Module 5 – Chapter 1 – Moving Averages

The moving average (MA) is one of the most popular and widely used technical indicators in the financial markets. It smoothens price data to create a single flowing line, which makes it easier for traders to identify the direction of the trend.

Definition:

A moving average simply averages a set of data points over a specific number of periods. The "moving" part of the name stems from the fact that as new data points become available, the oldest data points are dropped, and the average "moves" over time.

There are 2 types of moving averages

1) **Simple Moving Average (SMA):** It calculates the average of a selected range of prices, usually closing prices, by the number of periods in that range.

Formula: SMA = (Sum of Prices over n periods) / nFor instance, a 10-day SMA would add up the closing prices from the last 10 days and divide by 10.

2) **Exponential Moving Average (EMA):** It places a greater weight and significance on the most recent data points. The weighting applied to the most recent price depends on the specified period of the EMA.

Formula: EMA_today = (Close - EMA_yesterday) x Multiplier + EMA_yesterday Where, Multiplier = 2 / (Number of periods + 1)

What It Shows:

1) **Trend Direction:** If the moving average is rising, this indicates that the asset's price is in an uptrend. Conversely, if the moving average is declining, this could suggest a potential downtrend.

2) **Support and Resistance Levels:** Prices often respect moving averages in a way that they may bounce off them. This makes moving averages potential dynamic support or resistance levels.

3) **Price Crossovers:** When an asset's price crosses above or below a moving average, it may signal a potential change in trend direction.

How to Trade Moving Averages

1) Crossover Strategy:

Golden Cross: When a short-term moving average crosses above a long-term moving average, it may indicate a bullish signal. For example, when the 50-day SMA crosses above the 200-day SMA, it can be viewed as a bullish "Golden Cross."

Death Cross: The opposite of the Golden Cross. When a short-term moving average crosses below a long-term moving average, it suggests a bearish trend. An example is when the 50-day SMA crosses below the 200-day SMA.

2) Price Touches:

Support in Uptrends: When the price of an asset is in an uptrend and retraces back to touch a rising moving average, traders might look for buy opportunities expecting the trend to continue.

Resistance in Downtrends: Conversely, if the price is in a downtrend and rallies to touch a declining moving average, it might act as resistance and traders may look for selling opportunities.

3)Moving Average Envelopes:

Moving average envelopes are percentage-based envelopes set above and below a moving average. The type of moving average used with the envelopes doesn't matter, so traders can use a simple, weighted, or exponential MA. These envelopes can act as potential areas of support and resistance.

Example: A 50-day moving average with a 5% envelope would produce bands 5% above and 5% below the 50-day moving average.

Caution: Like all technical indicators, the moving average has its limitations. It's imperative to use it in conjunction with other tools and analysis methods to confirm signals and make well-informed decisions.