1. Profitability Metrics:

• **Return on Investment (ROI): Measures the percentage gain or loss relative to the initial investment.**

**• Net Profit: The total profit from trading after deducting transaction costs, fees, and other expenses.**

**• Win Rate (Accuracy): The percentage of trades that are profitable out of the total number of trades.**

• Profit Factor: The ratio of gross profit to gross loss (e.g., a profit factor of 1.5 means the system generates 1.5 units of profit for every 1 unit of loss).

• Sharpe Ratio: A measure of risk-adjusted return, indicating how much excess return is generated per unit of risk (standard deviation).

• Sortino Ratio: Similar to the Sharpe ratio, but only penalizes downside volatility, making it more relevant for investors focused on downside risk.

2. Risk and Volatility Metrics:

• Maximum Drawdown: The largest percentage drop from a peak to a trough in the trading account balance. This shows the worst possible loss during the backtesting or live trading period.

• Value at Risk (VaR): Measures the maximum loss expected (with a given confidence level) over a specific time period.

• **Beta: Measures the volatility of the trading model relative to a benchmark, like the market index.**

• Alpha: The excess return of the trading model compared to a benchmark index, showing the added value of the strategy.

• Risk-to-Reward Ratio: Compares the potential reward of a trade to its potential risk. For example, a 2:1 risk/reward ratio means you’re risking $1 for every $2 in potential profit.

3. Consistency and Stability Metrics:

• Consistency of Returns: Measures how consistently the model generates returns. Stable returns over time are preferable to large spikes followed by big drawdowns.

• Annualized Volatility: Shows the degree of variation in returns over a year, which reflects how “smooth” the model’s returns are.

• Hit Rate of Positive Returns: Measures how frequently the model produces positive returns over different periods (weekly, monthly, etc.).

4. Trade Execution Metrics:

• Average Trade Return: The average return per trade, including winners and losers.

• Average Holding Period: The average time a trade is held, which can influence transaction costs and risk exposure.

• Slippage: The difference between the expected price of a trade and the actual price at which it is executed.

• Transaction Costs: The cumulative cost of executing trades, including commissions, spreads, and any other fees.

5. Risk-Adjusted Metrics:

• Calmar Ratio: The annualized return divided by the maximum drawdown. This measures how well the strategy performs relative to its worst losses.

• Treynor Ratio: Measures returns earned in excess of what could have been earned on a risk-free investment per unit of market risk taken.

6. Benchmark Comparison:

• Outperformance (Alpha): The extent to which the trading model outperforms a benchmark (e.g., S&P 500, sector index).

• Tracking Error: The difference between the performance of the trading model and the performance of the benchmark. Low tracking error indicates the strategy closely follows the benchmark, while high tracking error suggests more divergence.

7. Tail Risk Metrics:

• Conditional Value at Risk (CVaR): This metric measures the expected losses in the worst-case scenarios beyond the VaR threshold.

• Downside Deviation: Measures how much the returns deviate below a specific threshold (usually zero or a risk-free rate), focusing only on negative returns.