

**CBOT<sup>®</sup>**

**How the e-cbot<sup>®</sup> Market Works**



 **Chicago Board of Trade**

# Table of Contents

<b>Introduction</b> .....	<b>1</b>
<b>Background</b> .....	<b>1</b>
<b>Chapter 1: Benefits</b> .....	<b>2</b>
<b>Chapter 2: Trading Host</b> .....	<b>3</b>
The Network .....	3
Clearing Firms Approve Direct Access .....	3
What Happens to a Trade .....	3
The CME/CBOT Common Clearing Link .....	4
Market Data .....	4
<b>Chapter 3: Trading</b> .....	<b>5</b>
Market Operations .....	5
Functional Member Readiness (FMR) .....	5
Anonymity .....	5
System Configuration .....	5
Trade Matching Priority .....	5
The Pro-Rata Algorithms .....	5
<b>Chapter 4: Entering and Managing Orders</b> .....	<b>8</b>
Submitting Orders .....	8
Automated Price Injection Models (APIM) .....	8
Dynamic Price Limits .....	8
Monitoring .....	9
Order Types .....	9
Delta Protection .....	11
Recognized Spreads on e-cbot .....	11
Delta Neutral Option Trades .....	11
Reduced Tick Spreads .....	12
Inter Commodity Spreads .....	12
Order Management .....	12
Wholesale Transactions .....	12
Termination of a Trading Session and Subsequent Restart .....	13
Dow <sup>SM</sup> Price Limits and Trading Halts .....	13
Error Trade Policy .....	13
<b>Chapter 5: The Trading Day</b> .....	<b>14</b>
<b>Chapter 6: Member and User Setup</b> .....	<b>16</b>
Master Trader Mnemonic .....	16
User IDs .....	17
<b>Chapter 7: Implied Spread Trading</b> .....	<b>18</b>
Spread Trades .....	18
Dissemination of Implied Prices .....	18
<b>Chapter 8: Settlement Prices and the Clearing Process</b> .....	<b>20</b>

# Introduction

## **How the e-cbot® Powered by LIFFE CONNECT® Market Works**

This brochure provides a description of how futures and options on futures trading takes place on e-cbot® powered by LIFFE CONNECT®. This ranges from the ways in which the trading platform can be accessed to how orders are input, matched, cleared, and monitored.

The Chicago Board of Trade decision to transition to LIFFE CONNECT® was based on its advanced technology and enhanced functionality. The LIFFE CONNECT® platform functionality is generally the same for all LIFFE CONNECT® markets. However, the functionality of e-cbot has been tailored and improved to ensure that users of the LIFFE CONNECT® platform have the assurance and reliability that users have been accustomed to when trading CBOT® products.

## **Background**

With the new e-cbot trading platform, traders will be able to operate with greater ease and efficiency. The functionality and capacity offered by LIFFE CONNECT® will provide market users with the trading opportunities that they have come to expect from the Chicago Board of Trade.

Our goal is to provide CBOT customers a trading platform that offers the flexibility to address competitive demands. We transitioned to LIFFE CONNECT® because of its advanced technology and enhanced functionality – including over 30 different spread strategies, flexible matching algorithms, real-time quotes, real-time trade data, and dynamic price limits.

We believe the e-cbot electronic trading platform provides unrivaled opportunity for its users.

# Benefits

---

e-cbot powered by LIFFE CONNECT® – a state of the art trading platform – was designed and developed by Euronext.liffe in conjunction with customers and selected independent software vendors (ISVs).

## **Enhanced Functionality**

- full spread trading capability
- flexible trading algorithms
- option strategy functionality
- real time quotes and trade data
- dynamic price limits

Reliable, scalable, and secure, the e-cbot platform will allow the marketplace to operate with greater ease and efficiency and let its users focus on the bottom line.

## **Flexible Front End Choices**

The CBOT certifies all ISVs and member developers who write to the application program interface (API). All ISVs must pass CBOT conformance testing, and offer a range of front end solutions. This allows the end user community the opportunity of choice.

# Trading Host

The trading host is at the heart of the trading system and handles the matching of bids and offers.

The LIFFE CONNECT® platform, widely acknowledged to be the world's leading derivatives trading system, is capable of trading high volumes of complex interest rate, equity index, and commodity products. e-cbot provides an anonymous order-driven system where traders are unaware of their actual counterparty both pre- and post-trade until the trade is cleared.

e-cbot powered by LIFFE CONNECT® is based on an open system architecture using an API which allows users to build or purchase trading or view-only applications to suit their specific business needs. This offers the potential to integrate front and back office trading, risk management, and order routing systems. e-cbot provides the world's most advanced and complete electronic trading environment and offers unrivaled execution, speed, and flexibility to customers.

## **The Network**

There are seven points of presence (POPs) that route orders to the host. These POPs are

located in major financial centers – Chicago, New York, London, Paris, Amsterdam, Gibraltar, and Singapore – offering flexibility and choice of connections including:

- Direct access through the e-cbot network
- Access through a service provider (SP)
- Access through a member's own network

## **Clearing Firms Approve Direct Access**

Direct access connections to e-cbot are granted at the discretion of the CBOT clearing member firms.

## **What Happens to a Trade**

Trading on e-cbot takes place by submitting an order through a trading application (front-end software) into the e-cbot central order book. Having received the orders, the e-cbot trading host stores all orders in a central order book and performs order matching with corresponding orders (this is an electronic representation of the marketplace) where the criteria for determining order priority is dependent on the contract being traded.

A trader has the ability to revise orders, and orders may be withdrawn at any time during a session.

After a trade has been executed on e-cbot, confirmation of execution is sent to the trading application. Trade details are also sent from the trading host to the CME/CBOT Common Clearing Link.

#### **The CME/CBOT Common Clearing Link**

To complement the new, state of the art trading technology, the CBOT has entered into a landmark agreement with the Chicago Mercantile Exchange (CME) to form a common clearing link.

The Common Clearing Link benefits include:

- one clearing interface
- a single guarantee fund
- optimization of margin savings

#### **Market Data**

e-cbot distributes market data in real-time from the host to quote vendors through the CBOT quote vendor network. The CBOT quote vendor network or Market Data gives customers the ability to track and view all price and aggregate volumes available for buy and sell orders of a specified contract or explicit spread market.

# Trading

## Market Operations

Market Operations ensures that a fair and orderly market is maintained at all times and is the trader's daily point of contact with the exchange. Its team of staff specialists deal with specific product areas.

## Functional Member Readiness (FMR)

Functional Member Readiness is primarily responsible for providing customer assistance with regard to client connectivity to the e-cbot platform. Contact details for FMR can be found on the e-cbot web site ([www.cbot/ecbot](http://www.cbot/ecbot)), or by calling 312-341-7955.

## Anonymity

Trading anonymity is a key aspect of the e-cbot market. Participants in the market will not be aware of whose orders they are viewing or are trading against, either before or after a trade until the trade has cleared.

## System Configuration

Regardless of whether a trader or firm chooses to develop a private trading application or use a solution provided by an ISV, the method by which the trading application communicates with the e-cbot system is through the LIFFE CONNECT® API. This is described in detail in the e-cbot Reference Manual, copies of which may be requested from [Electronic\\_Trading@cbot.com](mailto:Electronic_Trading@cbot.com) or by contacting FMR at 312-341-7955.

## Trade Matching Priority

The trading host configuration allows trade matching algorithms to be set by contract using one of the following algorithms.

### *Price explicit time priority*

**Price:** The highest bid or lowest offer has priority over orders in the same contract month, spread, or option strike.

**Time:** The first order at a price has priority over all other orders at the same price which will, in turn, trade according to the time they were accepted by the trading host.

Explicit Orders will have priority over Implied Orders at the same price level.

### *Price and pro-rata priority*

**Price:** The highest bid or lowest offer has priority over orders in the same contract month, spread, or option strike.

**Pro-rata:** When all orders at a price have the same priority, orders are filled in proportion to volume.

## The Pro-Rata Algorithms

Five variations of the pro-rata algorithm are available:

- vanilla pro-rata  
(with priority functionality disabled)

- pro-rata with priority order and no volume cap or minimum volume
- pro-rata with priority order and a volume cap
- pro-rata with priority order and a minimum volume requirement
- pro-rata with a priority order, a volume cap, and a minimum volume requirement

### Vanilla Pro-Rata Algorithm

The vanilla pro-rata algorithm divides incoming orders at a given price in proportion to the volumes specified on the resting orders at that price. This contrasts with the price and time algorithm which allocates volume on a first come, first served basis.

#### Example 1 - Given these orders:

<b>Trader 1</b>	December 10-year T-note futures	Sell 100 contracts @ 111-03	10:01 a.m.
<b>Trader 2</b>	December 10-year T-note futures	Sell 20 contracts @ 111-03	10:02 a.m.
<b>Trader 3</b>	December 10-year T-note futures	Sell 80 contracts @ 111-03	10:03 a.m.

A new bid of 111-03 for 110 contracts will be allocated in this way using a vanilla pro-rata algorithm:

<b>Trader 1</b>	sells 55 contracts
<b>Trader 2</b>	sells 11 contracts
<b>Trader 3</b>	sells 44 contracts

### Pro-Rata Algorithm with Priority Order

The pro-rata algorithm with priority order differs from the vanilla pro-rata algorithm by allowing one order on each side of the market

to be assigned a priority flag. Once an incoming order has traded against the priority order, the pro-rata function operates in the normal fashion. This mechanism should encourage traders to improve prices by rewarding price improvement with volume.

An order will gain priority status if it creates a price improvement in a market as it enters the order book. Only one order in a particular market can have priority status at any one time. As a result, priority status will be passed to an order that creates a price improvement prior to the filling of the order that had previously held priority status.

There will not always be a priority order. For example, when the priority order is fully traded, there could still be other unfilled orders at the same or worse price.

#### Example 2 - Given these orders:

<b>Trader 1</b>	December 10-year T-note futures	Sell 100 contracts @ 111-03	10:01 a.m. (Priority)
<b>Trader 2</b>	December 10-year T-note futures	Sell 20 contracts @ 111-03	10:02 a.m.
<b>Trader 3</b>	December 10-year T-note futures	Sell 80 contracts @ 111-03	10:03 a.m.

In this case, the order of Trader 1 is assigned priority because this order created the price improvement. A new bid of 111-03 for 110 contracts will be allocated in this way using a pro-rata algorithm with priority order:

<b>Trader 1</b>	sells 100 contracts (priority)
<b>Trader 2</b>	sells 2 contracts
<b>Trader 3</b>	sells 8 contracts

**Pro-Rata with Priority Order and a Volume Cap**

In order to prevent a priority order from locking a particular market, a volume cap is available within the algorithm. It is possible to specify two volume cap values for each contract, one for outright markets and one for spread markets. These values represent the amount of the volume to which priority will be assigned. Once the volume cap has been hit, the algorithm distributes any unassigned volume remaining in the incoming order in the normal pro-rata manner. Because of this, the priority order can be allocated additional volume over that allowed by the volume cap.

**Example 3 - Given these orders:**

<b>Trader 1</b>	December 10-year T-note futures	Sell 100 contracts @ 111-03	10:01 a.m. (Priority)
<b>Trader 2</b>	December 10-year T-note futures	Sell 20 contracts @ 111-03	10:02 a.m.
<b>Trader 3</b>	December 10-year T-note futures	Sell 80 contracts @ 111-03	10:03 a.m.

Because Trader 1 has made the new best price, this order has been assigned priority. However, note that a volume cap of 50 lots is in operation.

A new bid of 111-03 for 110 contracts will be allocated in this way under the pro-rata algorithm with priority order and a volume cap:

- Trader 1** sells 70 contracts (50 priority + 20 pro-rata)
- Trader 2** sells 8 contracts
- Trader 3** sells 32 contracts

**Pro-Rata Algorithm with Priority Order, a Minimum Volume Requirement, and a Maximum Volume Cap**

In order to prevent small orders from taking priority over large volume orders, a minimum volume parameter can be specified. As with the volume cap, this is configurable on a per contract basis with separate values being available for outright and spread markets. A side effect of a minimum volume parameter is that it can result in situations where the best price in a market is not provided by the priority order.

**Example 4 - Given these orders:**

<b>Trader 1</b>	December 10-year T-note futures	Sell 100 contracts @ 111-03	10:01 a.m. (Priority)
<b>Trader 2</b>	December 10-year T-note futures	Sell 20 contracts @ 111-03	10:02 a.m.
<b>Trader 3</b>	December 10-year T-note futures	Sell 80 contracts @ 111-03	10:03 a.m.

Because Trader 1 has made the new best price, and the order meets the 20 contract minimum volume requirement, this order has been assigned priority status.

A new sell order arrives

<b>Trader 4</b>	December 10-year T-note	Sell 10 contracts @ 111-02	10:05 a.m. futures
-----------------	-------------------------	----------------------------	--------------------

Although Trader 4 has made a new best price, this order for 10 contracts does not meet the 20 contract minimum volume requirement, so a new bid of 111-03 for 110 contracts will be allocated in this way under a pro-rata algorithm with priority order, a 20 contract minimum volume requirement, and a 50 contract maximum volume requirement:

- Trader 1** sells 67 contracts (50 priority + 17 pro-rata)
- Trader 2** sells 7 contracts
- Trader 3** sells 26 contracts
- Trader 4** sells 10 contracts

# Entering and Managing Orders

## Submitting Orders

Using their trading applications, traders may submit orders to e-cbot at any time from the start of the Pre-Open period until the relevant market closes. These orders may be for any contract month, spread, or option strike.

The trading host checks, validates, and time stamps each order. All orders (with the exception of market orders and contingent multiple orders) must specify the price of the contract month or spread and the quantity to be bought or sold at that price. Orders that do not trade to completion and are not of a type that require immediate completion are stored in the central order book. The order time stamp value is used for subsequent order prioritization in contracts where the price and time trade-matching algorithm is employed and where implied spread trading occurs.

Individual members may either execute their own trades or service trades for clients if they are authorized brokers. Clerical employees of member firms may enter non-discretionary orders on behalf of clients. Account allocation can be achieved at the time of the trade or post trade through the CME/CBOT Common Clearing Link provided that any post-trade allocation is in

accordance with CFTC regulations and also follows the specific guidelines of the Common Clearing Link.

## Automated Price Injection Models (APIM)

It is exchange policy that all automated price injection models must be registered with the CBOT. All registered automated price injection models must meet specific price injection model conformance requirements in addition to the standard conformance requirements established for all trading software that accesses e-cbot.

APIMs fall within, but are not limited to, the following description:

1. Interfaces with the LIFFE CONNECT® API
2. Determines the requirement and sends order handling messages to the trading host without necessarily requiring the intervention of an individual

## Dynamic Price Limits

All incoming orders are subject to dynamic price limits. These are in place to prevent the execution of orders with manifest pricing errors. Futures and options contracts are treated differently.

## Futures

For futures contracts, price limits are calculated from a base level which itself is calculated

from a combination of the last trade and the mid-point between the bid and offer for the most actively traded front month and for the back contract months with reference to spread relationships with the front month.

### **Options**

For an individual options contract, the price limits are calculated using an options pricing model based on fair value calculations.

### **Monitoring**

The dynamic price limits are monitored throughout the trading day and may be adjusted by Market Operations officials depending on market conditions. Orders submitted that fall outside price limits will be rejected by the trading host, and the originating trader will be notified through his or her trading application. Price limits apply during the market trading period. For futures contracts, they are also applied during the Pre-Open period.

### **Order Types**

- **Limit orders** are executed at the price stated or better. Unless otherwise specified (see GTC, GTD, and IC orders), any residual volume from an incomplete limit order is retained in the central order book until it is withdrawn or traded (or cancelled automatically at the end of the trading day).
- **Market orders** are executed at the best price(s) available in the market when the order is received until all available volume at that price has been traded. Any remaining portion of the order then executes at the next best

price and so on, until all the order volume has been filled. Any residual volume from an incomplete market order is immediately cancelled. Market orders will be rejected if the market is not open.

- **Stop Market and Stop Limit orders** are available at the Trading Host. Buy Stop orders will be triggered by a trade at or above the Stop Trigger price and Sell Stop orders will be triggered by a trade at or below the Stop Trigger price. Higher bids/lower offers, as well as ex-pit trades and strategy leg prices, will not activate Stop Orders. For a Stop Market Order, once the Stop price is triggered, the order is entered into the Trading Host as a Market order. This order will react to the market as a regular Market Order. For a Stop Limit Order, once the Stop price is triggered, the order is entered into the Trading Host as a Limit order at the trigger price. Stop Orders are kept in separate Host Level “queues” and viewed only by originating trader (and MTM). Valid order time types for Stop Orders are Good for Day and Good ‘til Cancelled.
- **Market Making orders (MMO)** offer traders a streamlined process to make two-sided markets in CBOT products. MMOs allow an ITM designated with MMO capability to simultaneously submit bids and offers into a single options series or futures month. MMOs are submitted in batches which allow bids and offers to be entered into different series within a contract concurrently. All MMOs in a batch must be for the same contract (i.e., OZB). The maximum number of MMOs permitted in each batch is configurable up to 65, the minimum is 1.
- **Clip orders** are designed to provide more functionality for traders that are hedging between two markets. “Clips” are a series

of quantity levels that allow the trader to define specific amounts to be traded. The trader specifies a ratio, and the ratio defines the Clip Size. Clip orders can be described as an Immediate or Cancel order with a time-out value. If the order Clip Size is not fully matched the remaining volume is cancelled. Clip Orders will be available for 30 Year Treasury Bond Futures and 10, 5, and 2 Year Treasury Note Futures.

- **Market on Open (MOO) orders** may be submitted to the trading host during the Pre-Open period. MOO orders will be executed at the calculated opening price at Market Open. Where a MOO order has traded in part at Market Open, the residual volume will be converted to a limit order at the calculated opening price of that order. If no trading takes place at Market Open, the MOO order will trade with any matching MOO order at the mid-price of the opening bid and offer (including bids and offers implied from related spread markets where applicable). Any residual MOO order volume will then convert to a Limit order at this mid-price. Where no bid or no offer exists at Market Open, the MOO order will be cancelled by the trading host. MOO orders can be entered as standard or Persisted. An expiration date can also be entered for Persisted MOOs.
- **Contingent Multiple (CMO) orders** contain two or more 'component' orders. The trading of any component is contingent on being able to trade fully all components within the contingent order. Contingent orders allow the trading of spreads across two separate contracts, therefore allowing traders to submit inter-contract spreads to e-cbot. They cannot be submitted during the Pre-Open period, as all order components must exist in open markets.

In addition, there are a number of designated orders which can be of one or more of the above order types.

- **Good 'til Cancelled (GTC) orders** remain in the central order book until they trade, are withdrawn by the submitting trader, or the contract expires. GTC orders may be entered with or without a cancellation date. If they have an accompanying date, they will automatically be cancelled by the system at the end of trading on that date. GTC orders cannot be transferred to another trader. In the event of a trading host failure, a trader may withdraw GTC orders by telephoning the exchange and instructing Market Operations officials accordingly. GTC orders are limit orders.
- **Good 'til Day (GTD) orders** remain in the central order book until they either trade, are withdrawn by the submitting trader, or the day ends. GTD orders may be transferred to another trader. In the event of a failure, a trader may withdraw GTD orders by telephoning Market Operations and instructing exchange officials accordingly. GTD orders are limit orders.
- **Immediate and Cancel (IC) orders** are executed against any existing orders at the stated price or better, up to the volume of the IC order. Any residual volume from the IC order is then immediately cancelled. ICs can be added to limit orders and will be added to market orders automatically if no other designation is made.
- **Complete Volume (CV) orders** are only executed if there is sufficient volume available at the stated price or better for them to execute fully. Otherwise the entire order is cancelled. CV orders can be limit or market orders.

- **Minimum Volume (MV) orders** allow traders to state a minimum volume for an order. If the minimum volume cannot be executed immediately, the whole order is cancelled. Any residual volume from an incomplete MV order is retained in the central order book and will trade as normal (i.e., with no further minimum volume constraints). MV orders can be limit or market orders.

At the order entry level, three main attributes may be attached to an order:

- the order type
- the time validity qualifier
- the quantity qualifier

Order attributes managed by e-cbot are listed in the following table:

Order Type		Price	Volume	Minimum Volume	Complete Volume	Immediate and Cancel
Limit	Normal	~	~	~	~	~
	Good 'til Cancelled	~	~			
	Market on Open		~			
Market	Normal		~	~	~	
Contingent multiple order	Each component*	~	~			

\*For a Limit component, price and volume; for a Market component just the volume can be submitted.

### Delta Protection

Delta Protection functionality offers traders a degree of protection from being traded on multiple orders. Delta Protection functionality computes a cumulative delta position on a contract or expiry basis which is then updated whenever an order, which encompasses delta protection, trades. When the delta position exceeds the trader set delta limit, an action is taken to warn the trader or, optionally, have all of the traders orders pulled in the same contract or expiry.

### Recognized Spreads on e-cbot

e-cbot powered by LIFFE CONNECT®, widely regarded as the most sophisticated electronic derivatives trading platform available, supports more spreads than any other platform. Full details concerning the spreads currently available for trading on e-cbot can be found on the e-cbot web site ([www.cbtc.com/ecbot](http://www.cbtc.com/ecbot)), or in the e-cbot Reference Manual.

### Delta Neutral Option Trades

e-cbot supports functionality which allows traders to delta hedge option trades with futures: i.e., to trade simultaneously an option against the underlying futures. This allows traders to hedge an option position with the related futures. Traders can choose the delta value for volatility orders submitted. The volume of the underlying leg is calculated by the trading host based on the submitted delta. The futures leg price and volume is reported to the market with a tag to denote it is a delta neutral option trade.

### Reduced Tick Spreads

e-cbot supports the functionality to provide spreads in a tick size outside of the underlying legs. This allows the CBOT to list reduced tick spreads as a spread market, rather than a separate product. The spread does not produce implied prices, due to the difference in tick size, and may be traded with a separate matching algorithm. There are no limitations on which valid contract months may be spread against each other.

### Inter Commodity Spreads

Inter Commodity Spreads (ICSs) are separate listed contracts on e-cbot. Both legs of an ICS will be futures contracts that have no interaction with the outright leg markets. Features of Inter Commodity Spreads include no legging risk, spread trading using ratios, and pricing relative to the previous day's settlement price. Expiry months of legs and ratio are chosen by the strategy creator. ICS markets are not available in Pre-Open. Good 'til Cancelled (GTC) orders are not permitted in ICS markets.

### Order Management

Traders have the ability to do the following through their front-end trading applications:

#### **Individual Orders:**

- submit orders
- withdraw orders
- revise orders – the trading host allows volume, price and Good 'til Cancelled (GTC) dates to be amended

- transfer orders – individual traders may nominate a replacement individual trader mnemonic (ITM)  
(note: not all ISVs and member developers offer replacement trader support)
- view orders – see an order book listing active and traded orders

#### **Batch Orders:**

- submit up to 16 outright limit orders in the same contract in a single message
- revise up to 64 outright limit orders in the same contract in a single message
- pull up to 64 outright or spread limit orders in the same contract in a single message

It is important to bear the following in mind:

- crossing is not permitted between orders within a single submission or revision message
- on updating a bid and ask, the worsening prices will be revised first in order to avoid the inadvertent matching of orders

### Wholesale Transactions

The CBOT has designated 5-year and 10-year Interest Rate Swap futures as eligible for wholesale transactions. This trading facility allows eligible market users to arrange to transact 2,000 or more swap contracts or 500 or more agency contracts in a single transaction and for one price. For details of the requirements pertaining to wholesale transactions, refer to the Wholesale Trading Notice of July 7, 2003 which is posted on the CBOT web site ([www.cbot.com](http://www.cbot.com)).

### **Termination of a Trading Session and Subsequent Restart**

Trading on e-cbot powered by LIFFE CONNECT® may be suspended if circumstances are preventing the orderly conduct of business. Market Operations will send out a message to all market users informing them of such a suspension. In the event that trading on e-cbot in one or more contracts is restricted, suspended, or halted, the session will be restarted when circumstances dictate that business may resume in an orderly manner.

### **Dow<sup>SM</sup> Price Limits and Trading Halts**

CBOT® Dow Jones Industrial Average (DJIA<sup>SM</sup>) and CBOT® mini-sized Dow<sup>SM</sup> futures and options on futures have price limits and related trading halts. The trading halts are coordinated with trading halts at the primary securities market, the New York Stock Exchange (NYSE). These trading halts are referred to as circuit-breakers.

Successive NYSE trading halts are triggered when the DJIA hits threshold levels, specified in index points and calculated at the end of every quarter, that represent 10%, 20%, and 30% of the average daily closing value of the DJIA in the preceding calendar month, with rounding to the nearest 50 points. New quarterly circuit-breaker levels are announced on January 1, April 1, July 1, and October 1.

For detailed information, visit the CBOT web site at [www.cbot.com](http://www.cbot.com).

### **Error Trade Policy**

The Chicago Board of Trade modified the Error Trade Policy in 2005. The modifications are intended to strike a better balance between trade certainty and price integrity in the CBOT electronically traded markets.

The Chicago Board of Trade significantly expanded the no-bust ranges and also amended the reference prices, which widen parameters even farther. The reference price on a downside (upside) move will never be higher (lower) than an equivalent market low (high) during the time period that prices in the two markets are out of phase.

The e-cbot trading platform powered by LIFFE CONNECT® provides functionality such as dynamic price limits, which will reduce the occurrence of “fat finger” type errors and also mitigate the impact of certain other scenarios that can affect the price integrity of the contract.

This policy authorizes the Market Operations staff to temporarily halt markets in extraordinary circumstances.

Additionally, market participants should be aware of the risks associated with the entry of market and stop orders. If there is a significant order imbalance or momentary lack of liquidity at the time such orders are executed, the orders may be filled at prices substantially different from the last trade price or the stop order price. These risks can, of course, be mitigated by using limit orders.

Chapter Five

# The Trading Day

The following diagram shows the various periods of the trading day. Different contracts have different opening and closing times. Current trading hours for e-cbot contracts are available on [www.cbtc.com](http://www.cbtc.com).

API Messages		Trading Day Period	Market Mode Messages
(Sent to all trading applications that have initialized API)	(Sent to all traders subscribed to the relevant market)	Outside Trading Day	API Initialization followed by standing data requests permitted
Day Start		Day Start	Log-on and subscribe to market permitted
Market Enabled		Pre-Open	Order submission and revision permitted but no trades take place
Market Open	Uncrossing algorithm	Trading, order handling and settlement	
Trading Day	Market Trading		
Market Closed		Pre-Close	
Day End		Market Close Period	Issue settlement prices
		Day End Period	All sessions are logged out
		Outside Trading Day	Host inaccessible

**Outside the Trading Day**

Prior to the start of the trading day, for a specified period of minutes (depending on the contract), trading applications will be able to initialize the API.

**Day Start**

A message is transmitted a set number of minutes (depending on the contract) before the Pre-Open period which is visible to all subscribed e-cbot market users. At this time traders are allowed to log-on to e-cbot, check communications, and view market data.

**Pre-Open**

The Pre-Open message is issued to all logged-on users. All order types, except market orders, are valid, including MOOs, which are only valid during this period. The market depth data created by these orders can be viewed. However, no actual trading takes place. Indicative opening prices are displayed.

**Market Open**

Market orders can now be entered in addition to Limit orders while MOO orders can no longer be submitted. Trading continues for a set period of time.

**Settlement**

Settlement procedures vary by product. Please call Market Operations at 312-347-4600 for more information.

**Market Close**

At this time, trading ceases and all outstanding orders (except GTCs) are deleted from the central order book. No new orders, editing of outstanding orders, or withdrawals are accepted. Market Operations calculates closing prices and publishes them to all customers and quote vendors through the market feed.

**Day End**

At Day End, traders can view settlement/closing prices. At the end of this period, all traders are automatically logged-off e-cbot.

# Member and User Setup

Member and user setup on e-cbot is facilitated by the Functional Member Readiness team. The CBOT requires all firms to nominate a user access contact (UAC) who will be allocated a system password and be given access to the e-cbot user access web site that enables the UAC to request ITMs and user IDs.

e-cbot users log-on to the e-cbot trading host using an ITM Key and a password. The term Individual Trader Mnemonic – which the CBOT has adopted as part of the LIFFE CONNECT® platform – can cause confusion because ITMs need not be restricted to individual traders. Multiple e-cbot users may use the same ITM to access the e-cbot trading host. ITMs can be created and grouped in different categories according to the firm's business needs. For example, ITMs might be set up for customer order routing, specific trading desks or sales desks, individual traders, etc.

Each ITM has a corresponding key file for logging-on to the trading system. ITM keys are generated by the e-cbot key management facility at the request of a firm's UAC. The UAC downloads the key from the user access web site, decrypts the key, and makes sure that it is installed on the necessary hardware.

Through the user access web site, UACs are required to register a responsible person and a backup responsible person with the exchange for each ITM. For example, a responsible person may be an individual trader or a supervisor overseeing either a trading desk or orders submitted through an order routing system. The same individual may be the designated responsible person or backup responsible person for more than one ITM. However, depending on the nature of a member's business, the CBOT may limit the number of, or require additional, ITMs and responsible persons.

The responsible person registered with the exchange for an ITM is the first point of contact for all orders submitted under the responsible person's ITM, including any trades submitted through an order routing system. The responsible person must have the authority to modify or withdraw any order submitted under his or her ITM at the request of the CBOT and must have the ability to immediately identify the source of any order.

## **Master Trader Mnemonic**

Master Trader Mnemonic (MTM) functionality will enable an ITM that is designated by a Firm as an MTM, to monitor, revise and cancel orders of

designated ITMs. MTMs will also have log-off and lockout authority for these designated ITMs. Following log-off all orders submitted by e-cbot User IDs under that ITM excluding GTCs are transferred to the nominated replacement ITM. If there is no nominated replacement, the orders are deleted. The ITM can then log straight back in. Following lockout all orders submitted by e-cbot User IDs under that ITM including GTCs will be cancelled. These orders are not transferred to a nominated replacement ITM and the ITM cannot log back in. Only e-cbot Market Operations can unlock a locked out ITM.

### **User IDs**

Registered e-cbot user IDs are assigned by the exchange upon request from a firm's UAC and are required for each of the following types of users:

1. CBOT member or delegate member
2. Non-member proprietary trader for CBOT member firm
3. Non-member clerk of member or member firm
4. Non-member employee of 9B.04 Registrant (A primary clearing member may authorize the extension of a direct e-cbot connection to one or more of its non-member customers or affiliates, who are registered with the exchange as users and for whom no other clearing member has authorized a direct connection.)

An e-cbot user ID is required for all orders. e-cbot user IDs for customers are not assigned by the exchange and must begin with 99.

For further details about the member and user setup processes, including the use of ITMs and e-cbot user IDs, contact Functional Member Readiness at 312-341-7955 or [Electronic\\_Trading@cbot.com](mailto:Electronic_Trading@cbot.com).

# Implied Spread Trading

## Spread Trades

Traders may execute spreads comprising combinations of CBOT contract months as defined by the exchange (a separate market is created for each spread). An exchange maintained algorithm calculates the traded price of each leg. In addition, implied trading functionality is provided with respect to certain spreads traded on e-cbot. Both ‘implied-in’ and ‘implied-out’ prices are generated.

For those explicit spread markets where implied trading functionality applies, the relevant outright contract months will generate implied-in prices to the explicit spread market. Where these implied-in prices represent the best price for a spread, they will be traded subject to the trade matching algorithm which applies to the contract in question.

For outright contract month markets, the interaction of an explicit spread order and a relevant outright contract month order will generate an implied-out price in the other outright contract month. Where an implied-out price generated by the trading host is better than the price available in the outright contract month, the order will be traded, again subject to the relevant trade matching algorithm, provided the other leg of the explicit spread can still be traded at the same time.

## Dissemination of Implied Prices

The trading host generates both implied-in and implied-out prices, but only implied-out prices and only those which represent the current best market price are distributed through the API. Similarly, implied-out prices are disseminated through the market feed while implied-in prices are not. However, all ISV software is conformed to calculate and display implied-in prices. Implied-out includes calendar spreads, call/put spreads, and straddles. Implied-in includes all of the above and butterflies.

### *Implied-in Pricing, 10-Year Treasury Note Calendar Spread*

	Bid	Offer
JUN	105-270	
SEP		105-200
JUN/SEP	0-070 Implied	

In this example, two explicit quotes are entered. This creates an implied-in spread bid of 7/32nds. This price is calculated and held in the trading host. An incoming spread that is offered at or below this price will automatically trade against the explicit outright legs that formed the implied spread.

**Implied-out Pricing, 5-Year Treasury Note Calendar Spread**

	<b>Bid</b>	<b>Offer</b>
DEC	101-07 1/2 Implied (100)	101-08 (100)
MAR	101-17 1/2 (100)	101-18 Implied (100)
DEC/MAR	-10 (100)	

In this example, two explicit outright orders have been entered in addition to an explicit spread. The implied quotes in the outrights are generated by the trading host, as noted. Any trade with the implied prices will automatically facilitate the spread trade with the explicit leg.

**Implied Pricing, Fed Funds Calendar Spread**

	<b>SEP</b>	<b>OCT</b>	<b>NOV</b>
Bid	99.020	98.980	98.920
Ask			
Spread	Sep/Oct	0.040	Ask
	Oct/Nov	0.060	Ask

Where implied quotes trade with each other, a form of limited chaining may prevent market display of seemingly ‘crossed’ markets (bid>ask). This also leads to situations where incoming explicit orders take priority over improved implied quotes. This situation is only created if implied quotes are not matched with explicit prices. Explicit prices cannot be traded through.

In the above example, explicit prices are entered in Sep, Sep/Oct and Oct/Nov. The Nov bid is not shown, as its ‘parent’ is an implied-out price. However a Nov ask at a price at or below 98.920 will trade with the hidden implied price.

**Implied-in Pricing, CBOT® mini-sized Dow<sup>SM</sup> Butterfly Spread**

	<b>Bid</b>	<b>Ask</b>
MAR	9480	9481
JUN	9470	9472
SEP	9460	9461

$$\text{Bid} = (80-72) - (72-60) = -4$$

$$\text{Ask} = (81-70) - (70-61) = +2$$

An implied-in price for a butterfly spread will be calculated from explicit outright leg prices.

Therefore, the Mar/Jun/Sep implied butterfly is -4 bid/+2 offered. Any implied-out leg prices will be ignored in this calculation. They can also be traded through. An implied-in butterfly will trade with matching explicit butterfly quotes. Any price improvement will only be given to the incoming order that triggers the trade, whether it is a butterfly quote or an incoming leg price. In the above example, an incoming explicit butterfly quote of +3 bid would trade at the offer price: i.e., +2.

# Settlement Prices and the Clearing Process

## **An Overview**

The trading host sends executed trade details into the CME/CBOT Common Clearing Link real-time throughout the trading day.

The CME/CBOT Common Clearing Link uses an open architecture clearing system that provides electronic dialogue between member firm internal bookkeeping systems and the exchange clearing and trade management applications. This real-time operation enables market participants to manage their positions and risks with detailed position keeping, which allows for balancing between unit accounts in position keepers' books and those managed by the clearing house.

The CME/CBOT Common Clearing Link can be used to perform the following clearing operations:

- postings and give-ups
- position keeping by account
- management of an account base (opening, modification, closure)
- actions on positions (exercise, abandonment, assignment)

- adjustments (corrections, transfers, offsets)
- calculation of margins and premiums
- calculation of initial margins (SPAN® method)

## **Daily Settlements**

Settlement prices are the official prices for all futures and options contracts at which all open positions are revalued for the purposes of profit and loss and subsequent margin calculation at the end of the business day. The margining system is the means by which the CME/CBOT Common Clearing Link controls the risk associated with a clearing member's position on a daily basis.

The prices established will be transmitted to the CME/CBOT Common Clearing Link. In the event that the CME/CBOT Common Clearing Link considers that these prices do not correctly reflect the true value of the contracts within the market, it may require the market to amend prices as appropriate.

Final settlement prices will be displayed on e-cbot. However, settlement price changes are not reflected after 4:35 p.m., Chicago time.





### **Business Development**

141 W. Jackson Boulevard  
Chicago, IL 60604-2994  
312-341-7955 • fax: 312-341-3027

### **New York Office**

One Exchange Plaza  
55 Broadway, Suite 2602  
New York NY 10006  
212-943-0102 • fax: 212-943-0109

### **Europe Office**

St. Michael's House  
1 George Yard  
London EC3V 9DH  
United Kingdom  
44-20-7929-0021 • fax: 44-20-7929-0558

### **Latin America Contact**

52-55-5605-1136 • fax: 52-55-5605-4381

[www.cbot.com](http://www.cbot.com)

©2006 Board of Trade of the City of Chicago, Inc. All rights reserved.

The information in this publication is taken from sources believed to be reliable. However, it is intended for purposes of information and education only and is not guaranteed by the Chicago Board of Trade as to accuracy, completeness, nor any trading result, and does not constitute trading advice or constitute a solicitation of the purchase or sale of any futures or options. The Rules and Regulations of the Chicago Board of Trade should be consulted as the authoritative source on all current contract specifications and regulations.

LIFFE CONNECT®, the LIFFE CONNECT logo, is a trademark of LIFFE Administration and Management and is registered in Australia, Hong Kong, Singapore, the United States, and the United Kingdom, is a registered Community Trade Mark, and is the subject of a pending application for registration in Japan.

"Dow Jones<sup>SM</sup>," "The Dow<sup>®</sup>," "Dow Jones Industrial Average<sup>SM</sup>," "DJIA<sup>SM</sup>" are service marks of Dow Jones & Company, Inc. and have been licensed for use for certain purposes by the Board of Trade of the City of Chicago, Inc. (CBOT<sup>®</sup>). The CBOT futures and futures options contracts based on the Dow Jones<sup>SM</sup> Averages are not sponsored, endorsed, sold, or promoted by Dow Jones<sup>SM</sup>, and Dow Jones<sup>SM</sup> makes no representation regarding the advisability of trading in such contracts.

"Dow Jones<sup>SM</sup>," "AIG<sup>®</sup>," "Dow Jones-AIG Commodity Index<sup>SM</sup>," and "DJ-AIGCI<sup>SM</sup>" are service marks of Dow Jones & Company, Inc. and American International Group, Inc., as the case may be, and have been licensed for use for certain purposes by the CBOT<sup>®</sup>. The CBOT Dow Jones-AIG Commodity Index futures and futures options are not sponsored, endorsed, or sold by Dow Jones, AIG, American International Group, or any of their respective subsidiaries or affiliates, and none of Dow Jones, AIG, American International Group, or any of their respective subsidiaries or affiliates, makes any representation regarding the advisability of investing in such products.

EM 35-2R2 11.01.10000 05-110120