filled at a price other from the limit price, and the last price is the same as the upper (lower) limit price.

Where an option contract's settlement price of the previous trading day is equal to or less than the current-day price limit and, within five minutes before the close of a trading day, there are only ask orders at the lower limit price but no bid orders at such price, or if during such time any bid order is instantly filled without hitting the lower limit price, then the Exchange will not treat the situation as a Limit-Locked Market.

If a same-direction Limit-Locked Market occurs for three consecutive trading days with respect to an option contract, the Exchange will not implement forced position reduction, unless the Exchange believes there is an abnormal circumstance.

V. Suspension of Trading

The trading of an option contract will be suspended when trading of the underlying futures market is suspended.

If the trading of an option contract is suspended for a whole day on the last trading day, the last trading day and expiration date of the option contract will be postponed to the next trading day.

VI. Adjustment of Margin and Price Limit

The trading margin and price limit for an option contract will be adjusted to the extent that those for the underlying futures contract are adjusted.

VII. Position Limit

The Exchange will apply position limit rules to options trading. Position limit for an option contract refers to the maximum size of positions held by a Non-FF Member, OSNBP, or Client in the option contract, as prescribed by the Exchange.

If a Client has acquired multiple trading codes from different FF Members, OSBPs, and Overseas Intermediaries, the combined size of its open positions under all these trading codes should not exceed the position limit imposed by the Exchange with respect to the Client.

Position limits for option contracts and futures contracts will not apply on an aggregated basis. Position limit for an option contract varies across different periods of trading within its lifecycle. These time periods coincide with those for the underlying futures contract.

The open position of a Non-FF Member, OSNBP, or Client in an option contract should not exceed the position limit prescribed by the Exchange. The Exchange will determine and

announce the general position limit for an option contract and may adjust such position limit to reflect market conditions.

If a Non-FF Member, OSNBP, or Client, upon the exercise of an option, holds positions in the underlying futures contract exceeding the applicable position limit, the Exchange will take actions in accordance with applicable rules.

Position limits for Non-FF Members, OSNBPs, and Clients engaging in hedging, arbitrage trading, and market making will be subject to the applicable rules of the Exchange.

VIII. Calculation of Options Positions

The options positions held by a Non-FF Member, OSNBP, or Client will be calculated as follows:

- (i) Longs positions in call options with the same underlying asset + short positions in put options with the same underlying asset;
- (ii) Long positions in put options with the same underlying asset + short positions in call options with the same underlying asset.

IX. Trading Limit

The Exchange may apply trading limit rules to option contracts in accordance with the applicable provisions of the *Risk Management Rules of the Shanghai International Energy Exchange*.

X. Large Trader Position Reporting

The Exchange will apply large trader position reporting rules to options trading. The large trader position reporting threshold and materials to be submitted will be subject to the *Risk Management Rules of the Shanghai International Energy Exchange*.

XI. Forced Liquidation

The Exchange will apply forced liquidation rules to options trading. The Exchange will carry out forced liquidation if:

- (i) the clearing deposit balance of a Member on any internal ledger of the Exchange, whether for its own Clients or for other entities for whom it clears trades, falls below zero, and the Member fails to meet the margin requirement within the specified time limit;
- (ii) the open position held by a Non-FF Member, OSNBP, or Client has exceeded the applicable position limit;
- (iii) there is a violation of the Exchange'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.

The principles and procedures for forced liquidation in connection with options trading will be governed by the *Risk Management Rules of the Shanghai International Energy Exchange*.

XII. Risk Warning

The Exchange will apply risk warning rules to options trading. Circumstances which require risk warnings and the methods of issuance of risk warnings will be governed by the *Risk Management Rules of the Shanghai International Energy Exchange*.

Information Management Requirements

I. Options Trading Information

Options trading information refers to the options market data and trading-related statistical data generated from options trading on the Exchange, various announcements/circulars/notices issued by the Exchange, and any other information required by the China Securities Regulatory Commission (CSRC) to be disclosed.

II. Ownership of Options Trading Information

The options trading information is the property of the Exchange, and will be managed and published by the Exchange, who may, independently, cooperate with third parties to, or authorize a third party to, operate and manage such information. Without the approval of the Exchange, no entity or individual may publish the options trading information, or use the same for any commercial purposes.

III. Publication of Options Trading Information

The Exchange will publish different levels of real-time, delayed, daily, weekly, monthly, and yearly options market data, various statistics, and historical data in accordance with applicable rules and market demands.

The Exchange may, if necessary, adjust the details and publication frequency of the data to be published.

Real-time market data refers to market data published concurrently with trading activities during trading hours; and delayed market data refers to market data published by the Exchange after delaying the publication of the real-time market data for a specific time. Market data mainly include contract name, last price, price change, trading volume, open interest and change therein, bid price, ask price, bid volume, ask volume, settlement price, opening price, closing price, high price, low price, and previous settlement price, among others.

The Exchange will timely publish to Members and OSPs real-time market data used for futures trading.

The daily options market data will be published after the close of each trading day, mainly including: contract symbol, opening price, high price, low price, closing price, previous settlement price, settlement price, price change, trading volume, open interest and change therein, turnover, delta, implied volatility, and exercise volume.

Delta means the ratio of the change in the price of an option contract to the change in the price of the underlying asset; and exercise volume refers to the quantity of the option contracts that are closed out by exercise.

The weekly options market data will be published after the close of the final trading day of each week, mainly including: contract symbol, weekly opening price, high price, low price, weekly closing price, price change (the difference between the closing price at the end of the current week and the settlement price at the end of the previous week), open interest and change therein (the difference between the open interests at the end of the current week and the previous week), weekly settlement price, trading volume, turnover, and exercise volume.

The monthly options market data will be published after the end of the final trading day of each month, mainly including: contract symbol, monthly opening price, high price, low price, month-end closing price, price change (the difference between the closing price at the end of the current month and the settlement price at the end of the previous month), open interest and change therein (the difference between the open interests at the end of the current month and the previous month), month-end settlement price, trading volume, turnover, and exercise volume.

The yearly options market data will be published after the end of the final trading day of each year, mainly containing:

- (i) the total trading volume and turnover for all option products, and the trading volume and turnover for each product; and
- (ii) the total exercise volume for all option products and the exercise volume for each product.

The Exchange may, if necessary, adjust the details of the yearly option market data to be published.

Investor Eligibility Requirements

I. Individual Clients

When an Account Opening Institution applies for a trading code or trading access on behalf of an individual Client, such individual Client should meet the following criteria:

- (i) having full capacity for civil conduct;
- (ii) having basic knowledge about futures trading and an understanding of the relevant rules;
- (iii) having records of no fewer than 20 simulated futures or options trades from at least 10 days of trading on Chinese futures exchanges; or having no fewer than 10 trades in futures, options or other centrally cleared derivatives at a Chinese trading venue in the past three years; or having no fewer than 10 trades in futures, options or other centrally cleared derivatives in the past three years on overseas exchanges regulated by competent futures regulatory authorities that have signed an MOU on regulatory cooperation with the CSRC (such overseas trading records are hereinafter referred to as the “Recognized Overseas Trading Record”);
- (iv) having an available balance of no less than RMB 500,000 or its equivalent in foreign currency in his or her margin account on each of the five consecutive trading days before applying for the trading code or trading access;
- (v) having no material adverse credibility records, having never been subjected to a ban from the futures market by any competent regulatory authority, and pursuant to any laws, rules and regulations, or the rules of the Exchange, having never been banned or restricted from engaging in futures trading; and
- (vi) meeting any other conditions required by the Exchange.

II. Institutional Clients

When an Account Opening Institution applies for a trading code or trading access on behalf of an institutional Client, such institutional Client should meet the following criteria:

- (i) having the corresponding personnel with basic knowledge about futures trading and an understanding of the relevant rules;
- (ii) having records of no fewer than 20 simulated futures or options trades from at least 10 days of trading on Chinese futures exchanges; or having no fewer than 10 trades in futures, options or other centrally cleared derivatives at a Chinese trading venue in the past three years; or having a Recognized Overseas Trading Record for no fewer than 10 trades in the past three years;
- (iii) having an available balance of no less than RMB 1,000,000 or its equivalent in foreign

currency in its margin account on each of the five consecutive trading days before applying for the trading code or trading access;

- (iv) having sound internal control, risk management and other relevant rules on futures trading;
- (v) having no material adverse credibility records, having never been subjected to a ban from the futures market by any competent regulatory authority, and pursuant to any laws, rules and regulations, or the rules of the Exchange, having never been banned or restricted from engaging in futures trading; and
- (vi) meeting any other conditions required by the Exchange.

III. Exemptions

- (i) When assessing the eligibility of a Client who meets any of the following criteria, the Account Opening Institution may waive the basic knowledge and trading experience requirements. In addition, if the Client is already trading a listed product subject to investor eligibility requirements (“eligibility-restricted product”), and the available fund balance required by that product is no lower than what is required by the product the Client is currently applying for, then the available fund balance requirement may also be waived:
 - 1. having obtained trading access to any eligibility-restricted product listed on another Chinese commodity futures exchange;
 - 2. having obtained a trading code for financial futures;
 - 3. having obtained trading access to options listed on Chinese stock exchanges; and
 - 4. having obtained a trading code from the Exchange and trading access to an eligibility-restricted product listed on the Exchange, and currently applying for trading access to another product listed on the Exchange.

The Client needs to provide supporting materials for the above-mentioned qualifications.

- (ii) When assessing a Client’s eligibility, an Account Opening Institution should make full use of existing information and assessment results. Accordingly, it may skip an assessment item that was examined before and any supporting material that has been submitted before.

If a Client already has trading access to an INE product, then at the same Account Opening Institution, it may automatically acquire the trading access to other INE products subject to the same or lower requirement on available fund balance.

- (iii) An Account Opening Institution may waive the basic knowledge, trading experience, or available fund balance requirements when applying for a trading code or trading access to an eligibility-restricted product on the behalf of a Client, if the Client:

1. is a professional investor as defined in the *Measures for the Administration of Securities and Futures Investors Suitability*;
2. has trading access to an eligibility-restricted product and is applying for access to the same product at a different Account Opening Institution (the Client shall furnish the corresponding supporting materials);
3. has the records for executing trades in futures, options, or any centrally cleared derivatives at a Chinese trading venue for no fewer than 50 trading days within the past year, or the Recognized Overseas Trading Record for the equivalent (the Client shall furnish the corresponding detailed trading records, settlement statements, or similar supporting documents); or
4. is a market maker, Special Institutional Client, or another type of trader specially recognized by the Exchange.

“Special Institutional Client” refers to an institutional Client that is required by laws, administrative regulations, or ministry-level rules to manage assets in segregated accounts. The term includes but is not limited to financial institutions such as futures firms, securities companies, fund management companies, and trust companies, social security funds, and Qualified Foreign Institutional Investors.

Rationale of and Case Study on Options Hedging

Rationale

Risks from crude oil price changes generally include those from price decreases or increases. Crude oil producers are worried about the former risk as a declining crude oil price will erode their profits. In contrast, enterprises processing crude oil are concerned about the latter risk because a growing crude oil price will add to their costs.

When hedging with crude oil futures, an investor will sell or buy a crude oil futures contract and at the same time buy or sell crude oil in the spot market in order to avoid the risk of price fluctuations in the spot market. Basically, investors may establish a short or long hedge in crude oil futures.

Futures hedging is relatively simple but subject to some adverse factors. For example, when the futures price moves drastically against an investor, the investor will face the risk of margin calls, thereby being put under some financial pressure.

Unlike futures hedging, options hedging will not expose option buyers to the risk of margin calls, regardless of changes in crude oil price. In addition to hedging against price risks, option buyers still have the opportunity to make a profit when the price moves in favor of them. Nevertheless, option buyers need to pay premiums for buying the options.

Case Study

An enterprise processing crude oil signed a purchase contract for 10,000 barrels of crude oil, whereby the crude oil would be delivered in a month at the then prevailing price. The current spot price of crude oil is 392.0 Yuan/barrel. Afraid of a further increase in crude oil price, this enterprise has the demand to enter into a long hedge. To do so, it may choose a futures or options hedging strategy.

Table 3 Specific Actions Involved in Futures and Options Hedging Strategies

Type	Strategy	Specific Actions
Futures hedging	Buying futures contracts	Buying, at the price of 394.0 Yuan/barrel, 10 lots of crude oil futures contract to be delivered in two months.
Options hedging	Buying call options	By paying a premium at 3.0 Yuan/barrel, buying 10 lots of call options whose strike price is 390.0 Yuan/barrel and the underlying asset is the crude oil futures contract to be delivered in two months.

1. If the spot and futures prices rise to 410.0 Yuan/barrel and 412.0 Yuan/barrel

respectively a month later:

Futures hedging strategy:

Profit or loss from the spot positions: $392.0 - 410.0 = -18.0$ Yuan/barrel

Profit or loss from the futures positions: $412.0 - 394.0 = 18.0$ Yuan/barrel

Total profit or loss: $18.0 - 18.0 = 0$ Yuan/barrel

Actual buying price: $392.0 + 0 = 392.0$ Yuan/barrel

Options hedging strategy:

Profit or loss from the spot positions: $392.0 - 410.0 = -18.0$ Yuan/barrel

Profit or loss from the options positions (upon exercise of the options): $412.0 - 390.0 - 3.0 = 19.0$ Yuan/barrel

Total profit or loss: $19.0 - 18.0 = 1.0$ Yuan/barrel

Actual buying price: $392.0 - 1.0 = 391.0$ Yuan/barrel

2. If the spot and futures prices drop to 380.0 Yuan/barrel and 382.0 Yuan/barrel respectively in a month:

Futures hedging strategy:

Profit or loss from the spot positions: $392.0 - 380.0 = 12.0$ Yuan/barrel

Profit or loss from the futures positions: $382.0 - 394.0 = -12.0$ Yuan/barrel

Total profit or loss: $12.0 - 12.0 = 0$ Yuan/barrel

Actual buying price: $392.0 + 0 = 392.0$ Yuan/barrel

Options hedging strategy:

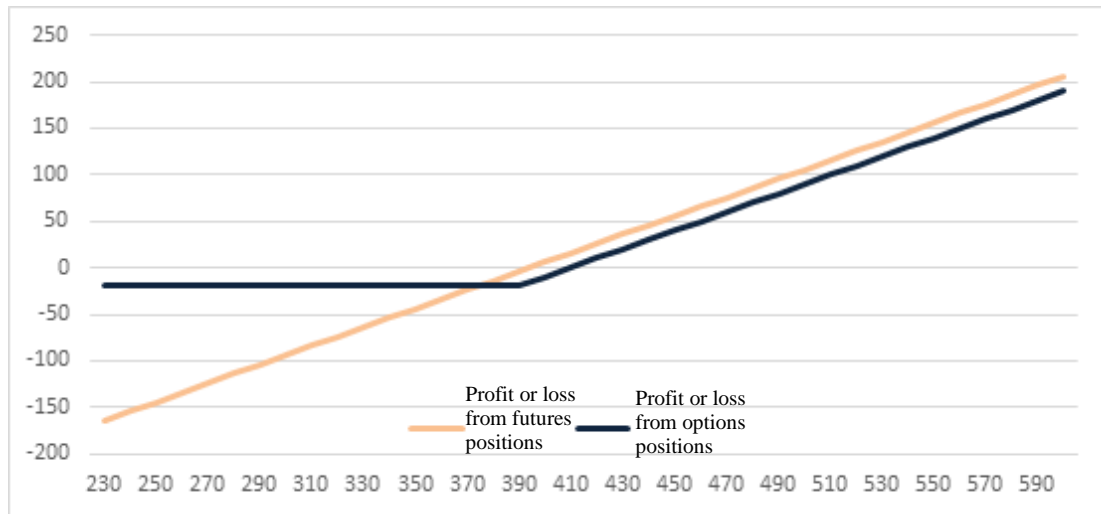
Profit or loss from the spot positions: $392.0 - 380.0 = 12.0$ Yuan/barrel

Profit or loss from the options positions (upon abandonment of the options): premium loss = -3.0 Yuan/barrel

Total profit or loss: $12.0 - 3.0 = 9.0$ Yuan/barrel

Actual buying price: $392.0 - 9.0 = 383.0$ Yuan/barrel

Figure 1: Futures Hedging vs. Options Hedging



Characteristics of Futures and Options Hedging

Hedging Instrument	Futures	Options
Rights and obligations of buyer and seller	Reciprocal	Non-reciprocal, i.e., the buyer has the right to buy or sell the underlying asset at the agreed price, while the seller is obligated to fulfill the option contract.
Hedging results	Hedgers lock price risk but are unable to benefit from possible favorable price movements in the future	The buyer locks price risk and needs to pay a premium, but has the opportunity to make an extra gain.
Collection of margin	Both the buyer and the seller need to pay a margin	The seller, instead of the buyer, needs to pay a margin
Profit or loss before expiration date	Linear	Non-linear
Hedging range	Full hedging	Options portfolios may be used to hedge within a specific price range, thereby cutting the hedging cost.