

## Brief Overview of Futures and Options in Risk Management

Basic Definitions:

**Derivative Security:** A security whose value depends on the worth of other basic underlying variables. E.G. Futures, Options, Forward Contracts, Swaps. A derivative is a financial instrument whose value is derived from that of another security. Consequently, the worth of a derivative contract is **contingent** of that of another investment [stock, fixed income security, commodity, etc.].

**Contingent Claims:** A stock option that is a derivative security whose value is contingent on the price of the stock.

Derivatives can be used in one of two ways: (1) to hedge an underlying position where an investor hedges financial risk in the cash market by taking the opposite position in a derivative contract or (2) to speculate by using the derivative security to implicitly buy or sell an underlying security on a leveraged basis.

Contract Overview:

A **futures contract** is a transferable agreement to make [short] or take [long] delivery of a standardized amount and designated quality, at a specified price, at a specified date in the future some tangible [commodity, financial instrument] or intangible [index] entity.

Note: With a **futures contract there is the obligation to make or take delivery** NOT an option to make or take delivery.

A futures market consists of contracts to make or take delivery, however generally these contracts are negotiated with view of NOT making or taking delivery, but rather to:

- Speculate on anticipated price movements
- Hedge an existing or anticipated position in the cash market
- Arbitrage inconsistent prices among financial securities or commodities.
- Differences between Futures vs. Cash [Spot]Market

The majority of contracts are settled by **offset**, which means that prior to expiration, the owner of the futures contract will take the opposite position by purchasing or selling a futures contract to offset the current futures position.

Futures Market

### Organized Exchange

- [Auction, Open Outcry] Deal, Broker, Direct
- Performance Guaranteed [by Clearinghouse]
- Contract Standardization
- Transferability
- High degree of liquidity and information on price of the financial security

Fixed location, fixed trading hours

Brokerage fees charged Brokerage fees or Bid/Asked Spread

## Margin Requirements

Contracts generally settled by offset

Regulated by CFTC Loosely regulated by the SEC under SEC Acts of 1933 and 1934

## The Futures Market

A **futures contract** is a commitment to buy or sell a specific commodity, financial instrument or index, of designated quality at a specified price at a specified date in the future.

The **futures market** consists of contracts to make or take delivery in commodities, financial instruments or indexes. The intent of traders in this market is to take one of three possible positions:

- (1) Speculate on anticipated price movements
- (2) Hedge an existing or anticipated position that they may have in the cash (spot) market
- (3) Arbitrage inconsistent prices among financial securities

and depending on which of these strategies they are using, they will be in a position for several hours [short term, day trader] or many days [long term trader].

Although commodities and financial instruments are deliverable, the vast majority [98%] of all contracts are settled by offset rather than delivery sometime over their life. In the case of a financial index futures contract, there can be no delivery since it would be impossible to deliver all to the basket of securities into the contract. Consequently, a financial index futures contract will trade based on the market value of the index and settlement is at, wherever the index is at the time of offset.

A **forward contract** is a cash market transaction in which two parties agree to the purchase and sell of a commodity or financial instrument at some future time under such conditions as the two agree.

Note: The forward contract is a negotiated contract, and generally, one that is similar to a European call, you don't know whether you have made or lost money in the transaction until the time of expiration.

With the marking to market of a futures contract, you will know whether you are making or losing money and have the ability to exit the contract at any time prior to expiration.

## Differences between Futures and Forwards Contracts

### 1. Terms and Conditions of the Contract

**Forward:** Negotiated, subject to interpretation, min. size: \$ 1 million for competitive price

**Futures:** Standard provisions, not exceptions, delays in performance penalized, min. size: \$100K

### 2. Margins

**Forward:** No initial margin required unless negotiated, no daily mark to market until delivery

**Futures:** Initial margins are always required, posted in cash or T-Bills, oversight by the CBOT Clearing Corp., maintenance margin required to maintain initial margins requirement.

### 3. Liquidity

Forward: Very difficult because the contracts are custom and in order to unwind them you must have both parties agree to have some other entity take over a position. [Low]

Futures: Can be offset at any time by buying or selling a contract with the same expiration date and contract characteristics. [High]

### 4. Pricing

Forward: Negotiated through a dealer intermediary or directly with the parties. Price is determined on what may be viewed as mutually beneficial and agreeable.  
Spread on fixed rate commitments: 2/32 to 8/32

Futures: Prices are displayed nationally in real time and is based on what the market will bear for each contract. Spread on fixed rate contracts: 1/32

### 5. Accounting

Forward: mark to market only at the time of expiration [European futures contracting]

Futures: mark to market daily based on how the contracts are being valued in the market [American Futures Contracting].

### 6. Credit Risk

Forward: Only as good as either party in terms of fulfillment of the contract, which will not be completely known until expiration.

Futures: Trades are guaranteed by a clearing broker and the CBOT Clearing Corp.

Summary: Futures and forward markets are designed to let people eliminate price risk inherent in certain financial transactions that call for future delivery of money, financial instruments, or a commodity. These markets will also allow for positions to be taken relative to financial indexes to be able to hedge price risk associated with large baskets of commodities or financial instruments. In this case, the futures position can be settled by offset, whereas, the forward can only be resolved through negotiation or a final determination of gain/loss at time of expiration

### 7. Delivery

Forward: tailored to fit the needs of participants.

Futures: delivery date and contract size standardized.

## 8. Commissions

Forward: Bid/Ask Spread

Futures: Published rates [either flat or based on size of contract]

## 9. Security Deposit

Forward: Negotiable

Futures: 3 to 8% of the contract position

## 10. Accessibility and Regulation

Forward: Mostly large customers who contract amongst a large set of financial institutions; Self regulating

Futures: Anyone who can come up with the initial commission and pay margin; CFTC, SEC and the Exchanges

Futures and forward markets are designed to let individuals and organizations eliminate price risk inherent in transactions that call for future delivery of money, a security or commodity. They do so by allowing for the establishment of the terms of exchange prior to the scheduled delivery date.