Financial Markets and Products

Chapter 7:

Futures Markets

Bionic Turtle
A CeriFi Company

Chapter 7:
Futures Markets

Key Concepts:

- Futures Specifications and Terms
- Role of Exchanges in Futures Trading
- Mechanics of Futures Trading and Settlement
- Contango, Backwardation, and Convergence to Spot
- Mark-to-Market and its Effect on Hedgers

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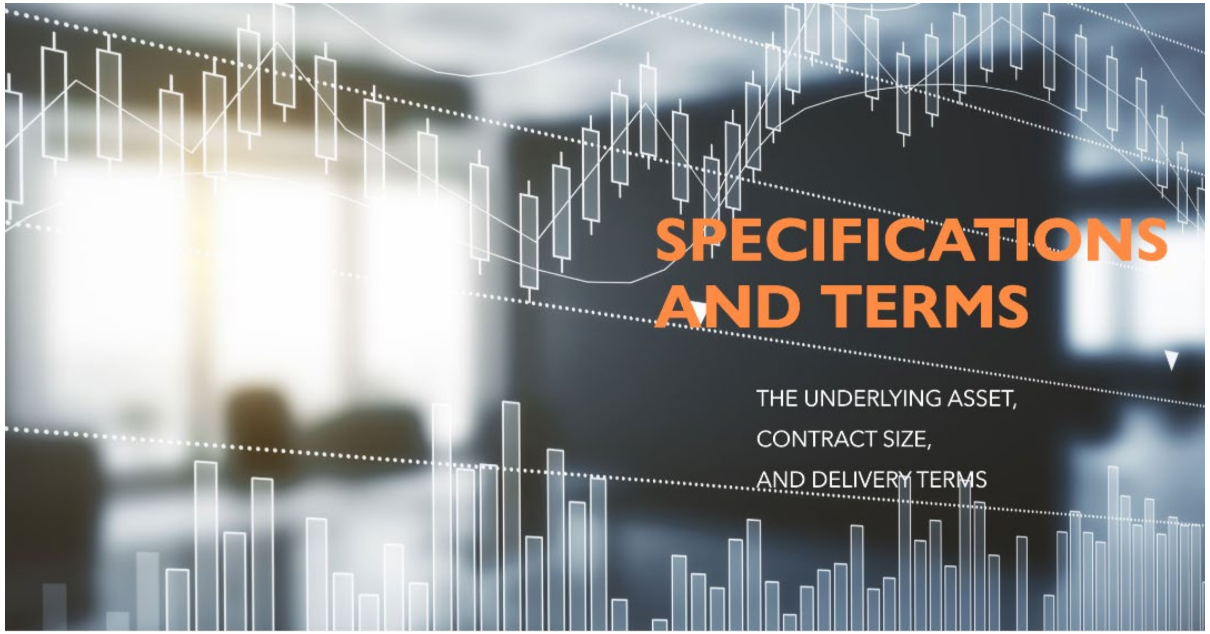
Futures Specifications and Terms

- The Underlying Asset, including quality
- Contract Size
- Delivery Location
- Delivery Time



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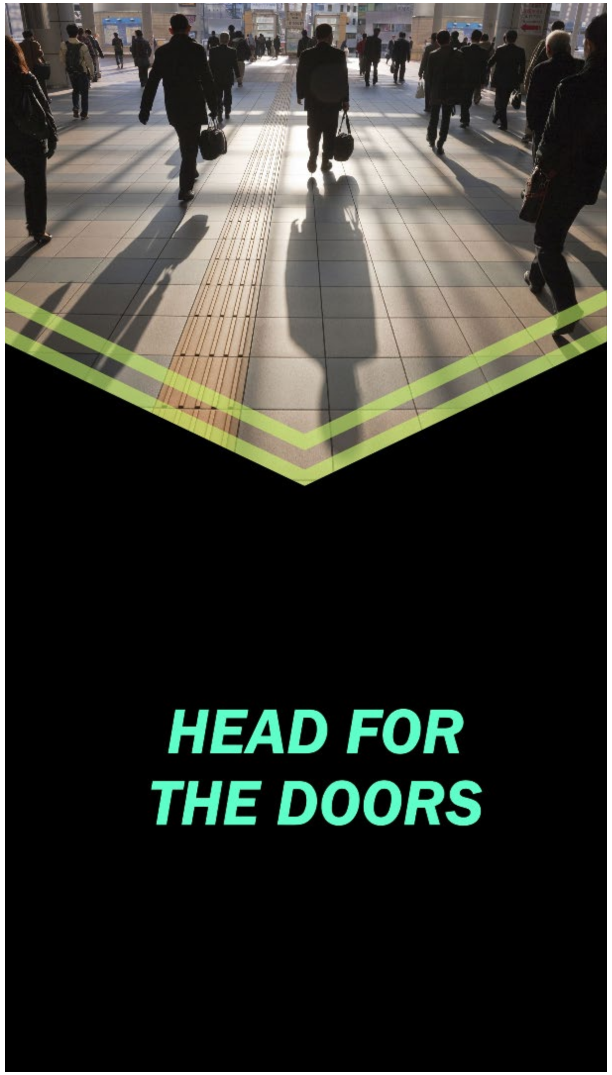
Futures Specifications and Terms (cont.)

- Price Quotes
- Price Limits
    a) Limit Up
    b) Limit Down
- Position Limits



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Futures Specifications and Terms (cont.)

Example: Crude Oil (CME)

Contract Size: 1,000 Barrels

Price: cents per barrel, minimum price tick: $0.01 per barrel = $10 per contract

Maturity: Every month, 10 years

Termination of Trading: Trading terminates 3 business days before 25th calendar day of month prior to contract month. If 25th calendar day is not a business day, trading terminates 4 business days before 25th calendar day of month prior to contract month.

Final Settlement: On day of expiration, expiring month will settle based on the VWAP of the outright CME Globex trades executed between 14:00:00 and 14:30:00 ET.

Delivery: Delivery shall be made free-on-board ("F.O.B.") at any pipeline or storage facility in Cushing, Oklahoma, with pipeline access to Enterprise, Cushing storage, Enbridge, Cushing storage, or Plains, Cushing storage.

> (A) Delivery shall take place no earlier than first calendar day of delivery month and no later than last calendar day of delivery month.
>
> (B) It is the short's obligation to ensure that its crude oil receipts, including each specific foreign crude oil stream, if applicable, are available to begin flowing ratably in Cushing, Oklahoma, by first day of the delivery month, in accord with generally accepted pipeline scheduling practices.

Source: https://www.cmegroup.com/markets/energy/crude-oil/light-sweet-crude.contractSpecs.html

Role of Exchanges in Futures Trading

- Standardize contracts
- Exchange’s CCP becomes counterparty to all members
- Variation margin daily settlement
- Ability to close out positions by offsetting positions
- Initial margin and default fund
- Members can clear trades of non-members

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Mechanics of Futures Trading and Settlement

Market Participants

- Futures Commission Merchants – Manage funds for customers
- Introducing Brokers – Execute orders for customers
- Locals – Floor traders, including scalpers, day traders, and position traders

Orders

- Market
- Limit
- Stop-Loss
- Stop-Limit
- Market-if-Touched
- Discretionary

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Mechanics of Futures Trading and Settlement (cont.)

Duration of Orders

- Day Order
- Good-till-Cancelled (GTC)
- Fill-or-Kill (FoK)

Physical Settlement

Most closed out before settlement.

Delivery period varies by contract.

1. Short issues notice of intent to deliver to CCP (including place and grade)
2. Exchange selects one or more longs to take delivery (Usually longest held or random)
3. Price paid is the settlement price adjusted for grade and sometimes delivery location

First notice day – First-day notice to deliver can be submitted

Last notice day – Usually a few days after the last trading day

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Mechanics of Futures Trading and Settlement (cont.)

Cash Settlement – No physical exchange, just a final exchange of variation margin.

- Stock Indices
- Weather Indices
- Real Estate Indices
- Eurodollar Futures

S&P 500 Futures settle on third Friday of the month based on the day's **opening price**.

Open Interest (OI)

The total open positions on a contract at any given time. Tends to peak right before settlement.

	A buys 1 from B	A buys 1 from C	B buys 1 from C	C buys 1 from A
A	1	2	2	1
B	-1	-1	0	0
C	0	-1	-2	-1
OI	1	2	2	1

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Mechanics of Futures Trading and Settlement (cont.)

Open Interest (OI) Example, inspired by Bionic Turtle PQ 708.1

1. Trader Albert (A) enters a new long position buying 500 futures contracts from Trader Barbara (B), who is the corresponding seller entering a new short position
2. Trader Chris (C) enters a new long position buying 350 futures contracts from Trader Donald (D), who is the corresponding seller entering a new short position
3. Trader Albert (A) offsets all 500 of his existing long contracts by selling to Trader Erin (E), who is the corresponding buyer entering a new long position
4. Trader Chris (C) offsets 185 of her existing contracts by selling to Trader Fred (F), who is the corresponding buyer entering a new long position
5. Trader Erin (E) offsets 300 of her existing long contracts by selling to Trader Barbara (B), who is the corresponding buyer who offsets 300 of her existing short contracts
6. Trader Erin (E) forgets to offset the balance and is forced to take delivery on her long position of her remaining 200 contracts; Trader Barbara (B) delivers 200 contracts of her existing short contracts

Which of the following is the cumulative impact of these trades on the open interest; i.e., what is the cumulative net change to the open interest due to these six trades?

A						
B						
C						
D						
E						
F						
OI						

Mechanics of Futures Trading and Settlement (cont.) (XLS)

		Long (Buy)	Short (Sell)	Opening			Buys | Delivers	Sells | Takes Dlvr	Closing		Must be Zero
		A	B	C	D	E	F	G	H		
Tx. 1	Buy									0	
	Sell									0	0
NET	Long	0	0	0	0	0	0	0	0	0	OI
	Short	0	0	0	0	0	0	0	0	0	
Tx. 2	Buy									0	
	Sell									0	0
NET	Long	0	0	0	0	0	0	0	0	0	OI
	Short	0	0	0	0	0	0	0	0	0	
Tx. 3	Buy									0	
	Sell									0	0
NET	Long	0	0	0	0	0	0	0	0	0	OI
	Short	0	0	0	0	0	0	0	0	0	
Tx. 4	Buy									0	
	Sell									0	0
NET	Long	0	0	0	0	0	0	0	0	0	OI
	Short	0	0	0	0	0	0	0	0	0	
Tx. 5	Buy									0	
	Sell									0	0
NET	Long	0	0	0	0	0	0	0	0	0	OI
	Short	0	0	0	0	0	0	0	0	0	
Tx. 6	Delivers									0	
	Takes Delivery									0	0
NET	Long	0	0	0	0	0	0	0	0	0	OI
	Short	0	0	0	0	0	0	0	0	0	

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Mechanics of Futures Trading and Settlement (cont.) (XLS)

		Long (Buy)	Short (Sell)	Opening			Buys | Delivers	Sells | Takes Dlvr	Closing		Must be Zero
		A	B	C	D	E	F	G	H		
Tx. 1	Buy	500								500	
	Sell									0	500
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	0	0	0	0	0	0	0	0	
Tx. 2	Buy									0	
	Sell									0	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	0	0	0	0	0	0	0	0	
Tx. 3	Buy									0	
	Sell									0	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	0	0	0	0	0	0	0	0	
Tx. 4	Buy									0	
	Sell									0	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	0	0	0	0	0	0	0	0	
Tx. 5	Buy									0	
	Sell									0	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	0	0	0	0	0	0	0	0	
Tx. 6	Delivers									0	
	Takes Delivery									0	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	0	0	0	0	0	0	0	0	

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Mechanics of Futures Trading and Settlement (cont.) (XLS)

		Long (Buy)	Short (Sell)	Opening			Buys | Delivers	Sells | Takes Dlvr	Closing		Must be Zero
		A	B	C	D	E	F	G	H		
Tx. 1	Buy	500								500	
	Sell		500							500	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 2	Buy									0	
	Sell									0	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 3	Buy									0	
	Sell									0	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 4	Buy									0	
	Sell									0	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 5	Buy									0	
	Sell									0	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 6	Delivers									0	
	Takes Delivery									0	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	500	0	0	0	0	0	0	500	

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Mechanics of Futures Trading and Settlement (cont.) (XLS)

		Long (Buy)	Short (Sell)	Opening			Buys | Delivers	Sells | Takes Dlvr	Closing		Must be Zero
		A	B	C	D	E	F	G	H		
Tx. 1	Buy	500								500	
	Sell		500							500	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 2	Buy			350						350	
	Sell									0	350
NET	Long	500	0	350	0	0	0	0	0	850	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 3	Buy									0	
	Sell									0	0
NET	Long	500	0	350	0	0	0	0	0	850	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 4	Buy									0	
	Sell									0	0
NET	Long	500	0	350	0	0	0	0	0	850	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 5	Buy									0	
	Sell									0	0
NET	Long	500	0	350	0	0	0	0	0	850	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 6	Delivers									0	
	Takes Delivery									0	0
NET	Long	500	0	350	0	0	0	0	0	850	OI
	Short	0	500	0	0	0	0	0	0	500	

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		A	B	C	D	E	F	G	H		
Tx. 1	Buy	500								500	
	Sell		500							500	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 2	Buy			350						350	
	Sell				350					350	0
NET	Long	500	0	350	0	0	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 3	Buy									0	
	Sell									0	0
NET	Long	500	0	350	0	0	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 4	Buy									0	
	Sell									0	0
NET	Long	500	0	350	0	0	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 5	Buy									0	
	Sell									0	0
NET	Long	500	0	350	0	0	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 6	Delivers									0	
	Takes Delivery									0	0
NET	Long	500	0	350	0	0	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	

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Mechanics of Futures Trading and Settlement (cont.) (XLS)

		Long (Buy)	Short (Sell)	Opening			Buys | Delivers	Sells | Takes Dlvr	Closing		Must be Zero
		A	B	C	D	E	F	G	H		
Tx. 1	Buy	500								500	
	Sell		500							500	0
NET	Long	500	0	0	0	0	0	0	0	500	**OI**
	Short	0	500	0	0	0	0	0	0	500	
Tx. 2	Buy			350						350	
	Sell				350					350	0
NET	Long	500	0	350	0	0	0	0	0	850	**OI**
	Short	0	500	0	350	0	0	0	0	850	
Tx. 3	Buy									0	
	Sell	500								500	-500
NET	Long	0	0	350	0	0	0	0	0	350	**OI**
	Short	0	500	0	350	0	0	0	0	850	
Tx. 4	Buy									0	
	Sell									0	0
NET	Long	0	0	350	0	0	0	0	0	350	**OI**
	Short	0	500	0	350	0	0	0	0	850	
Tx. 5	Buy									0	
	Sell									0	0
NET	Long	0	0	350	0	0	0	0	0	350	**OI**
	Short	0	500	0	350	0	0	0	0	850	
Tx. 6	Delivers									0	
	Takes Delivery									0	0
NET	Long	0	0	350	0	0	0	0	0	350	**OI**
	Short	0	500	0	350	0	0	0	0	850	

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Mechanics of Futures Trading and Settlement (cont.) (XLS)

		Long (Buy)	Short (Sell)	Opening			Buys | Delivers	Sells | Takes Dlvr	Closing		Must be Zero
		A	B	C	D	E	F	G	H		
Tx. 1	Buy	500								500	
	Sell		500							500	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 2	Buy			350						350	
	Sell				350					350	0
NET	Long	500	0	350	0	0	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 3	Buy					500				500	
	Sell	500								500	0
NET	Long	0	0	350	0	500	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 4	Buy									0	
	Sell									0	0
NET	Long	0	0	350	0	500	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 5	Buy									0	
	Sell									0	0
NET	Long	0	0	350	0	500	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 6	Delivers									0	
	Takes Delivery									0	0
NET	Long	0	0	350	0	500	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	

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		Long (Buy)	Short (Sell)	Opening			Buys | Delivers	Sells | Takes Dlvr	Closing		Must be Zero
		A	B	C	D	E	F	G	H		
Tx. 1	Buy	500								500	
	Sell		500							500	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 2	Buy			350						350	
	Sell				350					350	0
NET	Long	500	0	350	0	0	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 3	Buy					500				500	
	Sell	500								500	0
NET	Long	0	0	350	0	500	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 4	Buy									0	
	Sell			185						185	-185
NET	Long	0	0	165	0	500	0	0	0	665	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 5	Buy									0	
	Sell									0	0
NET	Long	0	0	165	0	500	0	0	0	665	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 6	Delivers									0	
	Takes Delivery									0	0
NET	Long	0	0	165	0	500	0	0	0	665	OI
	Short	0	500	0	350	0	0	0	0	850	

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Mechanics of Futures Trading and Settlement (cont.) (XLS)

		Long (Buy)	Short (Sell)	Opening			Buys | Delivers	Sells | Takes Dlvr	Closing		Must be Zero
		A	B	C	D	E	F	G	H		
Tx. 1	Buy	500								500	
	Sell		500							500	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 2	Buy			350						350	
	Sell				350					350	0
NET	Long	500	0	350	0	0	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 3	Buy					500				500	
	Sell	500								500	0
NET	Long	0	0	350	0	500	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 4	Buy						185			185	
	Sell			185						185	0
NET	Long	0	0	165	0	500	185	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 5	Buy									0	
	Sell									0	0
NET	Long	0	0	165	0	500	185	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 6	Delivers									0	
	Takes Delivery									0	0
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	Short	0	500	0	350	0	0	0	0	850	

1. Trader Albert (A) enters a new long position buying 500 futures contracts from Trader Barbara (B), who is the corresponding seller entering a new short position
2. Trader Chris (C) enters a new long position buying 350 futures contracts from Trader Donald (D), who is the corresponding seller entering a new short position
3. Trader Albert (A) offsets all 500 of his existing long contracts by selling to Trader Erin (E), who is the corresponding buyer entering a new long position
4. Trader Chris (C) offsets 185 of her existing contracts by selling to Trader Fred (F), who is the corresponding buyer entering a new long position
5. Trader Erin (E) offsets 300 of her existing long contracts by selling to Trader Barbara (B), who is the corresponding buyer who offsets 300 of her existing short contracts
6. Trader Erin (E) forgets to offset the balance and is forced to take delivery on her long position of her remaining 200 contracts; Trader Barbara (B) delivers 200 contracts of her existing short contracts

Bionic Turtle

Mechanics of Futures Trading and Settlement (cont.) (XLS)

		Long (Buy)	Short (Sell)	Opening			Buys | Delivers	Sells | Takes Dlvr	Closing		Must be Zero
		A	B	C	D	E	F	G	H		
Tx. 1	Buy	500								500	
	Sell		500							500	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 2	Buy			350						350	
	Sell				350					350	0
NET	Long	500	0	350	0	0	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 3	Buy					500				500	
	Sell	500								500	0
NET	Long	0	0	350	0	500	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 4	Buy						185			185	
	Sell			185						185	0
NET	Long	0	0	165	0	500	185	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 5	Buy									0	
	Sell					300				300	-300
NET	Long	0	0	165	0	200	185	0	0	550	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 6	Delivers									0	
	Takes Delivery									0	0
NET	Long	0	0	165	0	200	185	0	0	550	OI
	Short	0	500	0	350	0	0	0	0	850	

1. Trader Albert (A) enters a new long position buying 500 futures contracts from Trader Barbara (B), who is the corresponding seller entering a new short position
2. Trader Chris (C) enters a new long position buying 350 futures contracts from Trader Donald (D), who is the corresponding seller entering a new short position
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4. Trader Chris (C) offsets 185 of her existing contracts by selling to Trader Fred (F), who is the corresponding buyer entering a new long position
5. Trader Erin (E) offsets 300 of her existing long contracts by selling to Trader Barbara (B), who is the corresponding buyer who offsets 300 of her existing short contracts
6. Trader Erin (E) forgets to offset the balance and is forced to take delivery on her long position of her remaining 200 contracts; Trader Barbara (B) delivers 200 contracts of her existing short contracts

Bionic Turtle

Mechanics of Futures Trading and Settlement (cont.) (XLS)

		Long (Buy)	Short (Sell)	Opening			Buys | Delivers	Sells | Takes Dlvr	Closing		Must be Zero
		A	B	C	D	E	F	G	H		
Tx. 1	Buy	500								500	
	Sell		500							500	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 2	Buy			350						350	
	Sell				350					350	0
NET	Long	500	0	350	0	0	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 3	Buy					500				500	
	Sell	500								500	0
NET	Long	0	0	350	0	500	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 4	Buy						185			185	
	Sell			185						185	0
NET	Long	0	0	165	0	500	185	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 5	Buy		300							300	
	Sell					300				300	0
NET	Long	0	0	165	0	200	185	0	0	550	OI
	Short	0	200	0	350	0	0	0	0	550	
Tx. 6	Delivers									0	
	Takes Delivery									0	0
NET	Long	0	0	165	0	200	185	0	0	550	OI
	Short	0	200	0	350	0	0	0	0	550	

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5. Trader Erin (E) offsets 300 of her existing long contracts by selling to Trader Barbara (B), who is the corresponding buyer who offsets 300 of her existing short contracts
6. Trader Erin (E) forgets to offset the balance and is forced to take delivery on her long position of her remaining 200 contracts; Trader Barbara (B) delivers 200 contracts of her existing short contracts

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Mechanics of Futures Trading and Settlement (cont.) (XLS)

		Long (Buy)	Short (Sell)	Opening			Buys | Delivers	Sells | Takes Dlvr	Closing		Must be Zero
		A	B	C	D	E	F	G	H		
Tx. 1	Buy	500								500	
	Sell		500							500	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 2	Buy			350						350	
	Sell				350					350	0
NET	Long	500	0	350	0	0	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 3	Buy					500				500	
	Sell	500								500	0
NET	Long	0	0	350	0	500	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 4	Buy						185			185	
	Sell			185						185	0
NET	Long	0	0	165	0	500	185	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 5	Buy		300							300	
	Sell					300				300	0
NET	Long	0	0	165	0	200	185	0	0	550	OI
	Short	0	200	0	350	0	0	0	0	550	
Tx. 6	Delivers									0	
	Takes Delivery					200				200	-200
NET	Long	0	0	165	0	0	185	0	0	350	OI
	Short	0	200	0	350	0	0	0	0	550	

1. Trader Albert (A) enters a new long position buying 500 futures contracts from Trader Barbara (B), who is the corresponding seller entering a new short position

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5. Trader Erin (E) offsets 300 of her existing long contracts by selling to Trader Barbara (B), who is the corresponding buyer who offsets 300 of her existing short contracts

6. Trader Erin (E) forgets to offset the balance and is forced to take delivery on her long position of her remaining 200 contracts; Trader Barbara (B) delivers 200 contracts of her existing short contracts

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Mechanics of Futures Trading and Settlement (cont.) (XLS)

		Long (Buy)	Short (Sell)	Opening			Buys | Delivers	Sells | Takes Dlvr	Closing		Must be Zero
		A	B	C	D	E	F	G	H		
Tx. 1	Buy	500								500	
	Sell		500							500	0
NET	Long	500	0	0	0	0	0	0	0	500	OI
	Short	0	500	0	0	0	0	0	0	500	
Tx. 2	Buy			350						350	
	Sell				350					350	0
NET	Long	500	0	350	0	0	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 3	Buy					500				500	
	Sell	500								500	0
NET	Long	0	0	350	0	500	0	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 4	Buy						185			185	
	Sell			185						185	0
NET	Long	0	0	165	0	500	185	0	0	850	OI
	Short	0	500	0	350	0	0	0	0	850	
Tx. 5	Buy		300							300	
	Sell					300				300	0
NET	Long	0	0	165	0	200	185	0	0	550	OI
	Short	0	200	0	350	0	0	0	0	550	
Tx. 6	Delivers		200							200	
	Takes Delivery					200				200	0
NET	Long	0	0	165	0	0	185	0	0	350	OI
	Short	0	0	0	350	0	0	0	0	350	

1. Trader Albert (A) enters a new long position buying 500 futures contracts from Trader Barbara (B), who is the corresponding seller entering a new short position
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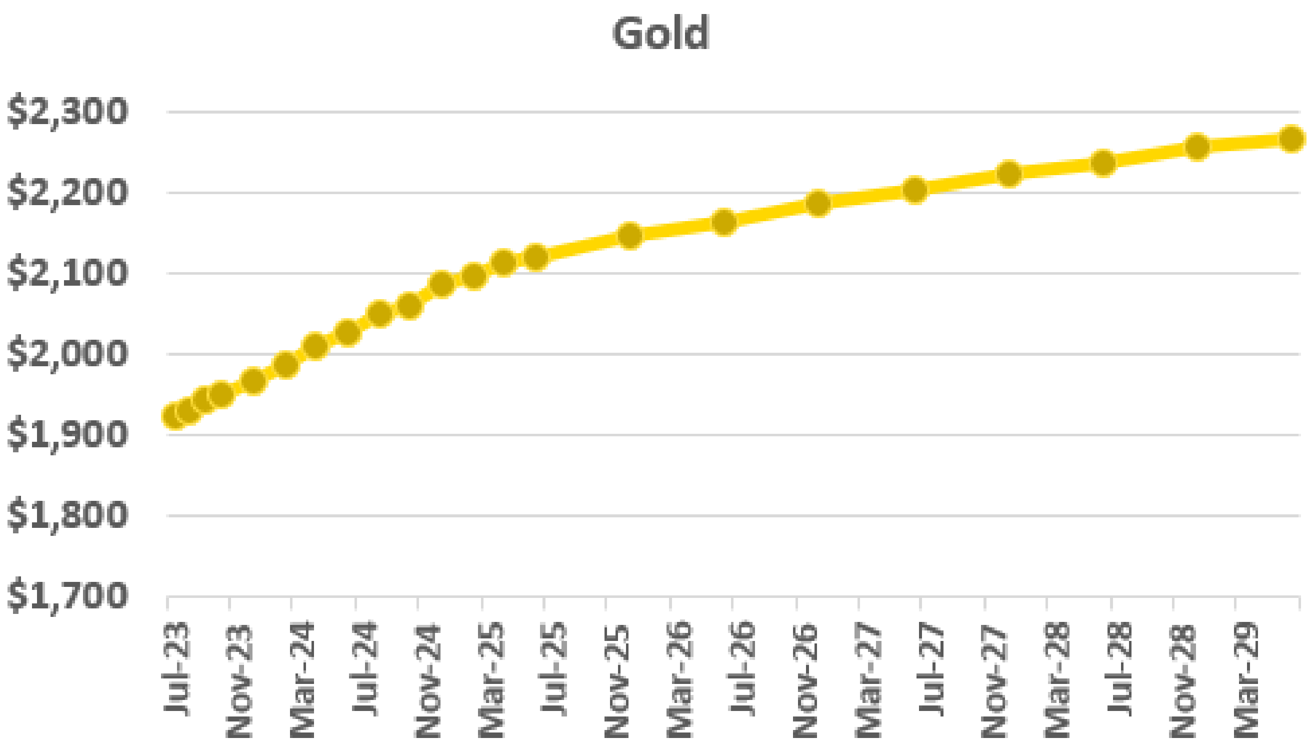
Contango, Backwardation, and Convergence to Spot (XLS)

Contango – Futures prices higher than the spot prices



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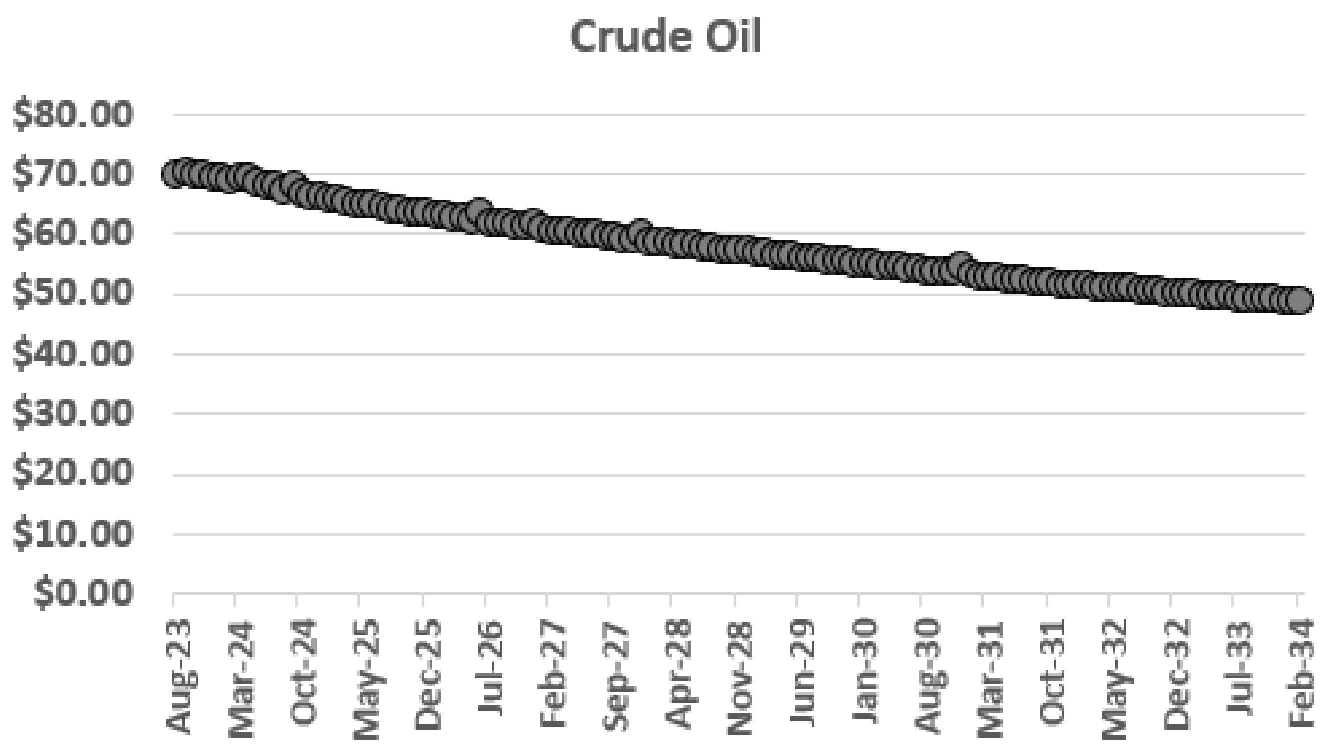
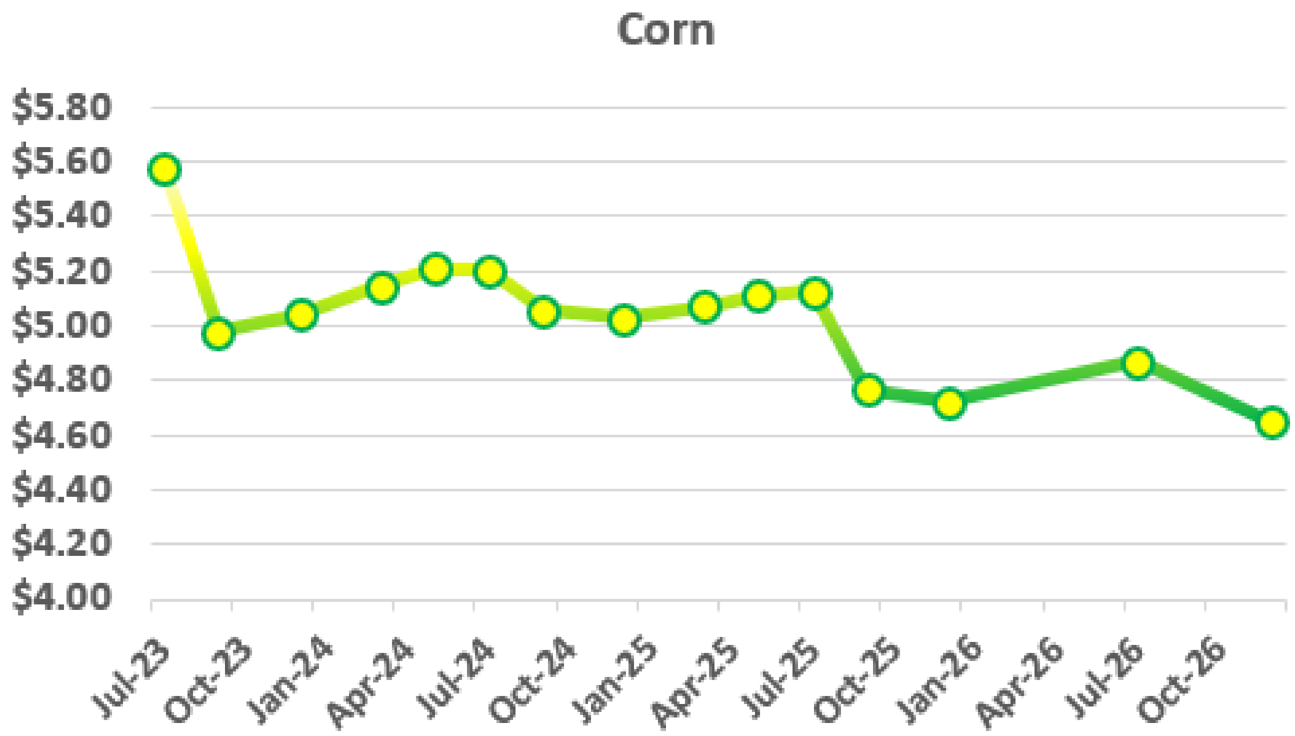
Contango, Backwardation, and Convergence to Spot (XLS) (cont.)

Backwardation – Futures prices lower than the spot prices



Contango, Backwardation, and Convergence to Spot (XLS) (cont.)

Mixed – Some futures prices higher, and some lower, depending on the maturity



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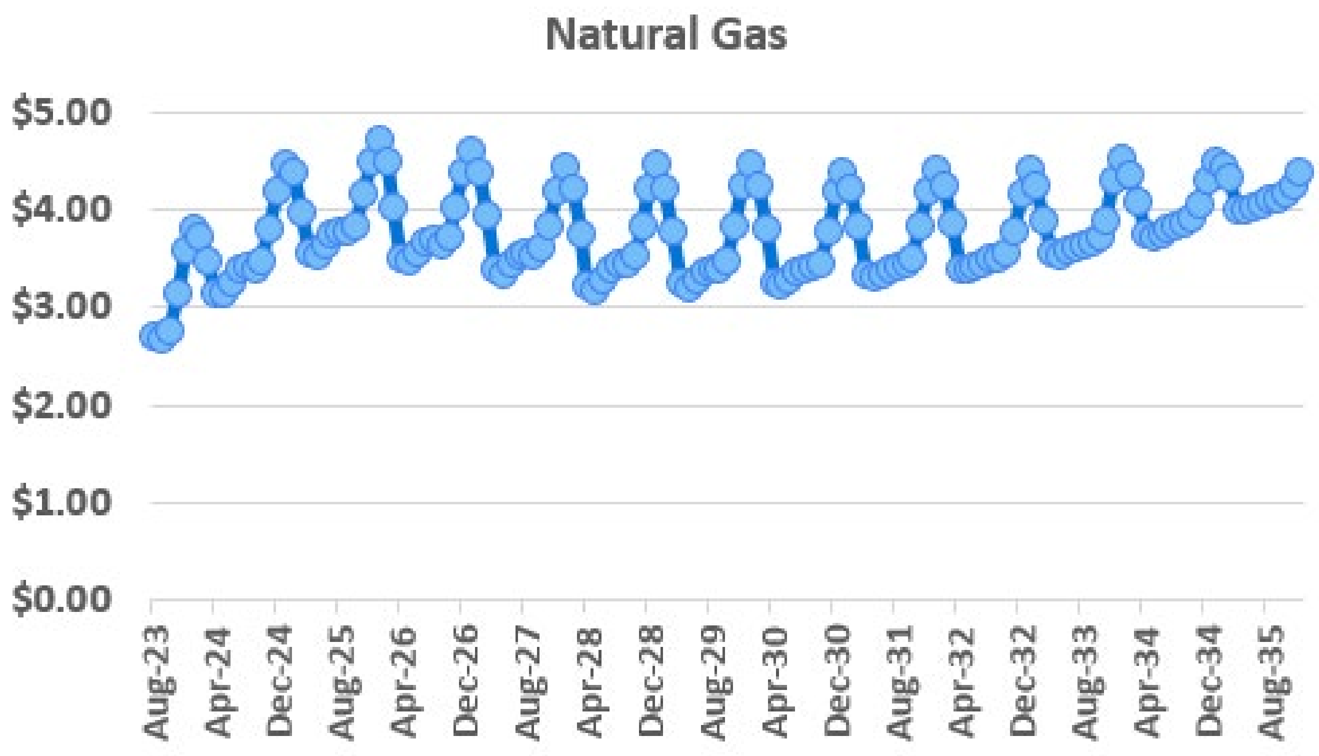
Contango, Backwardation, and Convergence to Spot (XLS) (cont.)

Mixed – Some futures prices higher, and some lower, depending on the maturity



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Contango, Backwardation, and Convergence to Spot (cont.)

Convergence to Spot

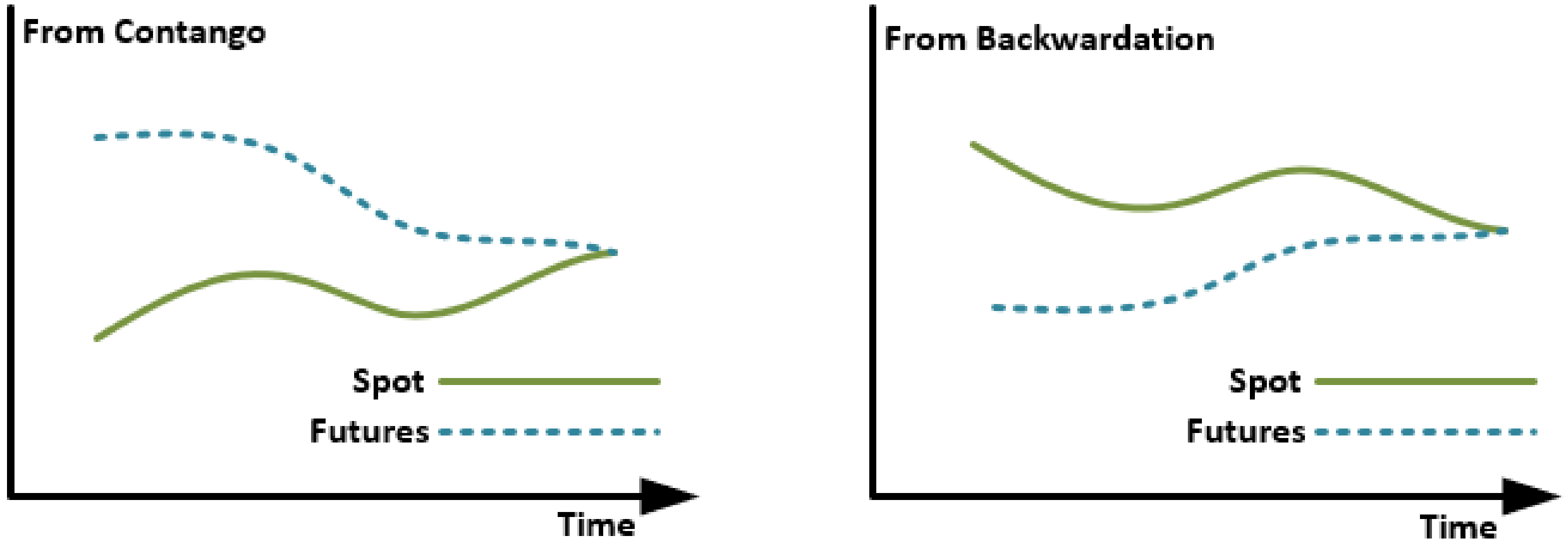

Image Source: Inspired by GARP, Financial Markets and Products, p.86. Our image via MS Visio

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Mark-to-Market and Its Effect on Hedgers

Mark-to-Market – With daily MtM and daily settlement of variation margin, all profits and losses for futures are recorded daily, and by normal accounting rules in the period that they are settled.

- Futures used for qualified hedges can be granted an exception and defer any gains or losses until the end of the contract.
- To qualify, hedge must be fully documented, with the hedged item clearly identified. There must be an economic relationship between the futures and hedged item to be deemed effective. Effectiveness must be periodically tested.

Tax liabilities when hedging

- Daily settlement under normal rules can lead to tax obligations when hedging. Futures used for hedging can be exempt from taxes until the end of the contract. Note tax exemption rules are different from accounting exemption rules.
- For a future to qualify as a tax hedge, it must be entered into in the normal course of business to reduce risk exposures.

Without qualified exemptions for accounting and taxes, the daily settlement can create high earnings volatility and unwanted tax liabilities.

Chapter 7:
Futures Markets

Key Concepts:

- Futures Specifications and Terms
- Role of Exchanges in Futures Trading
- Mechanics of Futures Trading and Settlement
- Contango, Backwardation, and Convergence to Spot
- Mark-to-Market and its Effect on Hedgers

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