Project goal - test the impact of technical analysis on stock returns and integrate technical analysis into predictive modeling

Task: Generate a list of trend-following strategies and indicators

1. Common trading strategies and indicators

**Strategies**

**Moving Average Ribbons:** Multiple moving averages of different periods are plotted on the chart, creating a ribbon-like pattern.

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**Price Channel:** A price channel is created by drawing parallel lines above and below the price chart, encompassing most of the price action. Traders can enter long positions when the price bounces off the lower channel line and exit when it reaches the upper channel line, indicating potential trend reversals.

**Turtle Trading:** A famous trend following strategy developed by Richard Dennis and William Eckhardt. It involves trading breakouts of a defined price range over a specific time period, using various indicators like Donchian Channels and Average True Range (ATR).

**ADX Trend Strength:** This strategy uses the ADX indicator to identify strong trends. Traders look for high ADX readings and may enter positions when the ADX is rising, indicating a strengthening trend, and exit when it starts to decline.

**Trendline Breakout:** Trendlines are drawn on the chart to connect successive highs or lows. Traders enter long positions when the price breaks above a downward trendline or short positions when it breaks below an upward trendline, indicating a potential trend reversal.

**Volatility Breakout:** This strategy involves trading breakouts that occur when the price exceeds a certain percentage or standard deviation of its recent volatility. Traders aim to capture large price moves that often accompany periods of increased volatility.

**Indicators:**

**Average True Range (ATR)**: ATR measures volatility by calculating the average range between each period's high and low. Traders can use ATR to set stop-loss levels, position sizes, or determine volatility-based trading rules.

**Moving Average Convergence Divergence (MACD):** MACD combines two moving averages and oscillates around a zero line. Traders look for bullish crossovers (MACD line crosses above the signal line) as buy signals and bearish crossovers as sell signals.

**Stochastic Oscillator:** The Stochastic Oscillator compares a security's closing price to its price range over a specified period. It oscillates between 0 and 100, with readings above 80 indicating overbought conditions and readings below 20 indicating oversold conditions.

**Relative Strength Index (RSI)**: RSI measures the magnitude of recent price changes to determine overbought or oversold conditions. Readings above 70 indicate overbought conditions, while readings below 30 indicate oversold conditions.

**Moving Average Ribbon:** Similar to Moving Average Ribbons strategy, plotting multiple moving averages of different periods can provide visual cues for identifying trends

II. Different Approaches to trend following

**Trend following** can be divided into 2 different approaches.

* Systematic trading
* Discretionary trading

### **Systematic trading**

This approach is widely adopted by big hedge funds like Dunn, Winton, and MAN AHL.

Decisions like…

* How much to risk
* What markets to trade

The manager has to decide how much risk to accept, which markets to play, and how aggressively to increase and decrease the trading base as a function of equity change.

**Moving Average Crossover:**

Use two or more moving averages of different lengths not limited to 50-day (short-term) or 200-day (long-term). Also, try 10 vs. 21 days. And 21 vs. 50 days.

* Bullish Signal (Buy): When the shorter-term moving average crosses above the longer-term moving average, it generates a bullish signal. This crossover suggests a potential upward trend and serves as a buying opportunity.
* Bearish Signal (Sell): When the shorter-term moving average crosses below the longer-term moving average, it generates a bearish signal. This crossover indicates a potential downward trend and serves as a selling opportunity.

**Breakout Trading:** This strategy focuses on identifying significant price levels, such as support and resistance levels or chart patterns. When the price breaks out above resistance or below support, it indicates a potential trend continuation. Traders enter long or short positions accordingly.

**Price Channel Breakout:** This strategy involves identifying price channels, which are formed by drawing parallel trendlines around the highs and lows of an asset's price. Traders enter long positions when the price breaks above the upper channel line and short positions when it breaks below the lower channel line.

**Trendline Breakout:** This strategy uses trendlines to define the direction of the trend. When the price breaks above a downward trendline or below an upward trendline, it signals a potential trend reversal or continuation, respectively.

\*Implement risk management: Risk management is crucial in breakout trading. Traders typically set stop-loss orders below the breakout point for a long trade or above the breakout point for a short trade. This helps limit potential losses if the breakout turns out to be a false signal.

### **Discretionary trading**

* Has lesser defined rules that decide the entry, exit, risk management, and trade management.
* It requires a trader’s attention, trading based on technical analysis, with more intervention.
* Widely adopted by smaller individual traders.

**Chart Pattern Recognition:** Discretionary trend followers may use their judgment and experience to identify various chart patterns, such as triangles, head and shoulders, or double tops/bottoms. These patterns may suggest trend reversals or continuations, and traders make decisions based on their interpretation of the pattern.

Some common chart patterns include:

**Candlestick Analysis:** Candlestick patterns provide valuable information about the sentiment and behavior of market participants. Discretionary trend followers can analyze candlestick formations, such as doji, engulfing patterns, or harami, to identify potential trend shifts or continuations.

**Fundamental Analysis with Technical Confirmation:** Some discretionary trend followers incorporate fundamental analysis by considering economic indicators, news events, or company-specific factors. They combine this analysis with technical indicators or chart patterns to confirm or validate their trading decisions.

**Volatility Breakout:** Discretionary traders may use volatility indicators, such as Bollinger Bands or Average True Range (ATR), to identify periods of low volatility. When volatility expands, it may indicate the start of a new trend, and traders enter positions accordingly.

**Market Sentiment Analysis:** Discretionary trend followers can assess market sentiment through various means, such as monitoring news sentiment, social media sentiment, or options market data. By gauging the overall sentiment, they may align their trading decisions with prevailing market views.

Data from 2019, 1 ,10 ~ 2022, 2, 14

SPY (S & P 500)

QQQ (Nasdaq 100)

DIA (dow jone)