Series 3

National Commodities
Futures Representative

Session 1 of 3

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About the Series 3

120 multiple-choice question exam

- 2.5 hours allowed
  - Part I = 85 General Knowledge (60/85 = 70.6%)
  - Part II = 35 Rules and Regulations (25/35 = 71.4%)
- 70% or better is required on both parts

Examination Section Analysis

Part 1: General Knowledge – 85 questions total	**Questions**
Futures Trading Theory and Terminology	16
Futures Margins, Option Premiums, Price Limits, Futures Settlements, Delivery, Exercise, & Assignment	15
Types of Orders, Customer Accounts, Price Analysis	11
Basic Hedging, Basis Calculations, Hedging Futures	9
Hedging Financial and Monetary Futures	10
Speculation, Leverage, Spreading	3
Speculation in Commodity Futures	8
Speculation in Financial and Monetary Futures	8
Option Hedging, Speculation, Spreading	5
Part 2: CFTC/NFA Regulations – 35 questions total	

The Futures Contract, Exchanges, Margin and Equity

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The Futures Contract

Evolved from the "cash forward" contract

Like a cash forward contract, both parties to a futures contract have obligations

The BUYER or LONG position Obligation to TAKE delivery	The SELLER or SHORT position Obligation to MAKE delivery

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Futures Contract vs. Cash Forward

Unlike a cash forward contract, however, a futures contract:

- ❖ Is for a standard quantity per contract
- ❖ Calls for delivery from locations and at times specified in exchange rules (**regular for delivery warehouses**)
- ❖ Is non-personal
- ❖ May be offset:
  - Long positions ***liquidated*** by selling
  - Short positions ***covered*** by buying

If assigned, some exchanges force acceptance, known as being "stopped"; others allow closing trades

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Futures Exchanges

Exchanges will:

- ❖ Provide a place to trade
- ❖ Set contract terms which must be approved by CFTC
  - Delivery size
  - Basis grades (may allow delivery of superior grade – for a premium; or inferior – at a discount)
  - Time of delivery
  - Place of delivery; approved locations known as "Regular for delivery warehouses"
  - Margin requirements (both initial and "variation" or maintenance)

Exchanges will not:

- ❖ Own any contracts or commodities
- ❖ Buy or sell contracts
- ❖ Set prices of contracts

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Benefits of Futures Exchanges

- Allows producers and users of the cash commodity to hedge (establish of a futures position that is opposite to the cash position)
  - Substantially reduces risk of price fluctuations
  - Enables producers and users to obtain credit at more favorable rates
  - Reduces the price of the commodity to the public
- Provides a central point to which to channel the risk capital of speculators which will cause higher liquidity and narrower price spread
- Provides a focal point where all buy and sell orders are sent (price discovery)
- Price dissemination
- Provides an alternate channel for marketing the cash commodity

Traders and Trading

Types of traders:
- Floor Brokers
  - Execute orders on behalf of others
  - Work for firms or independent
- Floor Traders (aka *locals*)
  - Trade for their own account
  - May also trade for a major firm's proprietary account

Types of trading:
- Day trading
  - Trade and offset the same day
- Position trading
  - Establish longer open positions

Contract Sizes

Some contract specifications to know:

Grains:	5,000 bushels
Treasury Bonds and Notes (Long Term Financials):	\$100,000 par value Quoted as percentage of par and $^1/_{32}$ 1% of \$100,000 is \$1,000 and $^1/_{32}$ of \$1,000 is
Treasury Bills and Eurodollars (Short Term Financials):	\$1,000,000 par value 13-week (3 months) Quoted in "basis points" 1 basis point equals There are 100 basis points in a point

The Clearinghouse

The clearinghouse is an agency associated with an exchange which guarantees all trades, thus assuring contract delivery and/ or financial settlement

The clearinghouse becomes the buyer for every seller, and the seller for every buyer, eliminating counter-party risk

Exchange members collect and deposit funds with the appropriate clearinghouse

Margin

Margin is established by the Exchange and is the same percentage for longs and shorts

Hedge margin is usually lower than speculation margin

Calculated daily based on the contract's settlement value

Maintenance margin

- ❖ If equity falls below the maintenance level, the client is required to bring equity back to original margin

Margin

Required on all positions; a "good faith deposit," not part of cost

Types:

- ❖ Initial: to establish a position
- ❖ Maintenance (Variation): to keep a position

Equity:

- ❖ Total equity in a position is equal to the money deposited, net of withdrawals, called the Account Cash Balance; plus or minus the gain or loss to date, called the Open Trade Equity (OTE)

Account Cash Balance +/- OTE = Total Equity

Equity Example (1)

Wheat contracts: Initial = $.80 per bushel, Maintenance = $.60 per bushel

Long 1 May Wheat @ $6.00

Item	Deposit or withdrawal	Account Cash Balance	O.T.E.	Equity
Deposit initial margin $.80 x 5,000 bushels				
May Wheat to $5.90 Loss of $.10 x 5,000				
May Wheat to $5.75 Loss of $.25 x 5,000				
Receives call for variation margin. Must bring equity back to initial margin.				
May Wheat to $5.95				

May only withdraw that portion of equity which is greater than initial margin. Excess equity may also be used to meet margin on new positions – called "pyramiding"

Equity Example (2)

Gold contracts: Initial = $70.00 per ounce
Maintenance = $50.00 per ounce
Contract size = 100 troy ounces

Short 1 Dec Gold @ $1,400.00

Item	Deposit or withdrawal	Account cash balance	O.T.E.	Equity
Deposit initial margin				
Dec Gold to $1,425				

Equity Example (3)

S&P index @ 1,305.5

Contract size (multiplier) = $250

Margin = $25,000 per contract

A client is **short 5 S&P @ current market price** and deposits the margin requirement. Subsequently, S&P settles @ 1,295.5. What is the equity in the customer's account based on this settlement price?

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Speculation and Rates of Return

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Speculators

Buy and sell for the purpose of making profit

Will take a long position (buy futures) when they anticipate a rise in prices

Will take a short position (sell futures) when they anticipate a decline in prices

Speculators add liquidity to markets and reduce price volatility

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Rate of Return (1)

Customer Long 1 May Wheat @ 5.10
Offsets @ 5.50
Commission = $50.00 (round turn) Initial margin: $.50 per bushel

<u>Solution:</u>

Bought: Gross profit:
Sold: Commission:
Profit: Net profit:

Original Investment:

Rate of Return:

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Rate of Return (2)

Customer is Short 3 Jul Corn @ 6.75
Offsets @ 7.05
Commission = $25.00 (round turn) Initial margin: $.60 per bushel

Solution:
Sold: Loss:
Bought: Commission:
Loss: loss per contract:

Original Investment:

Rate of Return (loss):

Rate of Return (3)

Soybean is currently trading @ 1260 cent/bushel
Margin is $3,500 per/contract
Contract size is 5,000 bushels

An investor establishes a long soybean position at the current market price, and liquidates his position when soybean prices increased by 5%. What is the rate of return for this investor?

Established: Profit per bushel:
Times: Times:
Profit: Gross profit:

Original Investment:

Rate of Return:

Profit or Loss (4)

Investor expects yield on T-Bonds to rise.

Customer takes position 10 Sep T-Bonds @ 88-24
Offsets @ 90-20
Commission = $40.00 (round turn) Amount of gain or loss?

Solution:
Opens (Long or Short ?) @: Total:
Offsets @: Commission:
Profit or Loss ?:

Profit or Loss (5)

Investor expects the interest rates to decline and takes appropriate positions in 4 T-Bill contracts @ 92.05. He later offsets 3 contracts @ 93.04, and liquidates the last one @ 93.14. What is the total profit or loss for this investor?

Open long @ Long @
Close @ Close @
Profit Profit
Times Times
Times Times
Equals Equals

Price Analysis

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Price Analysis

Fundamental Analysis

- ❖ Focuses on the relationship between the commodity available for delivery and its price
- ❖ For grains, supply includes commodity in elevators, in transit (on barges), and on docks at loading centers; but excludes grain still on farms
- ❖ If supply held constant and demand increases – would prices go up or down?
- ❖ If demand held constant and supply increases – would prices go up or down?

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Price Analysis

Fundamental Analysis – Bonds and Currencies

- ❖ When considering the relationship between bond prices and interest rates
  - It is an inverse relationship
  - If one expects interest rates to rise, one would bonds
- ❖ Likewise, the relationship between the U.S. dollar and foreign currencies is an inverse one
  - If one expected the Dollar to decline in value, one would the Euro
  - Gold can be assumed to be a surrogate for foreign currencies
    - If one were bullish on the Dollar, one would gold contracts

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Price Analysis

Technical Analysis

- ❖ Considers the relationship between "open interest" and prices
- ❖ Resistance and support levels
- ❖ Patterns, including the "head and shoulders" pattern

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Volume and Open Interest

First trade: A buys 10 contracts from B

Accumulated volume: Open interest:

Second trade: B buys 10 contracts from C

Accumulated volume: Open interest:

Third trade: C buys 10 contracts from A

Accumulated volume: Open interest:

Dealer A		**Dealer B**		**Dealer C**	
Long	Short	Long	Short	Long	Short

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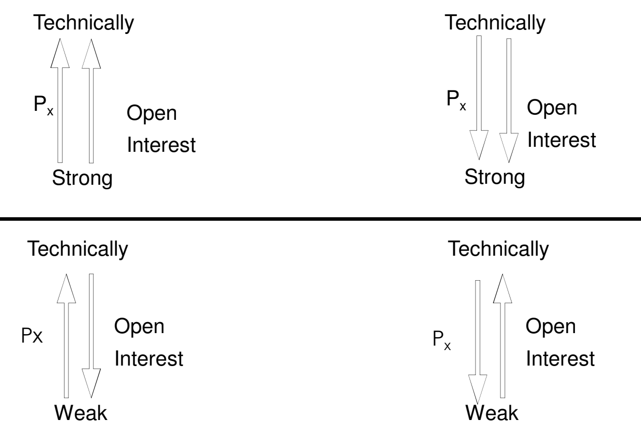
Effects of Open Interest on Prices



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Technical Analysis (cont.)

Support
- ❖ Level at which prices tend to stop falling

Resistance
- ❖ Level at which prices tend to stop rising

Congestion
- ❖ Prices trapped in a trading range

Breakout
- ❖ When prices break through an area of support or resistance
  - Breakout of an area of support is a bearish indicator
  - Breakout of an area of resistance is a bullish indicator

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Technical Analysis (cont.)

Breakout
- ❖ In order to profit on a breakout one could:
  - enter sell stop orders below a support level (or buy puts), or
  - enter buy stop orders above a resistance level (or buy calls)

81.50 -- Resistance

79.70 -- Support

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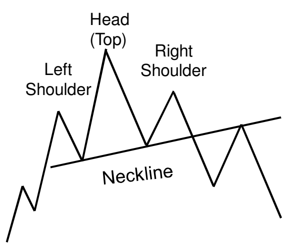
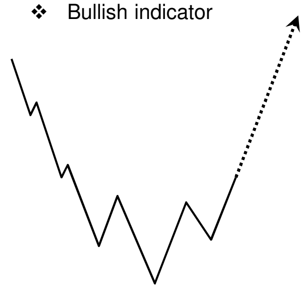
Head and Shoulders Patterns

Head and Shoulders (Top)
- ❖ Reversal of an trend
- ❖ Bearish indicator



Inverted Head and Shoulders (Bottom)
- ❖ Reversal of a trend
- ❖ Bullish indicator



Stock Index Futures

Types of risk
- ❖ Non-systematic Risk
  - Individual stock risk
  - A combination of industry risk and company risk
  - May be reduced through diversification
- ❖ Systematic Risk
  - Overall market risk
  - Cannot be eliminated through diversification
  - May be hedged

Index Futures address systematic risk and are used to hedge positions

Contracts use a multiplier to convert an index value or average into a dollar value

Some Indices Used

Index Average	Where Traded	Multiplier	Tick value
DJIA	CBOT	$10	$10 or 1 pt.
S&P 500	CME	$250	$25 or .10 pt.
NASDAQ 100 Index	CME	$100	$50 or .50 pt.
Value Line	KCBT	$25	$12.50 or .50 pt.

Settled in cash

Application

A customer places an order to buy 3 December Major Market Index futures contracts. The contract size is $250 times the index price. The margin requirement per contract is $4,000 initial and $2,500 maintenance. The customer deposits the required margin in his account. The customer's order is filled and a long position of three contracts is established at 507.30. That night, the settlement price for the December futures contract is 505.80. Calculate the current equity in the customer's account.

Solution

Long @	Cash balance:
Settlement:	Open trade equity:
Unrealized loss:	Equity per contract:
Times:	Times:
Unrealized loss:	Total equity:

Commodity Spreads

Created by purchasing one futures contract selling another

- Intramarket or InterDelivery
  - Same commodity, same exchange, different months
- Intermarket
  - Same commodity, different exchange, same months
- Intercommodity
  - Different commodities (corn/wheat, gold/silver,etc)
- Commodity Product Spreads
  - Investor take a position in the raw material, and an opposite position in the by-products
  - The Crush:
    Soybeans ⟶ Soybean Oil and Meal
  - The Crack:
    Crude Oil ⟶ Gasoline and Heating Oil

Is Spreader Bullish or Bearish?

Generally, the spreader's market sentiment will be reflected in his position in the near month

If bullish, he will buy (go long) the near month; if bearish, he will sell (go short) the near month

Exceptions to this rule are the Stock Index Future and the Foreign Currency spreads

The investor's sentiment is indicated by his position in the deferred month

Widen or Narrow?

Notice what the spreader did with the more expensive leg

If he bought (went long) the more expensive leg, he wants the spread to WIDEN

If he sold (went short) the more expensive leg, he wants the spread to NARROW

Example: An investor sells Mar Corn @ $2.55 and buys Sep Corn @ $2.70

Bullish or Bearish?:

Widen or Narrow?:

Profit/Loss on Offset (1)

An investor sells Mar Corn @ $2.55 and buys Sep Corn @ $2.70

Amount of initial spread:

Bullish or Bearish:

Wants WIDEN or NARROW:

Later offsets when Mar Corn @ $2.48 and Sep Corn @ $2.67

Spread at offset:

Spread widened or narrowed?:

Profit or Loss?:

Gross amount:

Profit/Loss on Offset (2)

An investor sells Mar S&P @ 955 and buys Dec @ 975 ($250 multiplier)

Amount of initial spread:

Bullish or Bearish:

Wants WIDEN or NARROW:

Later offsets when Mar S&P 500 @ 950 and Dec @ 960

Spread at offset:

Spread widened or narrowed?:

Profit or Loss?:

Gross amount:

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Series 3

Session 2 of 3

-Hedging
-Options
-Synthetics

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Relationship Between Cash & Futures

A strong relationship exists between cash and futures

Prices between the two must converge

Prices must converge on the first day delivery

If prices do not converge, an arbitrage opportunity will exist. As a result of arbitrage activity, prices will then converge.

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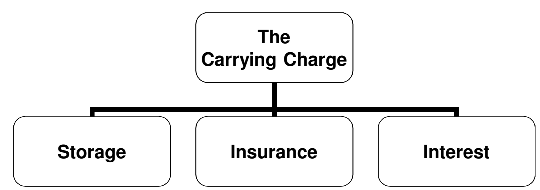
The Carrying Charge



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Application

Cash corn is trading at 600 cents per bushel. Storage costs are 4 cents per bushel, insurance expenses are 2 cents per bushel, and shipping costs 45 cents per bushel. If monthly interest rates are 1%, what is the monthly carrying charge?

Solution

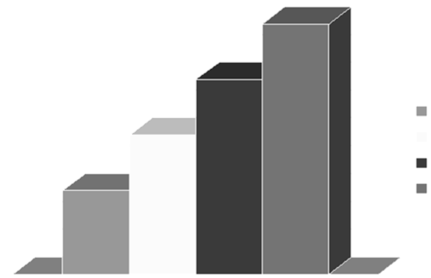
Cash Price
Interest rate
Interest Expense:

Storage Cost:
Insurance Expense:
Storage Costs:

Total Carry Charges:

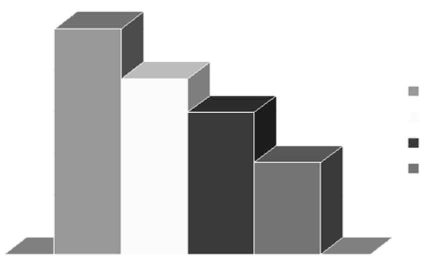
Carrying Charge Market

Normal Market



Inverted Market

Backwardation



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Hedging

Hedgers

Members of the business community who either currently possess or will produce the commodity for sale and delivery at some future date

- ❖ Said to be long the commodity; fearful of falling prices

Or, are currently without the commodity but have an absolute use for the commodity which they will need to buy at some future date

- ❖ Said to be short the commodity; fearful of rising prices

Through hedging, “Producers” and “Users” may pass most of the risk of price change to speculators

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Hedgers: Examples and Overview

Producer	**Overview Item**	**User**
Long	←Cash Commodity (Basis)→	Short
Falling Prices	←Fear→	Rising Prices
Selling hedge (Short futures)	←Establishes→	Buying hedge (Long Futures)
Short Hedger	←What kind of Hedger→	Long Hedger

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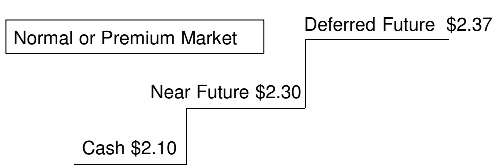
Basis and Basis Change

Basis – Relationship between cash and futures

Normally cash is less than futures – “cash under”



Basis Change from Entering to Lifting the Hedge		
	Producer	User
Positive result if basis:		
In a normal market this means the basis:		

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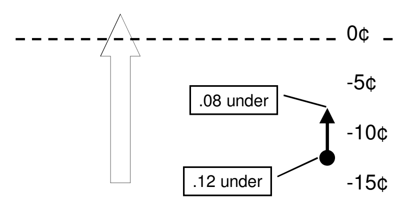
Basis Change (1)

	Cash	Futures	Basis
NOW:	3.45	3.57	
Later:	3.62	3.70	
Did the basis strengthen or weaken?			
Did the basis widen or narrow?			



Remember – A strengthening basis is positive if long the commodity (a Producer)

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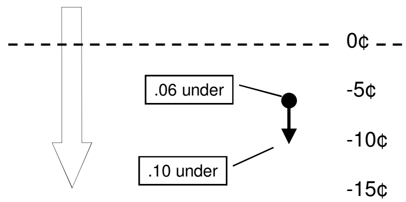
Basis Change (2)

	Cash	Futures	Basis
NOW:	7.58	7.64	
Later:	7.65	7.75	
Did the basis strengthen or weaken?			
Did the basis widen or narrow?			



Remember – A weakening basis is positive if short the commodity (a User)

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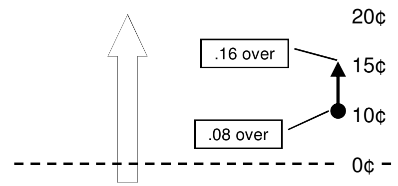
Basis Change (3)

	Cash	Futures	Basis
NOW	8.45	8.37	
Later	8.60	8.44	
Did the basis strengthen or weaken?			
Did the basis widen or narrow?			



Remember – A strengthening basis is positive for a Producer

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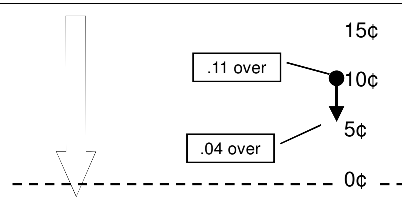
Basis Change (4)

	Cash	Futures	Basis
NOW	12.79	12.68	
Later	12.70	12.66	
Did the basis strengthen or weaken?			
Did the basis widen or narrow?			



Remember – A weakening basis is positive for a User

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The Result of the Hedge?

A farmer with wheat in her silo and the March spot market at $5.87, chooses to hold them for later sale. She hedges by selling futures at $5.99.Later, in July, she sells the wheat in the spot market for $5.82 and covers the short position for $5.90. What was the net result of the hedge?

	Cash	Futures	Basis
March	Long @ 5.87	Short @ 5.99	
July	Sells @ 5.82	Long @ 5.90	
Change	- .05	+ .09	

The overall result of this hedge is an increase in the "cash now" price of $.04

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Effective Selling Price

As the result of the hedge, what was the effective selling price for this farmer?

Two Methods

Cash Later	+ / -	Future Result	The profit of .09 on the futures trade increased the sale proceeds of 5.82 in the cash market
Cash NOW	+ / -	Hedge Result	The overall result of the hedge is an increase in the cash Now Price of .04

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Effective Selling Price

FORMULAS for Effective Selling Price or Cost

- For a Producer, you are asked for Effective Selling Price
  - Effective selling price = Cash Later + Profit on futures or
  - Effective selling price = Cash Later – Loss on futures
- For a User, you are asked for Effective Cost
  - Effective cost = Cash Later - Profit on futures or
  - Effective cost = Cash Later + Loss on futures

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Effective Selling Price or Cost

For a Producer (Long Cash)

A gain in the futures position, or a positive result of the hedge, increases her selling price; she received more money for her commodity.

A loss in futures or a negative result of the hedge decreases her selling price.

For a User (Short Cash)

A gain in the futures position, or a positive result of the hedge, decreases her cost; she paid less money for the commodity.

A loss in futures or a negative result of the hedge increases her cost.

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Hedging Exercise #1

A farmer is long cash soybeans. The current cash price is $7.00 bushel. He sells futures at $7.25 per bushel. Three months later, the farmer sells his cash soybeans at $6.90 and simultaneously buys his futures back at $7.05

Is he a long "producer" or short "user"?

What type of hedger (long or short)?

	Cash	Futures	Basis
Now			
Later			
Change			

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Hedging Exercise #1 (cont.)

What was the effective selling price or effective cost?

For this Producer, the Profit on futures, will his effective selling price.

Did the basis strengthen or weaken?

What was the result of the hedge? For this Producer, the overall positive result will be a from his cash now position.

Hedging Exercise #2

An American importer places an order with a Swiss manufacturer. The order, which is to be delivered in August, is valued at 2,000,000 Swiss francs. The cash price for the franc is $.5975 and September futures are trading at $.5715. When the hedge is lifted, the cash price of the francs is $.6135 and the futures are at $.5855.

Is he a Long “producer” or Short “user”?

What type of hedger (long or short)?

	Cash	Futures	Basis
Now			
Later			
Change			

Hedging Exercise #2 (cont.)

What was the effective selling price or effective cost?

For this User, the Profit on futures, will his effective cost for the francs.

Did the basis strengthen or weaken?

What was the result of the hedge? For this User, the overall negative result will be a(n) from his cash now position.

Hedging Exercise #3

A corporation issues bonds with a price of 94-17. The corporation intends to issue another $10 million in April and wishes to hedge its anticipated offering. T-Bond futures prices are as follows:

March	96-10	September	95-29
June	96-19	December	96-02

Later, the bonds are issued at 90-06 and futures are offset at 91-27

Is the corporation a long “producer” or short “user”?

What type of hedger (long or short)?

	Cash	Futures	Basis
NOW			
Later			
Change			

Hedging Exercise #3 (cont.)

What was the effective selling price or effective cost?

For this Producer, the Profit on futures, will its effective selling price.

Did the corporation's basis strengthen or weaken?

What was the result of the hedge? For this producer, the overall positive result will be a from its cash now position.

This result represents a reduction in interest costs of:

The final realized issue price would have been:

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Hedging Exercise #4

An electrical wire manufacturer enters a hedge when cash copper is at 366 cents and the December futures are at 367.75 cents. The manufacturer closes the hedge when cash is at 367.10 cents and the futures are at 368.85 cents. What is its effective cost for the copper?

	Cash	Futures	Basis
Now			
Later			
Change			

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Options

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Options - Overview

A contract between two parties

<u>The Owner</u>
Buyer, Holder, Long

- Pays the Premium (creates debit)
- Acquires rights / control

<u>The Writer</u>
Seller, Short

- Receives the Premium (creates credit)
- Assumes obligations

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Two Types of Contracts

	The Buyer's Right	The Seller's Obligation
CALL		
PUT		

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"In-the-Money"

The relationship between the market price of the underlying futures contract and the option strike price

- Calls are in-the-money when the market is UP above the strike price
- Puts are in-the-money when the market is DOWN below the strike price

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"In, At, or Out-of-the-Money"

Option and Premium	Market Price	"In, At, or Out-of-the-Money"
Sep 200 Corn Call @ 16.75	216.50	
Sep 200 Corn Put @ .50	216.50	
Oct 360 Gold Put @ 11.70	349.00	
Dec 102 T-Bond Call @ 4-22	105-17	

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The Option's Premium

Premium = Intrinsic Value + Time Value

Intrinsic Value:
- A contracts has intrinsic value if it is in-the-money
  - Its intrinsic value equals its in-the-money amount
  - It has zero intrinsic value if it is out-of-the-money or at-the-money

Time Value:
- Based upon:
  - Time left until expiration
  - Market volatility
- Set in the market place (Negotiated)

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The Option's Premium

Option and Premium	Mkt. Price	"In, At, or Out-of-the-Money"	Intrinsic Value	Time Value
Sep 200 Corn Call @ 16.75	216.50	IN		
Sep 200 Corn Put @ .50	216.50	OUT		
Oct 360 Gold Put @ 11.70	349.00	IN		
Dec 102 T-Bond Call @4-22	105-17	IN		

Simple Options: Long & Short Calls

	CALLS	
	Owner	Writer
Right	To buy a futures contract	None
Obligation	None	To sell a futures contract
Strategy	↑ Bullish	↓ Bearish
Breakeven	Strike Price + Premium	Strike Price + Premium
Maximum Gain	Unlimited	Premium
Maximum Loss	Premium	Unlimited

Simple Options: Long & Short Puts

	PUTS	
	Owner	Writer
Right	To sell a futures contract	None
Obligation	None	To buy a futures contract
Strategy	↓ Bearish	↑ Bullish
Breakeven	Strike Price - Premium	Strike Price - Premium
Maximum Gain	(Strike Price - Premium) x contract size	Premium
Maximum Loss	Premium	(Strike Price - Premium) x contract size

Simple Options – Long Put

Buy 1 Jul Sweet Crude 60.00 Put @ .45
(1,000 bbl.)

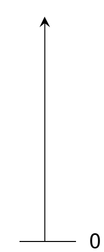
Rights or Obligations:

Strategy:

Breakeven:

Max. Gain:

Max. Loss:



Straddles

Created by: Buying both a call and a put or
Selling both a call and a put

- ❖ Both options have same underlying interest, expiration month, and strike price
  - Long straddle: buy them both; seeking volatility
  - Short straddle: sell them both; expecting stability

Long Straddle

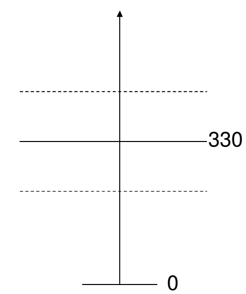
Buy 1 Dec Gold 330 Call @ 6.50
Buy 1 Dec Gold 330 Put @ 4.50

Breakeven:

Maximum Gain:

Maximum Loss:

Strategy:



Spreads

Positions which allow an investor to limit losses in exchange for limiting the gains

- ❖ Spreads may be bullish or bearish
- ❖ Spreads are created with the purchase and sale of two options of the same "class"
  - Class consists of the same underlying futures contract with the same type of option

Types of Spreads

Buy 1 Jan Soybean 7.25 Call and
Sell 1 Jan Soybean 7.75 Call

Buy 1 Mar Soybean 7.50 Call and
Sell 1 Jul Soybean 7.50 Call

Buy 1 May Soybean 7.00 Put and
Sell 1 Jul Soybean 7.75 Put

Vertical Spread

Sell 1 Aug Feeder Cattle .90 Put @ .12
Buy 1 Aug Feeder Cattle .80 Put @ .09
(50,000 lbs.)

Net Premium:
Buyer or Seller:
Debit or Credit:
Bull or Bear:
Widen or Narrow:
Breakeven:
Maximum Gain:
Maximum Loss:

.90

.80

Vertical Spread

Buy 1 Sep 95 T-Bill Call @ 1.65
Sell 1 Sep 97 T-Bill Call @ .90
($1 million par)

Net Premium:
Buyer or Seller:
Debit or Credit:
Bull or Bear:
Widen or Narrow:
Breakeven:
Maximum Gain:
Maximum Loss:

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Calculating an Option's "Delta"

$$\text{Delta} = \frac{\text{Change in option premium}}{\text{Change in futures contract}}$$

Example 1:

T_0 May Wheat futures are $3.80
May Wheat 4.00 Call @ .35

T_1 May Wheat futures are $4.20
May Wheat 4.00 Call @ .55

Estimating Option Premium Using Delta

Example 2: June gold futures are trading at $396.00 per ounce. The June 400 gold call option is trading at $4.20 per ounce. The call's delta is 40% (or .40). If gold rallies to $404.00 per ounce, what would the expected premium be on the call?

Solution:
The change in gold futures was $8.00. Since the delta is 40%, the change in the premium will be 40% of $8.00.

Change in Option Premium:

New Option Premium:

Hedging with Options and the Delta

Options may be used, instead of futures contracts, to hedge a cash commodity

- Out-of-the-money options have low deltas, approaching zero
- At-the-money options have deltas of approximately .5
- In-the-money options have deltas approaching 1.0

To determine how many options contracts would be equivalent to one futures contract, divide the delta of the option into 1.0

Hedging with Options and the Delta

A farmer would need 60 futures contracts to hedge this year's production. How many put contracts would she need if the delta were 0.5?

What if the delta were 0.9?

What if the delta were 0.08?

Margin on Options

Buying options: 100% of premium

Selling options: Regular futures contract margin
+ Option premium
- 50% of the out-of money amount

Example: Sell 1 Dec Wheat 4.00 Call at .15
Wheat market is at 3.90
Wheat futures margin is at $.40

Futures contract margin

Plus premium received

Minus 50% of out-of-money amount

Margin required:

Synthetic Positions

Synthetic Long Call	= Long Put & Long Futures
Synthetic Long Put	= Long Call & Short Futures
Synthetic Long Futures	= Long Call & Short Put
Synthetic Short Futures	= Long Put & Short Call
Conversion	= Long Futures & Long Put & Short Call
Reversal	= Short Futures & Long Call & Short Put

Series 3

Session 3 of 3

- Regulation
- The NFA
- Customer Accounts
- Types of Orders

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Regulatory Oversight

CFTC
(Commodity Futures Trading Commission)

Futures Exchanges

NFA
(National Futures Association)

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The CFTC

The Commodity Futures Trading Commission

Federal Agency created in 1975

Objectives of the CFTC:

- Prevent Manipulation
- Prohibit the spread of false or misleading information
- Establish ethical trading standards
- Approve new futures and options contract specifications
- Regulate exchanges and floor members
- Provide for settlement of customer claims
- CFTC and NFA employees cannot trade futures

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CFTC Delegation

The CFTC delegates some of its authority to:

- The National Futures Association (NFA)
- The Exchanges
  - Carry out CFTC-delegated responsibilities
  - Handle trading activities of contract markets
  - Activities are subject to CFTC review
- Clearing Houses
  - Agency associated with an exchange that guarantees all trades
  - Becomes the buyer for all sellers and the seller for all buyers
  - Eliminates counter-party risk

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CFTC Disciplinary Actions

CFTC maintains disciplinary jurisdiction over floor brokers, traders, and exchanges

CFTC is empowered to go directly to the courts (independent of US Attorney General) to seek a restraining order

Penalties and actions:
- Suspension or revocation of CFTC registration
- Maximum civil monetary penalty of the greater of $140,000 per violation or three times the damages (non-felony)
- Trading privileges suspended or revoked
- May be settled without admitting or denying charges; may then carry penalties as could have been applied following a hearing

Felony convictions for criminal violations of the Commodity Exchange Act are punishable by:
- Suspension or expulsion
- Fines of up to $1,000,000
- Ten years imprisonment

Reporting Levels and Position Limits

Established by CFTC and enforced by the Exchanges

Reporting Levels
- Applies to both hedgers and speculators
- CFTC requires daily reports of gross long or short position in each commodity once it reaches a certain threshold level
- FCM that carries position must also report
- One last report filed on the day account falls below threshold

Position and Trading Limits
- Applies to only speculators
- Applies only to certain commodities
- Designed to prevent manipulation and distortion of prices
- Bona fide hedgers are exempted

NFA Overview

CFTC

NFA

FCM:	Futures Commission Merchant
IB:	Introducing Broker
CTA:	Commodity Trading Advisor
CPO:	Commodity Pool Operator
AP:	Associated Person

Market participants

- FCM: Future Commission Merchant
  - Larger futures firms (B/Ds) handling customer accounts
- IB: Introducing Broker
  - Small futures firms (most on-line firms) which introduce and solicit clients for associated FCMs
- CPO: Commodity Pool Operator
  - Operates and solicit funds for a commodity pool
- CTA: Commodity Trading Advisor
  - Advises others in trading futures (may work for IB, FCM, CPO, or advise individual accounts for a fee)

Associated Person (AP)

Real persons who conduct the business of:
- ❖ FCMs, IBs, CTAs, CPOs
- ❖ Includes officers, partners, employees, solicitors, supervisors

A person required to register with the CFTC, must be an associate member of the NFA

- ❖ Qualifications
  - Series 3
  - Series 31 (Commodity pools only)
  - Series 30 (Managers)
- ❖ May have multiple registrations with approval of all firms

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National Futures Association (NFA)

Self regulatory agency of the futures industry responsible for:
- ❖ Enforcing ethical standards
- ❖ Providing for arbitration of disputes
- ❖ Ensuring minimum financial standards
- ❖ Screening registrations
- ❖ Establishing training standards and proficiency testing
- ❖ **Auditing members** (spot and full scope)
  - Unannounced spot audits
  - Full scope audit every 24 months (<u>no need for court approval to subpoena documents</u>)
  - NFA members are required to audit their branches <u>at least annually</u>
- ❖ Ethics training
  - Firms must have a written policy
  - Must demonstrate compliance upon audit

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NFA Registration

All market participants are required to register with NFA

Exemptions from registration:
- ❖ Floor traders and brokers (subject to Exchange rules)
- ❖ Some CTAs and CPOs may also find exemptions under specific circumstances (discussed later)
- ❖ Exchange members who are registered with CFTC and not with NFA are subject to fines by the CFTC
- ❖ If any NFA member is required to notify the CFTC on any matter, it must also report it to the NFA

NFA members cannot conduct business with non-member firms

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Futures Commission Merchant (FCM)

- ❖ May hold customer accounts / assets
- ❖ Must maintain minimum net capital of $1,000,000
  - File monthly financial reports with NFA within 17 business days of the end of each month
- ❖ May be a Clearing or Non-clearing Firm (may be a clearing firm on some exchanges, while non-clearing on others)
  - **Clearing FCMs** are members of the clearing corp. who process and clear their own trades executed on an exchange
  - **Non-clearing FCMs** process their trades through clearing firms
- ❖ Types of accounts:
  - **Omnibus account** (non-disclosure of customer's information)
    - All trades are entered in the name of the holding FCM
  - **Fully disclosed account** (full disclosure of customer's information)
    - All trades are entered in the name of the customer and the clearing FCM is responsible for customer records

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Introducing Broker (IB)

- ❖ Does not hold customer accounts / assets
- ❖ Required to have an affiliation with an FCM
- ❖ Independent IB
  - Can find clients for any FCM
  - Minimum net capital of $45,000 required
- ❖ Guaranteed IB (GIB) - may be guaranteed by only one FCM
  - No required net capital (FCM puts up the $45,000)
  - The agreement has no expiration
  - FCM is responsible for all GIB's activities
  - FCMs may guarantee unlimited number of IBs (enough $)
  - GIBs can legally introduce more than one FCM unless an exclusive agreement was required by the FCM
  - FCMs are required to audit their GIBs at least annually
  - Both FCMs and IBs are required to time stamp all orders within one minute of entry
  - IBs are required to keep a journal of all customer transactions (unless they are never involved with customer)
  - IBs are not required to keep a copy of customer statements

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Commodity Pool Operator (CPO)

Pools funds of several investors to trade as one account

- ❖ Funds are accepted in the name of the pool
- ❖ Customers are % owners in the pool (similar to a limited partnership)
- ❖ CPO must run each pool as a separated entity
- ❖ CPO must maintain daily transaction records for pool
- ❖ All withdrawals from a commodity pool must be properly disclosed to all participants

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CPO Registration Exemptions

Pool operator is the NFA member

- ❖ May solicit one or more pools
- ❖ Required to register unless exempt

CPO exemptions from registration:

- ❖ De Minimis
  - Gross contributions to all pools is less than $400,000, and
  - No more than 15 participants in any one pool (Excluding CPO and their families)
- ❖ Commodities Investment Club
  - Operate only one pool at a time, and
  - Receive no compensation other than operating expenses, and
  - Do not advertise

An exempt CPO must file a statement with NFA indicating the reasons for its exemption and send a copy to all participants

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CPO Account Statements

CPOs must send account statements to participants

Statement of Income/Loss

- ❖ **Monthly** – if pool is more than $500,000
- ❖ **Quarterly** – if pool is less than or equal to $500,000
- ❖ Generally Accepted Accounting Principles (GAAP) must be used
- ❖ It must show changes of NAV that reflects all fees (net of fees)

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Commodity Trading Advisor

A CTA is any person who:
- ❖ For compensation or profit, engages in the business of advising others as to buying or selling commodity futures or options contracts

CTA may not accept customer funds directly (only through FCM)

Managed Accounts
- ❖ If a CTA handles managed accounts, it must be carried on a fully disclosed basis by the FCM
- ❖ FCM, not the CTA, is responsible for sending account statements to the clients

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CTA Registration Exemptions

CTA is required to register with the NFA unless:
- ❖ It is registered as a CPO and only advises its own pool
  - If providing advice to other pools, it must register as a CTA
- ❖ It advised no more than 15 persons within the last 12 months, and it does not publicly hold itself as advisor
- ❖ It is a publisher (newsletter writers are not exempt)
- ❖ It is a non-profit, voluntary membership organization (e.g. investment club), or a trade association

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CTA/CPO Disclosure Document

Functions somewhat like a securities prospectus

A copy must be filed with the NFA 21 days before its first use

On the **front cover:**
- ❖ Effective date – not earlier than 21 days after filing
  - Information must be current; no more than 3 months old
  - May be used for 12 months from this date
- ❖ If up-front fees - net proceeds available
- ❖ "No approval clause"; also known as the "cautionary statement"
  - CFTC has not passed on the merit of this investment, nor has it passed on the adequacy or accuracy of this disclosure document

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Risk Disclosure Statement

It is reflected on the **First Page** of the disclosure document
- ❖ High Leverage
- ❖ Magnified risk & return – volatility, liquidity, counter party credit risk
- ❖ May be subject to substantial charges – management, advisory, broker fees (detail of all charges)

Other information within the document:
- ❖ Types of futures and options that will be traded
- ❖ Minimum and maximum size of the pool (if any)
- ❖ All applicable fees (up front and annual fees)
- ❖ How the fund meets the margin call
- ❖ Breakeven analysis
- ❖ 5-year business background of the CPO & CTA trading principals
- ❖ All civil & criminal actions (by CFTC, NFA, and clients) for 5 years

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Risk Disclosure Document

Actual and potential conflicts of interests must be disclosed

- ❖ If the CPO also operates as a CTA
- ❖ If the CPO (or an affiliate) receives a portion of the commissions
- ❖ The names of IB and FCM, if the customer is required to trade through them
- ❖ If the pool invests only in foreign futures, it still needs to be registered

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Risk Disclosure Document

Performance history disclosure by CPO:

- ❖ Must provide monthly rates of return in either tabular form or by bar graph
- ❖ Must include the number of outstanding units at the beginning and the end of the period for which performance is included
  - History more than 5 years → last 5 years
  - History between 3-5 years → entire history
  - History less than 3 years → entire history plus
    - Lesser of 5 years or the entire history of any other pool operated by the CPO or CTA
- ❖ CTA's performance data <u>may not include</u> independent clients and proprietary accounts

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Regulatory Functions of the NFA

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Some Prominent Rules of NFA

- ❖ **NFA Rule 2-4**: Members and associates shall observe high standards of commercial honor and <u>just and equitable principles of trade</u> in the conduct of their commodity future business
- ❖ **NFA Rule 2-38**: All members must establish and maintain a written <u>business continuity and disaster recovery plan</u>, indicating the name and contact information for one or two individuals to be reached by NFA in case of an emergency
- ❖ **NFA no approval clause:**
  - CFTC and NFA do not sponsor, approve, or recommend an AP
- ❖ <u>Foreign brokers</u> working in U.S. branch offices abroad must be properly registered (S-3 licensed)

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NFA Compliance and Disciplinary Actions

Infractions are reported to the Regional NFA Business Conduct Committee

NFA Compliance Director can:
- Require statements under oath from members
- Subpoena documents
- While **under investigation,** a member may not resign and may continue to do business

The President of the NFA, with concurrence of the board, may initiate a "Member Responsibility Action"
- Firm may be required to immediately cease doing business
- Does not require a hearing beforehand

NFA Compliance and Disciplinary Actions

Disciplinary actions: Original jurisdiction is given to a Hearing Panel which may decide on:
- Suspension or revocation of NFA membership
- Barring from association with NFA member firms
- Censure or reprimand
- Fine of up to $250,000 per violation (non-felony)
- Issuance of cease and desist order
- Not prison
- "Formal rules of evidence" need not apply

Appeals process:
- Appeals committee of the NFA
- CFTC
- Federal courts

NFA Arbitration

Used for the settlement of disputes between member firms, or member firm and customers
- Must be filed within 2 years of discovery
- Decisions cannot be appealed

Disputes of up to $50,000
- Normally handled by one arbitrator
- Defendant must respond within 20 days of complaint

Disputes of over $50,000
- Normally handled by three arbitrators
- Defendant must respond within 45 days

Judgments and Awards
- Judgments must be rendered within 30 days of closing of records
- Awards must be paid within 30 days of judgment, or the respondent would be subject to suspension

Communication with the Public

Written communications with the public and all promotional material (including the text of standardized oral presentations) require prior approval of a partner or officer of the firm

Copies of all promotional material, along with their approvals, must be maintained for five years

NFA prohibitions:
- False or misleading statements or omissions of material facts
- Emphasizing profits without giving equal weight to risks
- Citing past profits without cautioning that they may not represent future profits
- Using statistics which cannot be substantiated
- Using hypothetical performance without providing a special disclosure statement

Opening and Maintaining Customer Accounts

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Opening Customer Accounts

1. Fill out Commodity Account Agreement
   - ❖ Must be signed by all parties before trading
2. Read and sign Risk Disclosure Document
   - ❖ AP is responsible for getting this document signed and dated at or prior to account opening
   - ❖ A copy is kept by all parties involved (IB, FCM)
3. Information needed (NFA Rule 2-30 "know your customer"):
   - ❖ Name and address
   - ❖ Legal age (age of majority)
   - ❖ Principal occupation
   - ❖ Estimated annual income and net worth
   - ❖ Investment and futures trading experience
4. Account approval by a principal
   - ❖ Information need not be verified (customer may be only source of information)

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Risk Disclosure

Proper Disclosure:

- ❖ For some customers, the best disclosure statement is that trading futures are **too risky** for them
- ❖ **Spread positions** should not be described as having less risk

Additional Risk Disclosures:

- ❖ AP must determine whether they are needed
- ❖ Option Disclosure Document is needed to open an option account (cannot be opened without a futures account)
- ❖ Option Risk Disclosure must include the components that make up the option premium (time & intrinsic value), and not the actual premium

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Opening Customer Account

If customer refuses to disclose information:

- ❖ **US citizens:** Maintain a record of the refusal
- ❖ **Non US citizens:** No need to keep a record

Margin Agreement: must be signed by all clients

- ❖ There is no cash account for commodities

Transfer Agreement or ("Supplementary Agreement")

- ❖ Allows FCM to transfer monies to/from client's securities account
- ❖ If no such agreement was signed, FCM would need client's specific, written approval for each transfer

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Types of Accounts

Individual – one owner on the account

Joint – multiple owners; must obtain information on all owners
- ❖ Joint Tenant With Right Of Survivorship ("JTWROS")
  - Usually spouses
  - Account passes whole without probate
- ❖ Tenancy in Common ("TEN-COM")
  - Usually business partners
  - Account divided on death

Corporate
- ❖ Obtain copy of Charter and By-laws allowing trading in futures
- ❖ Resolution authorizing an individual(s) to act on behalf of the corporation

Partnership – Obtain copy of Partnership Agreement

Trust – Obtain copy of Trust Agreement

Discretionary Account

AP is given discretion over the account
- ❖ Requires written power of attorney (PoA)
- ❖ All trades reviewed by principal within one business day
- ❖ AP must have <u>two years experience</u> (unless a CTA)
- ❖ PoA does not have to be renewed; but will be void upon the death of the customer

Third party discretion (given to other than AP)
- ❖ Actual customer must give permission
- ❖ Send duplicate confirmations

Churning:
- ❖ Excessive trades in the account to generate commission

Record-Keeping

NFA members generally must keep records for <u>five years</u>

Customer Account Statement: must be sent by FCM
- ❖ **Active Accounts** – Monthly (at least one transaction or an open position)
- ❖ **Inactive Accounts** – At least quarterly

Customer Confirmations
- ❖ Must be sent no later than next business day

Customer Complaints (<u>not public record</u>)
- ❖ Firms are required to keep a copy of <u>all written complaints</u>
  - <u>If received orally:</u> Get it in writing and keep a copy

Settlements (<u>public records</u>)
- ❖ May be reached between firms and customers or regulators without admitting or denying guilt

Record-Keeping

If the customer is introduced by IB to the FCM
- ❖ Account form kept on file by both IB and FCM
- ❖ FCM's customer statement must show the name of IB

CTA records
- ❖ Powers of attorney (name and address)
- ❖ List of all positions
- ❖ Copies of each confirmation and statement from FCM
- ❖ All communication with the public (advertising and sales literature)

CPO, CTA, and their principals
- ❖ Must maintain detailed daily record of all personal transactions and all statements received from FCM

Death of a customer: <u>PoA is automatically cancelled</u>
- ❖ Cancel all open (GTC) orders
- ❖ Liquidate all positions

The USA PATRIOT Act

Currency Transactions Reports (CTR)
- ❖ Filed for all currency transactions by a single customer during one business day that exceed $10,000
- ❖ Filed also for structured transactions

Currency and Monetary Instrument Transaction Report (CMIR)
- ❖ Filed whenever anyone physically transports or receives cash (or equivalents) exceeding $10,000 into, or out of, the U.S.

Suspicious Activity Report (SARs)
- ❖ Filed whenever a transaction (or group of transactions) equals or exceeds $5,000 and the firm suspects the transaction is designed to evade reporting requirements or has no apparent business purpose
- ❖ Confidential (client not informed)

Penalties
- ❖ 20 years in prison and the greater of a $500,000 fine per transaction or twice the amount of funds involved

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Types of Orders

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Market and Limit Orders

Market Order:
- ❖ Customer <u>wants</u> to buy or sell
- ❖ Customer does not stipulate a price
  - Execution is
  - Price is

Limit Order:
- ❖ Customer <u>wants</u> to buy or sell
- ❖ But, only if the price is right
  - Execution is
  - Price is

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Stop and Stop-limit Orders

Stop and Stop Limit Orders:
- ❖ Customer would (generally) rather not have execution
- ❖ They are (usually) <u>protective</u>

Both stop and stop limit orders are “triggered” (activated) when a contract trades at, or through, the stop price
- ❖ Buy Stop orders, placed above the market, are also triggered when bid at the stop price
- ❖ Sell Stop orders, placed below the market, are also triggered when offered at the stop price

Once activated:
- Stop orders become:
- Stop-limit orders become:

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Example: Buy Stop / Buy Stop Limit

Jane is short Jul Sweet Crude at 60

Today Crude opens at 62.20

Afraid of suffering uncontrolled losses, she enters a protective order:
Buy Jul Sweet Crude at 64 stop

Later: 63.96 63.97 63.99 64.01 64.03 64.00

Trigger Price? Execution Price?

As a Stop-limit: Buy Jul Sweet Crude at 64 stop-limit

Later: 63.96 63.97 63.99 64.01 64.03 64.00

Trigger Price? Execution Price?

Market-If-Touched (MIT) Orders

They have the intention and direction of the Limit orders, in that customers would generally want execution at, or better than, indicated price → activated or triggered

- The Sell MIT, placed above the market and is activated when futures trade, or bid at or above the order price
- The Buy MIT, placed below the market and is activated when futures trade, or offered at or below the order price

Once activated, Market-If-Touched orders become market orders → Executed at the market price

Example: Market-If-Touched

Frank wants to take a long position in September Sugar futures if the price drops to 16.80 cents

Today, Sep Sugar opens at 16.90

Frank places the following order: Buy Sep Sugar at 16.80 MIT

Later: 16.85 16.83 16.81 16.78 16.83 16.82

Trigger Price? Execution Price?

Order Placement

SL BS

\- - - - - - - - - - -

BL SS

Types of Orders

TYPE ORDER	PLACED	HOW TRIGGERED	HOW EXECUTED
Market Order	N/A	N/A	At Best Price
Buy limit order	Below Market	N/A	At or Better
Sell Limit Order	Above Market	N/A	At or Better
Buy Stop Order	Above Market	Traded at or through or Bid at	As Market Order
Sell Stop Order	Below Market	Traded at or through or Offered at	As Market Order
Buy Stop-Limit	Above Market	Traded at of through or Bid at	As Limit Order
Sell Stop-Limit	Below Market	Traded at or through or Offered at	As Limit Order
Buy MIT (Market If Touched)	Below Market	Traded at or through or Offered at	As Market Order
Sell MIT (market If Touched)	Above Market	Traded at or through or Bid at	As Market Order

Other Orders

Not Held Order (NH)

- ❖ Broker is given discretion as to time and price
- ❖ Broker is given authority as to whether to take the position or not
- ❖ They may not be held responsible for any action they take or fail to take

One Cancels Other (OCO)

- ❖ Instructing the broker to do one of two alternative orders
- ❖ Whichever is done first automatically cancels the other
- ❖ Prevents a double fill

Other Orders

Give Up Order

- ❖ One FCM “gives up” orders to other FCMs to protect his client’s anonymity
- ❖ FCMs share commission

Switch Order

- ❖ Liquidate and roll the existing position to a later delivery month
- ❖ Primarily used by the speculators prior to the First Notice Day

Allocation of Bunched Orders

- ❖ Does not have to be specified by CTA at the time of order entry
- ❖ It must be done by the CTA or the account manager before the end of the day
- ❖ Subject to fair, equitable, and non-preferential standards

STC™

Thank you for your kind attention

Best Wishes & Good Luck
- from all of us at STC