

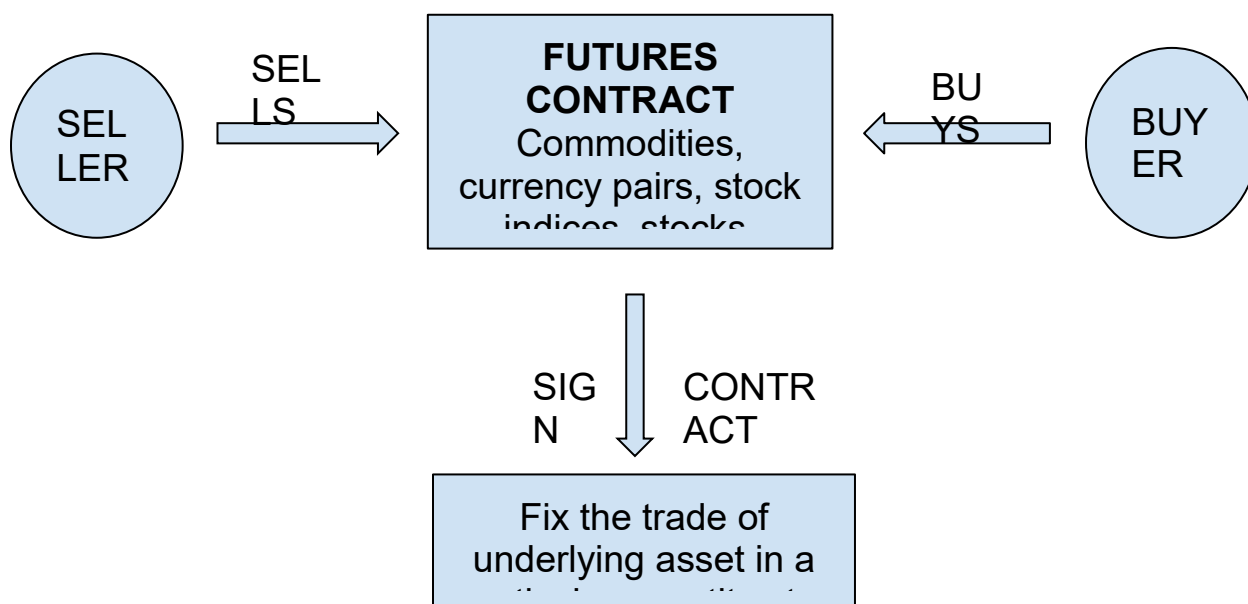
Basics of Futures

Our document aims to give the reader a beginner-level understanding of the futures markets and their working. Derivatives can be an overwhelming topic for beginners. We attempt to make futures (a type of derivative contract) a tad more accessible when you attend the EPAT lectures that talk about them. We cover it in the following manner:

- Explain what futures mean,
- How they are priced,
- Key terminology,
- How they differ from equities,
- Different types of futures, and
- Lastly, understanding futures with the help of an example.

Definition:

Consider a situation where an individual wants to lock in the price of a particular commodity or asset today. The actual transaction happens at a future date (this arrangement is not possible with equities). The future date is agreed upon by the buyer and seller today. Such an arrangement is called a futures contract.



-Source: <https://www.wallstreetmojo.com/futures/>

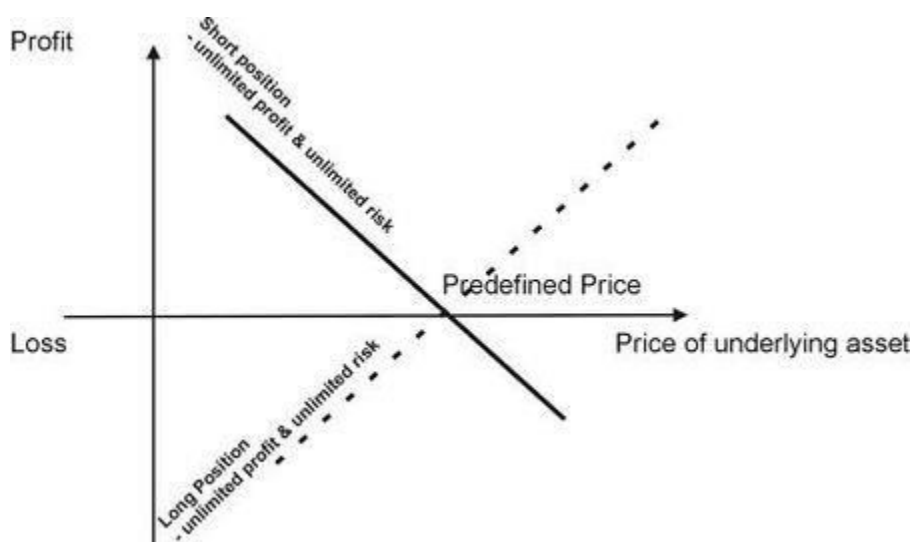
Positions in futures:

- **LONG FUTURES**

A **long futures position** refers to a **buy position**. We assume this position when we expect the future price of the asset/commodity to rise. The position holder continues to profit as long as the underlying price keeps rising. However, there is no limit to the loss borne if the price declines.


- **SHORT FUTURES**

A **short futures position** refers to a **sell position**. We assume this position when we expect the future price of the asset/commodity to fall. The position holder continues to profit as long as the underlying price keeps falling. However, there is no limit to the loss borne if the price increases.



-Source: <https://ceopedia.org/index.php/Futures>

Futures pricing:

Quote As on Oct 07, 2022 11:15:22 IST 

Nifty 50 - NIFTY

| [Index Watch](#) | [Option Chain](#)

Index Derivatives Derivatives
 Stock Derivatives
 Currency

Instrument Type: Index Futures Symbol: NIFTY Expiry Date: Option Type: Select Strike Price: Select...

17,286.65	Prev. Close	Open	High	Low	Close
▼ -38.80 -0.22%	17,325.45	17,301.10	17,353.95	17,247.00	0.00

Fundamentals	Historical Data
	Print
Traded Volume (contracts)	77,256
Traded Value * (lacs)	6,68,055.04
VWAP	17,294.58
Underlying value	17,270.05
Market Lot	50
Open Interest	1,21,56,450
Change in Open Interest	-40,500

Order Book	Intra-day		
Buy Qty.	Buy Price	Sell Price	Sell Qty.
450	17,286.00	17,286.65	150
900	17,285.00	17,286.70	50
400	17,284.05	17,286.75	300
50	17,284.00	17,286.80	50
100	17,283.95	17,286.95	50
4,59,000	Total Quantity		4,43,900

Source: NSE India

The futures price depends on the underlying asset. If the price of the underlying rises, the futures prices should rise and vice versa. However, in reality, this is not the case, as seen from the snapshot above. As we can see, NIFTY futures are trading at 17,286.65, whereas the spot price of NIFTY is 17,270.05. You might be wondering why the difference. The price difference is attributable to the 'Spot – Future Parity'. It is the difference between the spot and futures price that arises due to variables such as *interest rates, dividends, time to expiry*, etc. Put simply, the futures price would be equal to the spot price of the underlying adjusted for interest rates, the time factor, dividends, etc. This leads to the **futures pricing formula**.

$$\text{Futures Price} = \text{Spot price} * (1 + r_f) - d$$

Where:

r_f - risk-free rate

d - dividend

Key terminology:

- **LOT SIZE**

Futures are standardized contracts. If a trader wants to take a position in the futures market, she cannot buy just one share. Instead, she is required to buy in multiples decided by the

exchange. The lot size is the minimum number of shares to be purchased to take a position in the futures market. The lot size varies from security to security.

- **CONTRACT VALUE**

Contract value is the product of the current futures contract price and the lot size of the contract. Contract value keeps fluctuating with the futures price change.

- **CONTRACT EXPIRY**

The day on which the contract's final settlement takes place. For example, in Indian markets, every future contract expires on the last Thursday of every month.

- **INITIAL MARGIN**

At the time of entering a futures contract, the broker requires a certain percentage of a contract value to be deposited into a trading/margin account which is known as the initial margin.

- **MARK-TO-MARKET**

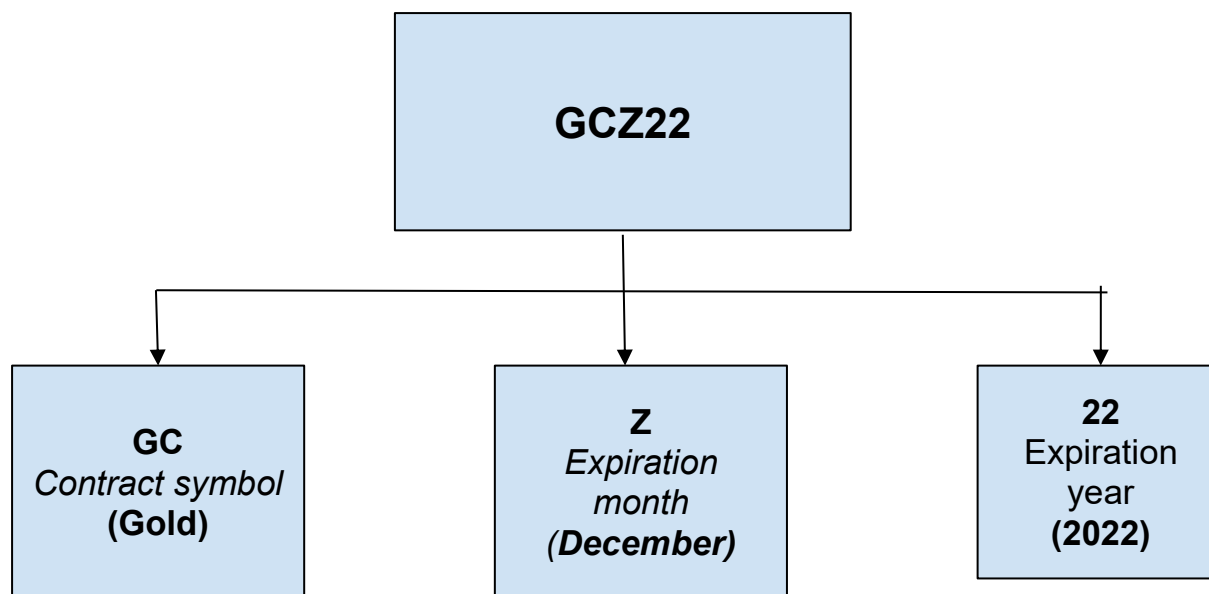
In the futures market, at the end of each trading day, depending upon the futures closing price, the margin account is adjusted to reflect the investor's gain or loss.

- **MAINTENANCE MARGIN**

Investors are required to place margins with their brokers before they are allowed to trade. The investor receives a margin call when the account balance falls below the maintenance margin, and the investor is expected to reload the margin account to the initial margin level before trading on the next day.

Ticker symbols

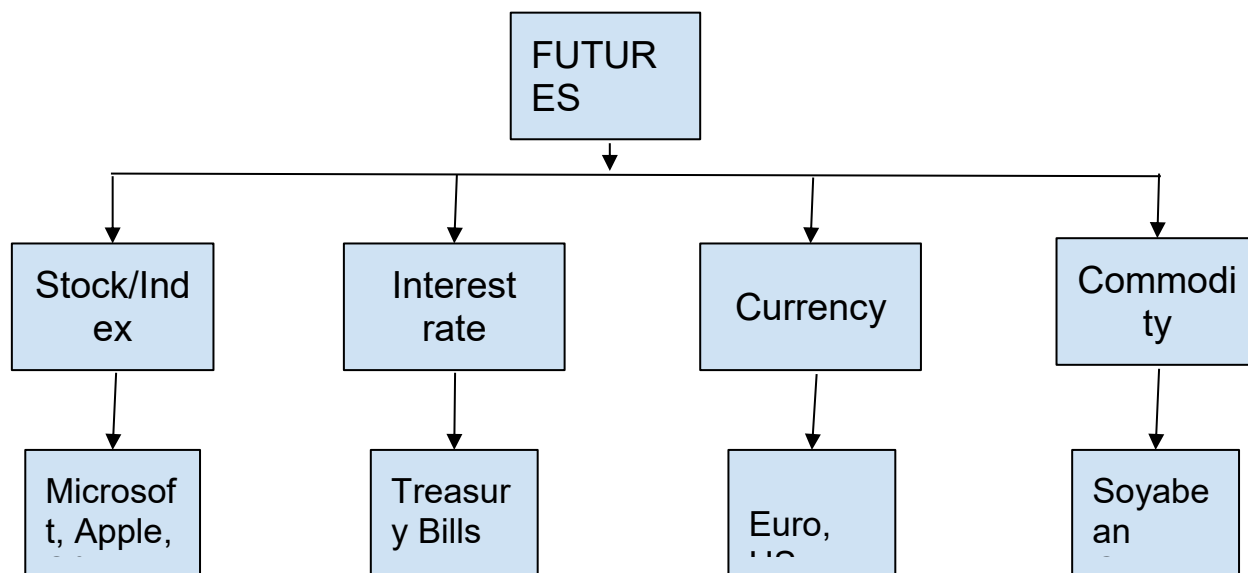
Let's consider a ticker symbol, say **GCZ22**. This can be broken down into three parts:



Differences between equities and futures

FUTURES	EQUITIES
Represent a commitment to buy or sell something in the future at an agreed-upon price	Represent ownership of a corporation
Can take profit from upward, downward or sideways movement of the underlying security	You can profit only from the upward movement of the stock, except for in case intraday of intraday trading
Fixed maturity/expiration date, usually less than one year	As long as the company remains solvent, the stock of the particular company remains.
Depending on market fluctuations, the investor might lose more than the initial investment.	Unless the stock is bought on margin, the maximum loss borne would be the entire investment
Does not involve delivery and is cash settled	It involves delivery i.e. credit of company stocks into the Demat account

Types of futures:



Example:

Let us understand futures' mechanism with an illustration. A trader wants to speculate on the crude oil price by entering into a futures contract in May 2022. She believes that the price of crude oil will increase by November 2022. The price of the November 2022 crude oil futures contract is \$80.

Now the trader cannot buy just one unit worth \$80. Since futures are standardized contracts, the trader buys 1000 units i.e.; she has taken a position worth $(\$80 * 1000 = \$80,000)$. The investor must deposit only a fraction of the amount i.e., the **initial margin**, with the broker.

Once the futures position is taken, due to the variation in crude oil prices from May to November, daily adjustment of the investor's account is made to reflect her loss or gain (**mark to market**). However, if the price fluctuations are too high, the broker might request the investor to deposit additional money into the margin account. This is known as the **maintenance margin**.

Consider two scenarios that could happen in November 2022 (In the case of US markets, the third Friday of the month), the price of crude oil could be:

- \$ 92 - In this case, if the investor sells the contract at \$92, she would make a profit of $(\$92-80)*1000 = \$12,000$
- \$ 75 - In this case, if the investor sells the contract at \$75, she would make a loss of $(\$80 - 75)*1000 = \$15,000$

Summary:

- A futures contract is a derivative instrument that allows an investor to commit now to the purchase or sale of an underlying asset at a specified price, with delivery and payment delayed until specified settlement date.
- Futures are extensively used in various markets to hedge against market volatility and by speculators who want to take advantage of price movements
- Futures price is dependent on the underlying asset/commodity, interest rates, dividends, etc.
- Futures are standardized contracts with daily settlement taking place in the margin account
- If the investor is bullish about the future of an asset, then she would opt for LONG futures contract of that asset and a SHORT futures contract if she is bearish about its future.
- Futures are available for different underliers, such as stocks, interest rates, commodities, indices, currency, etc.