

# Introduction

This report provides detailed explanations of four key visualizations for each currency pair:

- Autocorrelation Function (ACF) Plot
- OHLC (Open-High-Low-Close) Trend Chart
- Rolling Means Plot
- Volume Trend Chart

These visualizations help analyze historical price behavior, identify trends, and support trading or forecasting decisions.

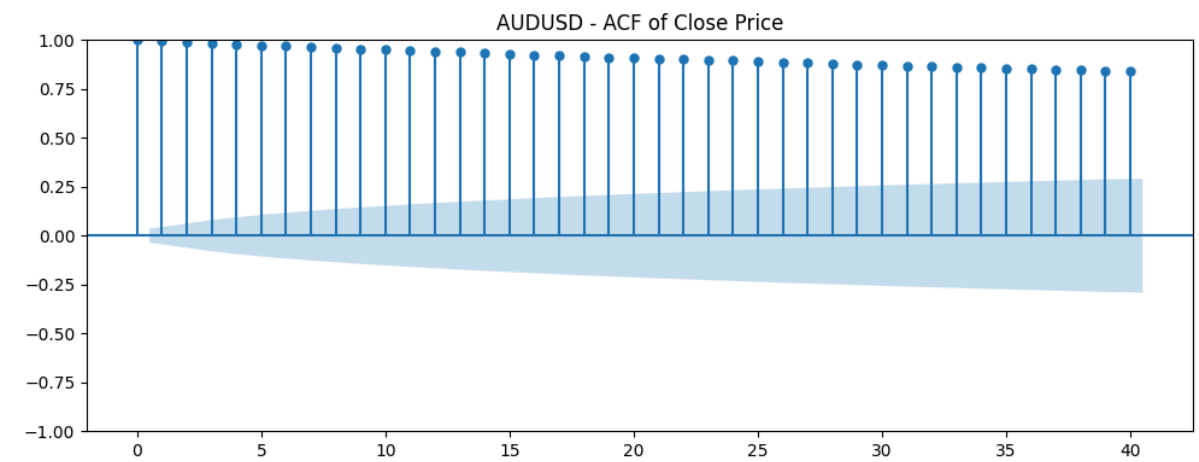
## Currency Pairs Covered

- AUDUSD
- EURUSD
- GBPUSD
- NZDUSD
- USDCAD
- USDCHF
- USDHKD
- USDJPY
- USDNOK
- USDSEK

### AUDUSD

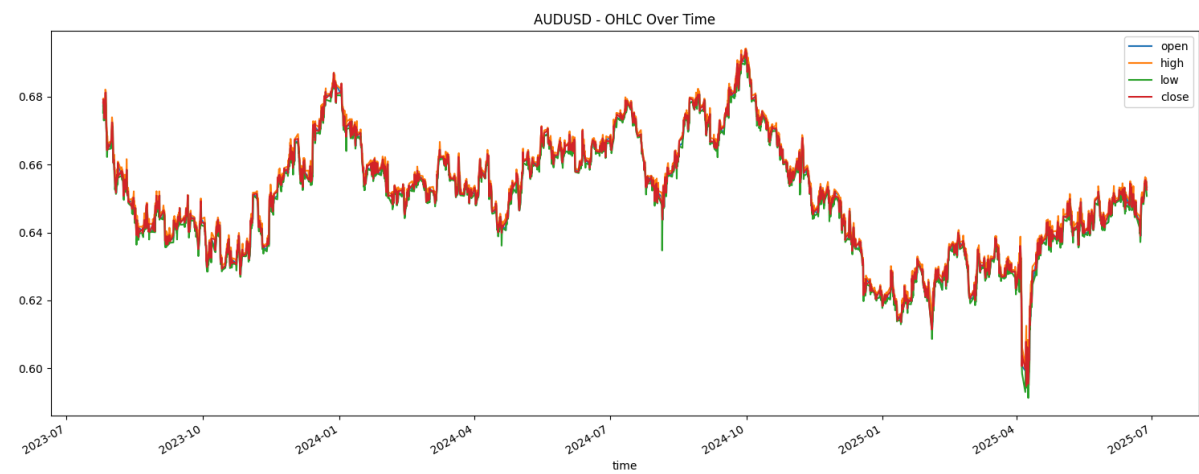
#### 1. ACF Plot

The Autocorrelation Function (ACF) plot for AUDUSD shows correlations at various lags. Peaks indicate the presence of autocorrelation or repeating patterns, suggesting that past price movements can help forecast future values.



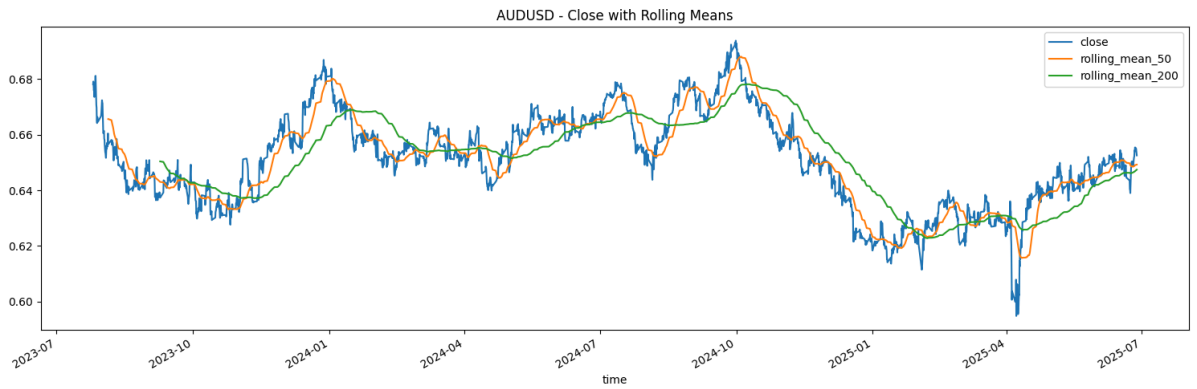
## 2. OHLC Trend

This chart visualizes the open, high, low, and close prices over time. It reveals trends, reversals, and price volatility, helping traders interpret candlestick patterns and market sentiment for AUDUSD.



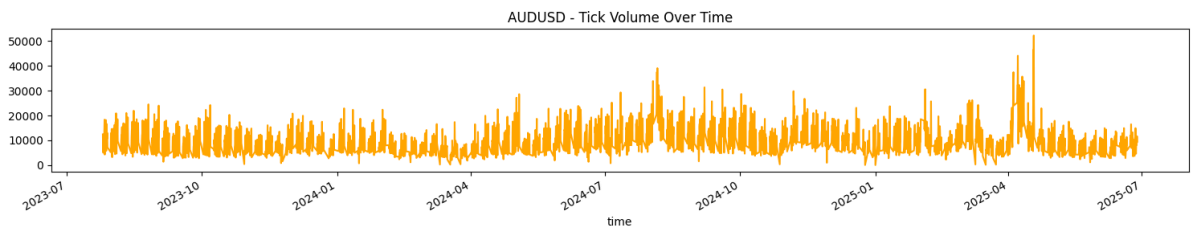
## 3. Rolling Means

The rolling mean smooths short-term fluctuations to highlight longer-term trends. This helps identify whether AUDUSD is in an uptrend, downtrend, or stable phase by reducing market noise.



#### 4. Volume Trend

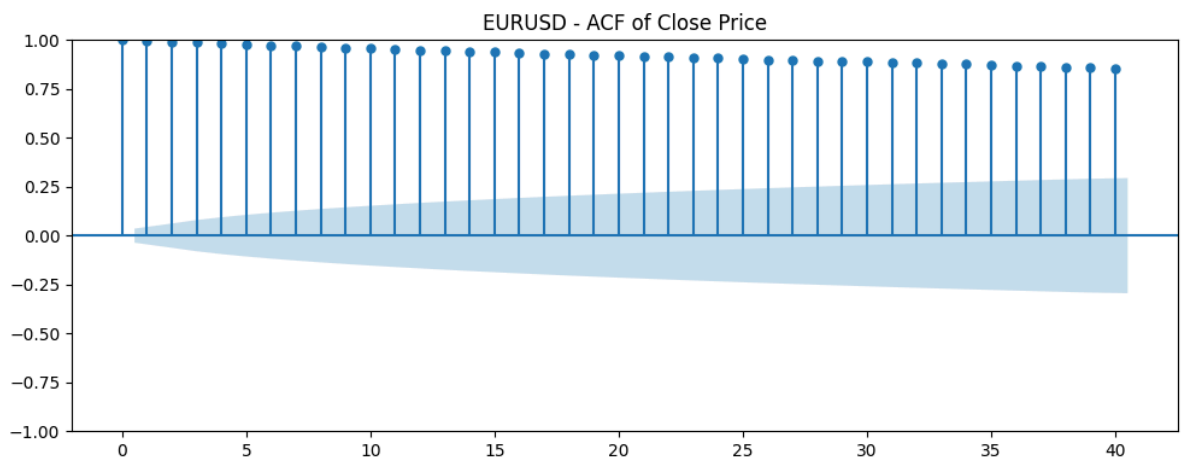
The volume trend chart shows changes in trading volume over time. Spikes can signal strong buying/selling interest or confirm breakouts in AUDUSD's price.



## EURUSD

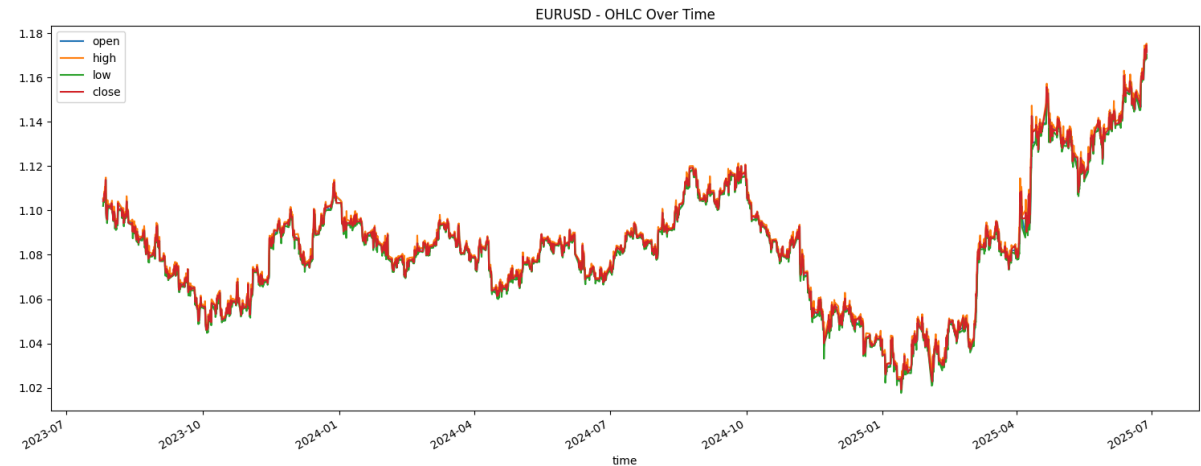
#### 1. ACF Plot

Displays the correlation of EURUSD's price series with its own lagged values. Significant peaks suggest the potential for forecasting models based on past price behavior.



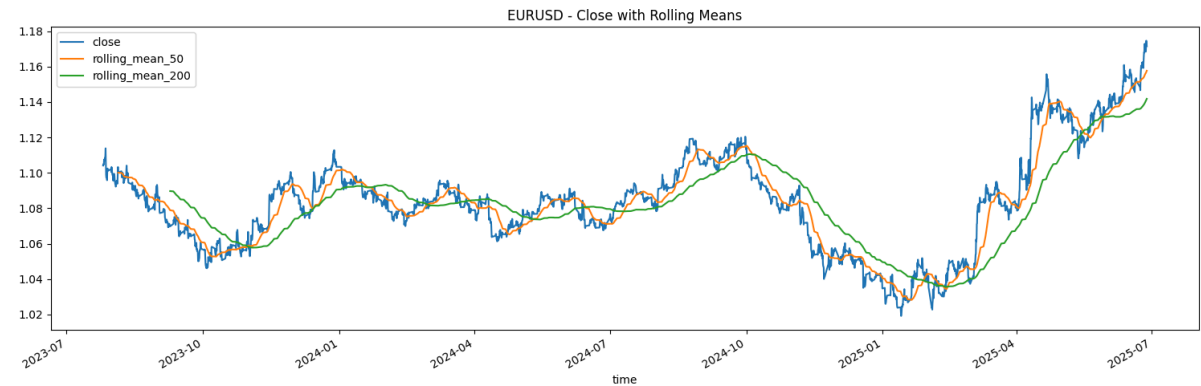
#### 2. OHLC Trend

Highlights daily price ranges (open, high, low, close). Patterns in this chart help traders spot support/resistance levels and market direction.



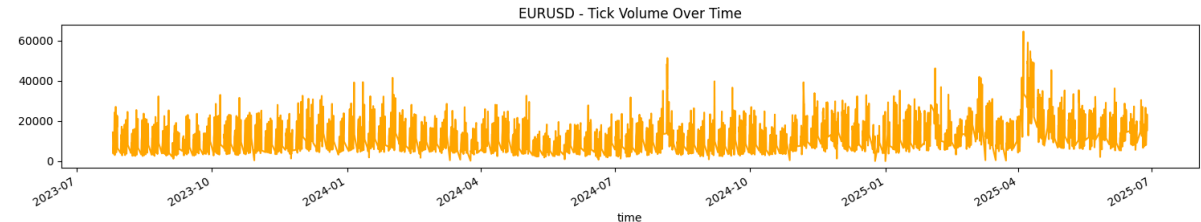
### 3. Rolling Means

Shows a smoothed average over time, revealing underlying EURUSD trends without short-term volatility.



### 4. Volume Trend

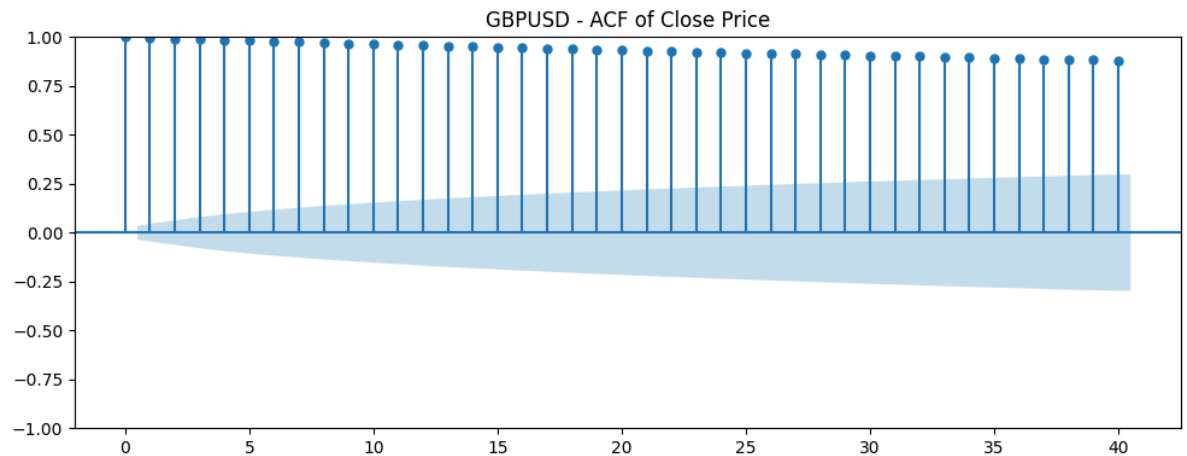
Indicates periods of high or low trading activity, confirming price moves or highlighting consolidation phases.



## GBPUSD

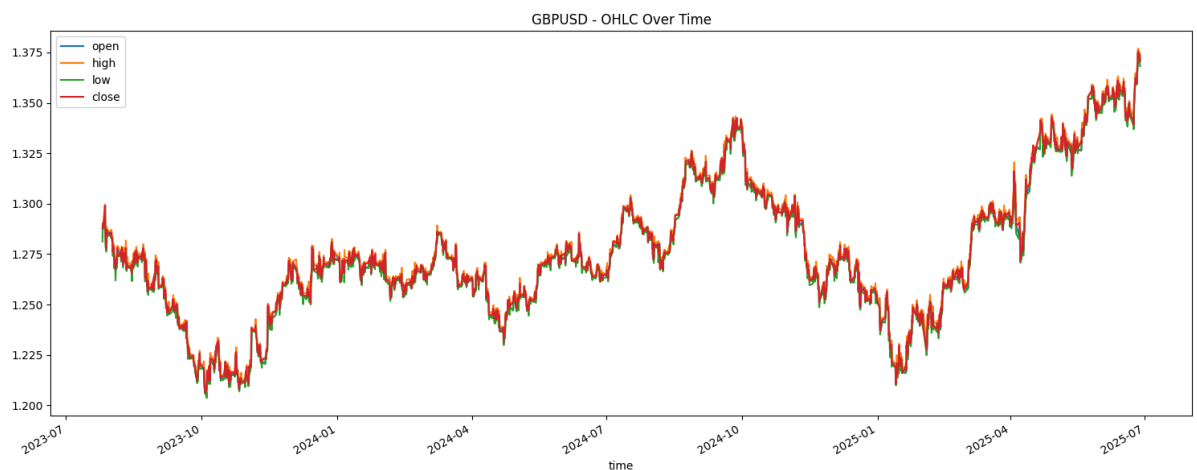
### 1. ACF Plot

Analyzes autocorrelations to detect repeating cycles or momentum effects in GBPUSD price data.



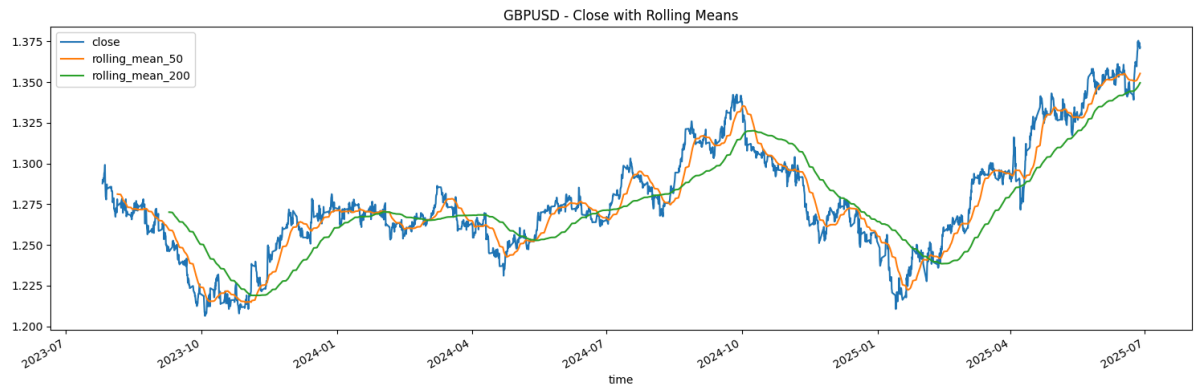
## 2. OHLC Trend

Captures the price range and directionality. Useful for spotting bullish/bearish candlestick patterns and overall trend shifts.



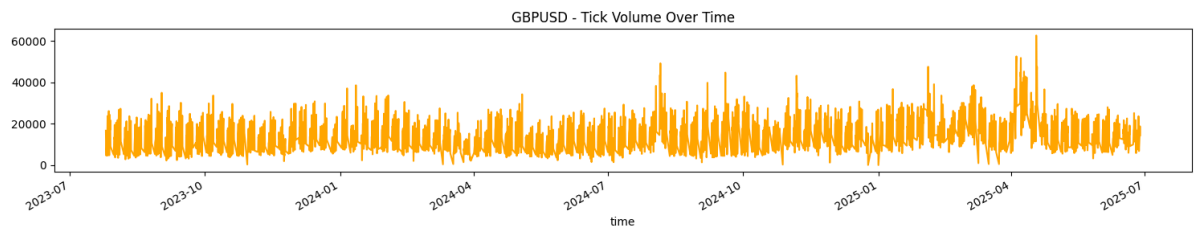
## 3. Rolling Means

Smooths price series to clarify persistent trends in GBPUSD's movement.



## 4. Volume Trend

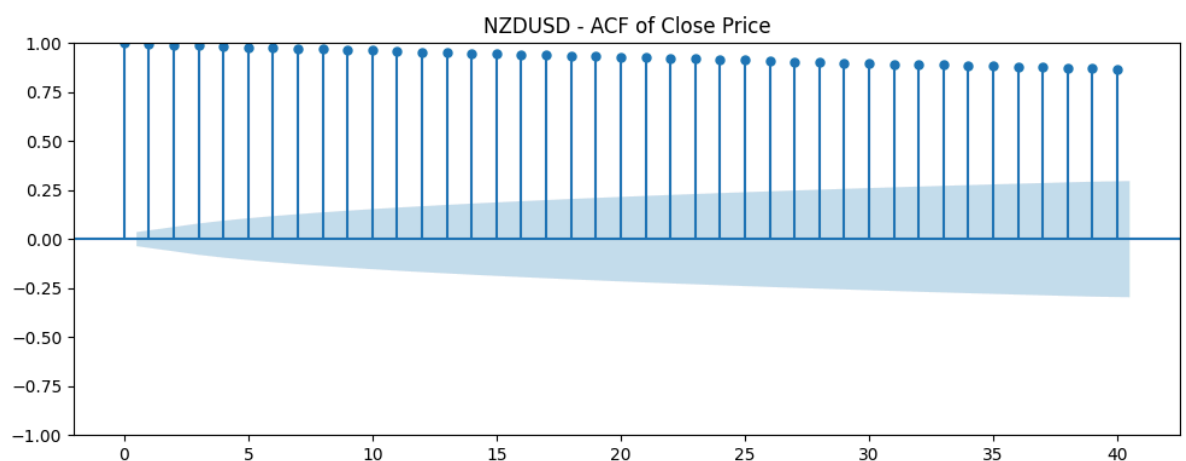
Highlights changing trader interest, with high volume often confirming price breakouts or trends.



## NZDUSD

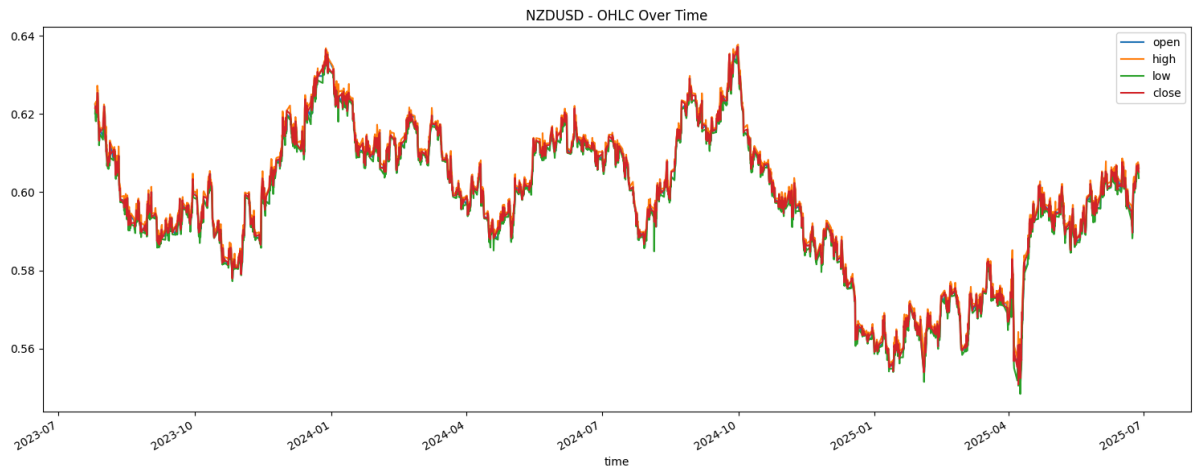
### 1. ACF Plot

Shows the strength of correlation across lags in NZDUSD prices, identifying potential seasonality or autocorrelation structures.



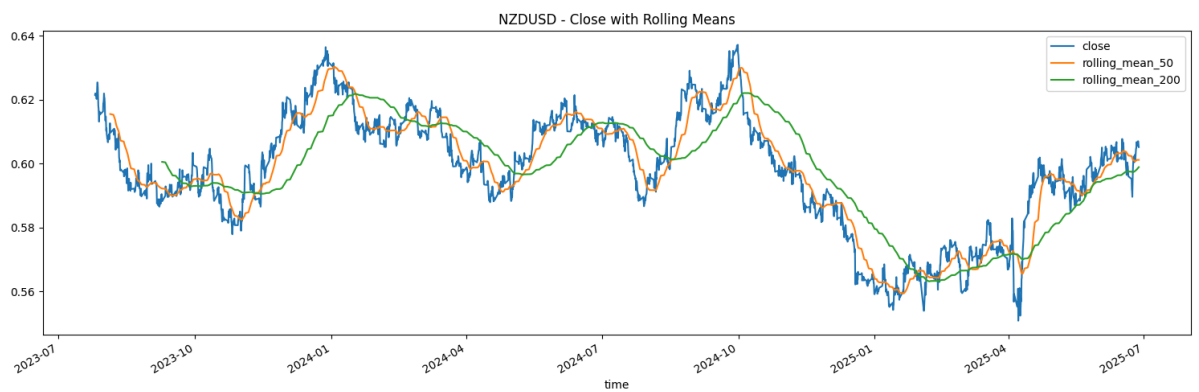
### 2. OHLC Trend

Visualizes price action and volatility, aiding technical analysis with candlestick patterns.



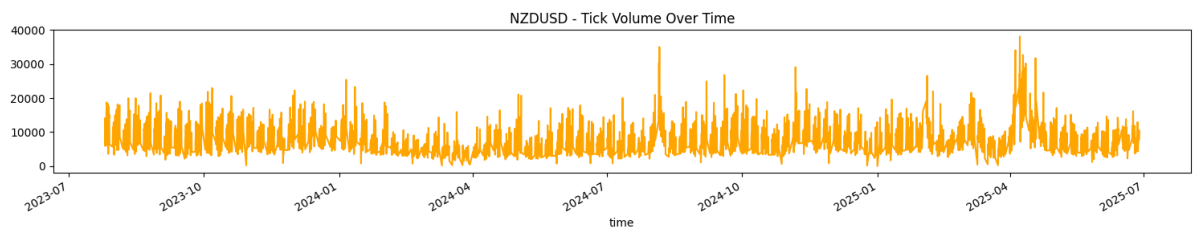
### 3. Rolling Means

Averages prices over time, reducing noise and showing dominant price trends for NZDUSD.



### 4. Volume Trend

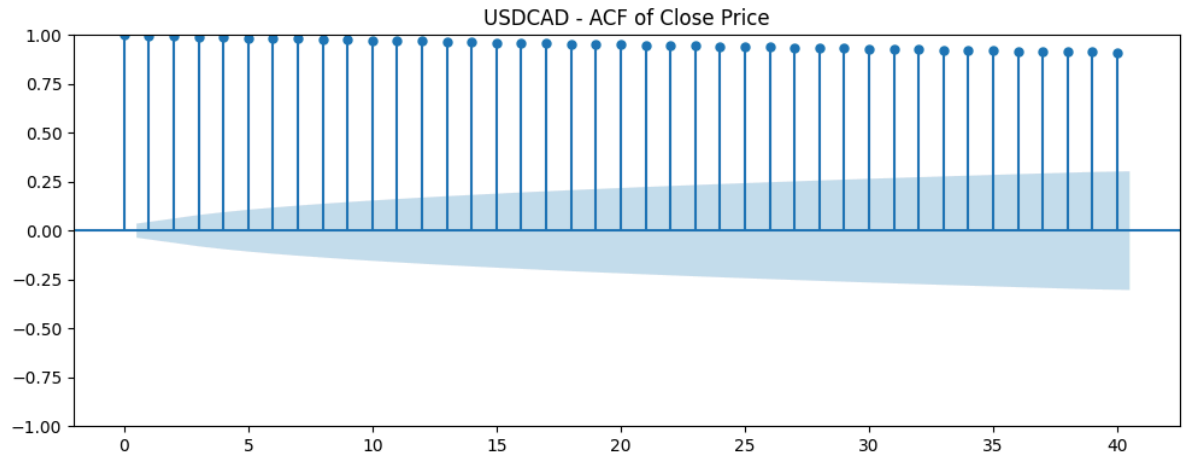
Reflects market participation levels, where volume surges can validate strong price moves.



## USDCAD

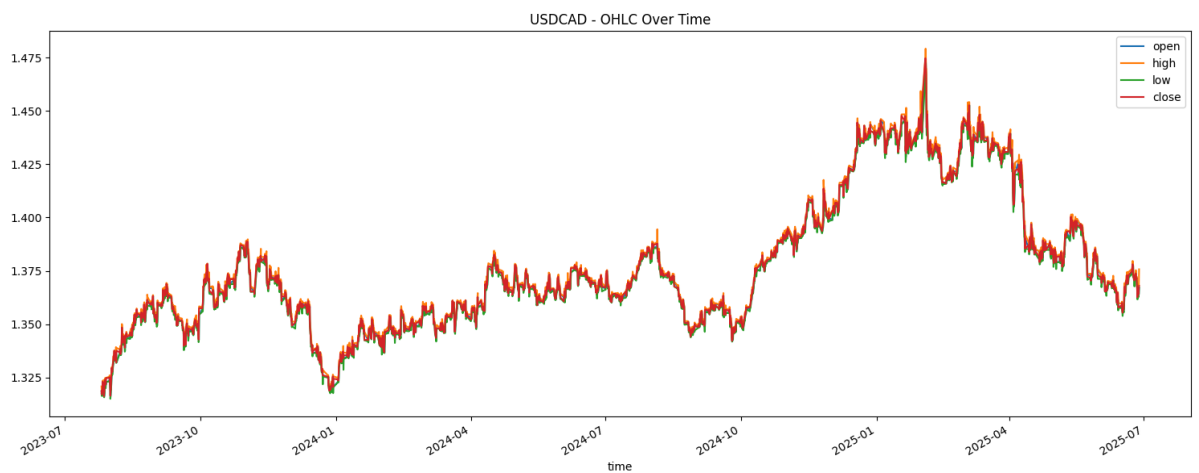
### 1. ACF Plot

Evaluates lagged relationships in USDCAD prices, helping detect predictable patterns.



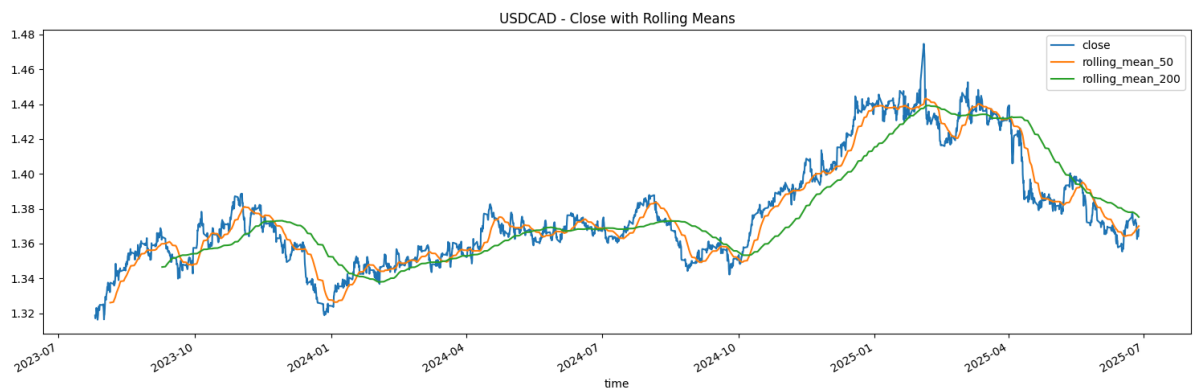
## 2. OHLC Trend

Displays price dynamics over time, useful for recognizing trend reversals or consolidation zones.



## 3. Rolling Means

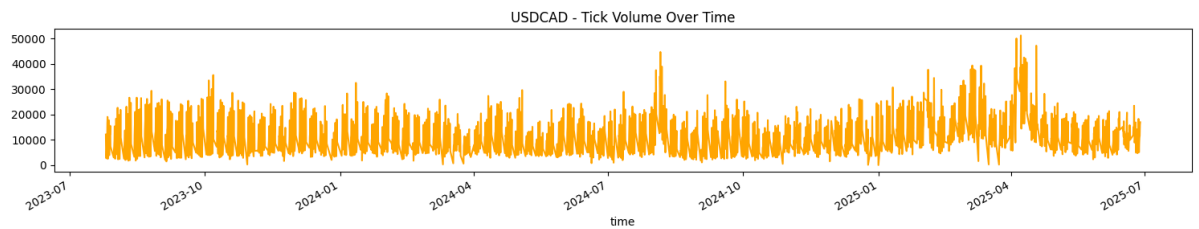
Highlights the underlying trend by filtering short-term fluctuations.





## 4. Volume Trend

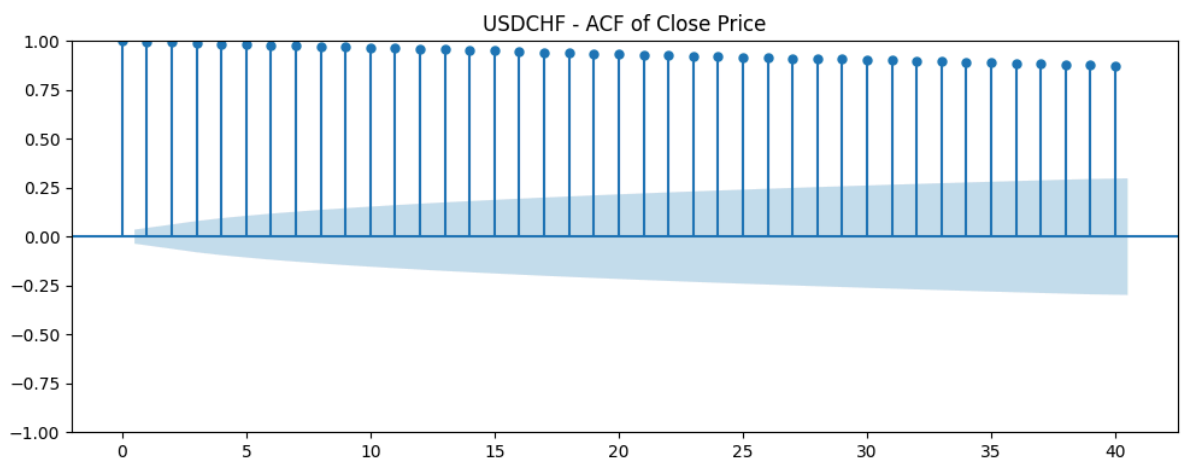
Tracks trading volume changes, signaling shifts in market participation and potential price breakouts.



## USDCHF

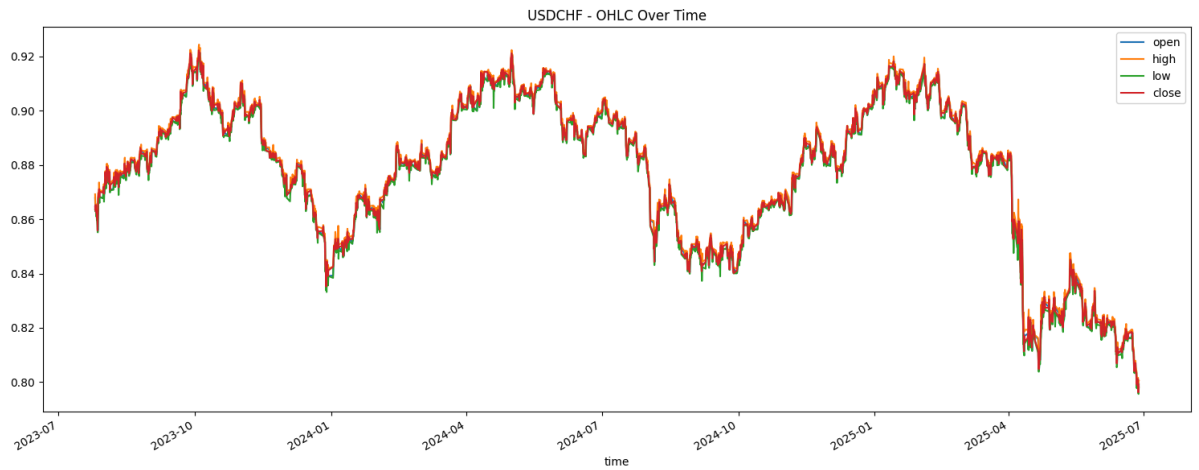
### 1. ACF Plot

Shows autocorrelation at different lags, indicating repeating cycles or momentum persistence in USDCHF.



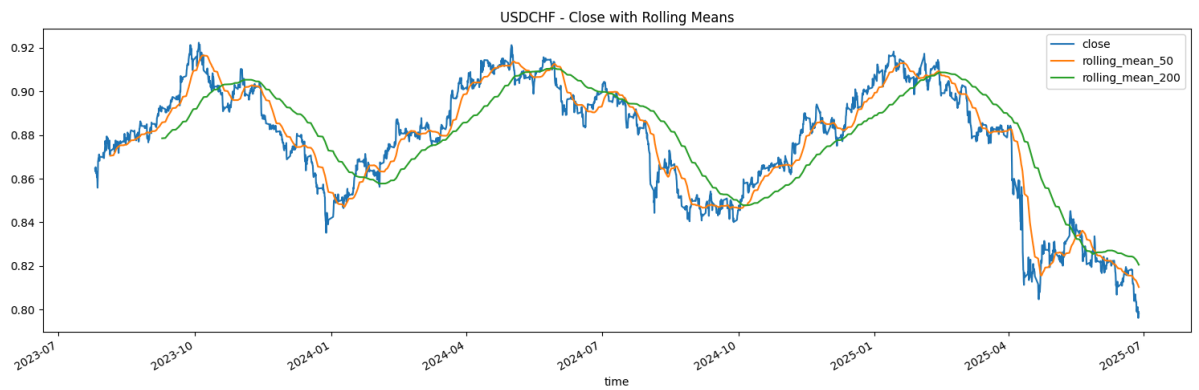
### 2. OHLC Trend

Depicts daily price action for assessing market direction, volatility, and reversal signals.



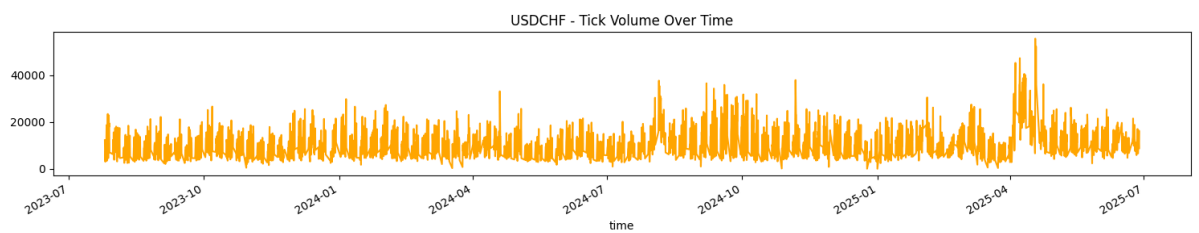
### 3. Rolling Means

Smooths price data to reveal the overall trend in USDCHF prices.



### 4. Volume Trend

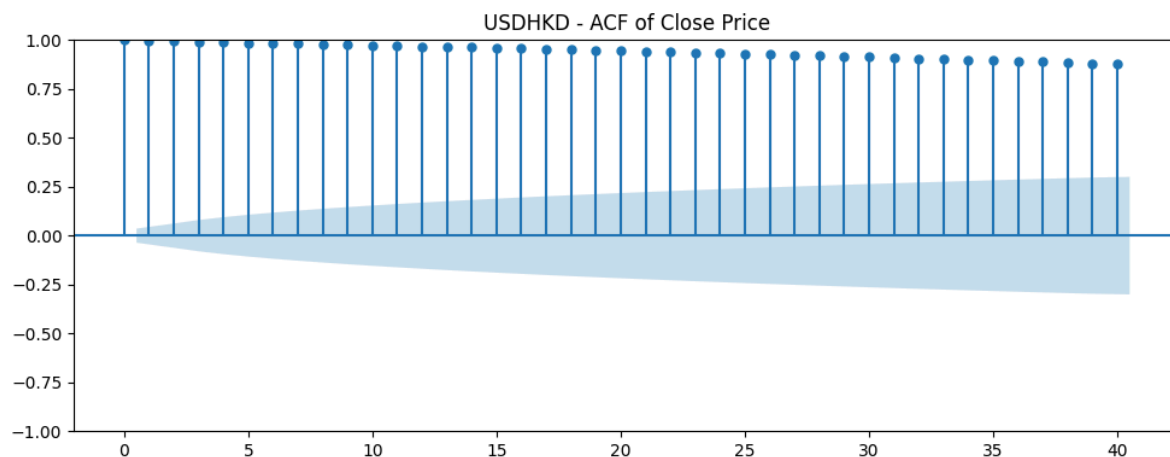
Visualizes volume activity to confirm or question the strength of price movements.



## USDHKD

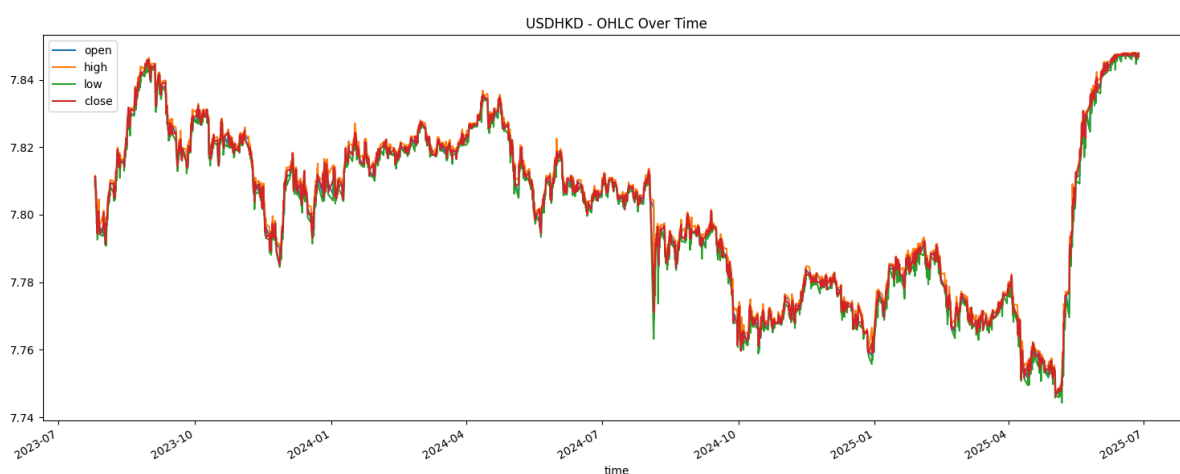
### 1. ACF Plot

Highlights autocorrelations that may suggest cyclical or seasonal behavior in USDHKD prices.



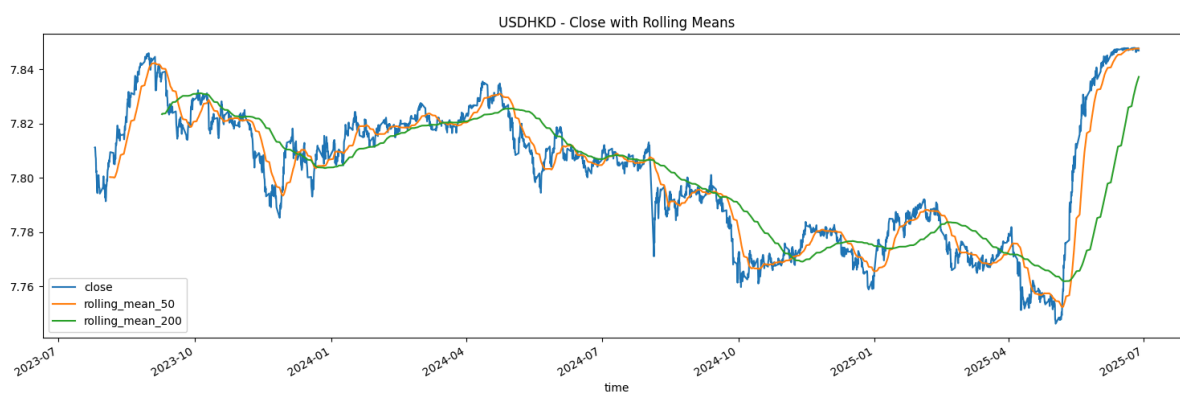
## 2. OHLC Trend

Shows open-high-low-close data to analyze market trends, volatility, and candlestick patterns.



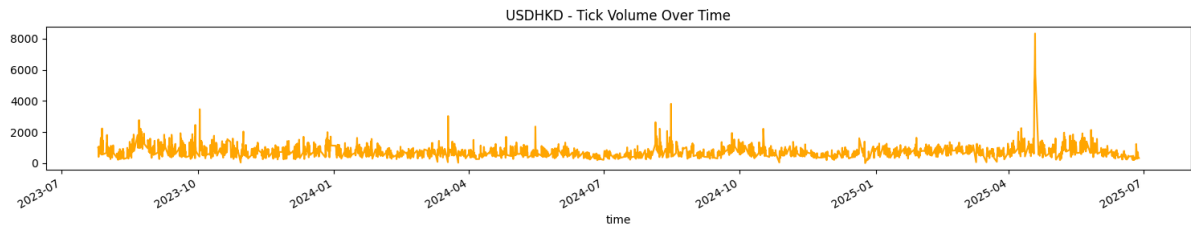
## 3. Rolling Means

Smooths out noise, clarifying long-term USDHKD trends.



## 4. Volume Trend

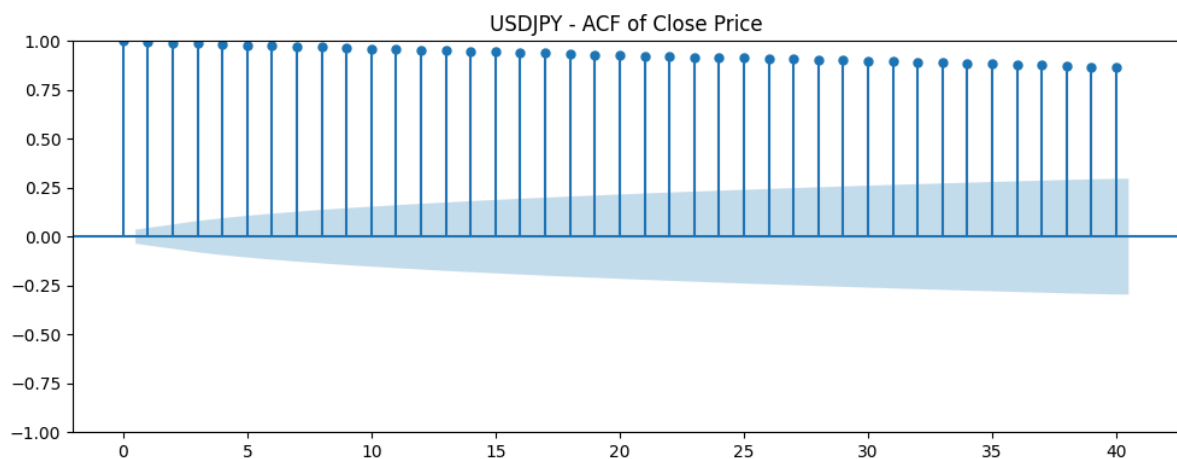
Provides insight into trading activity levels, with volume spikes confirming price movements.



## USDJPY

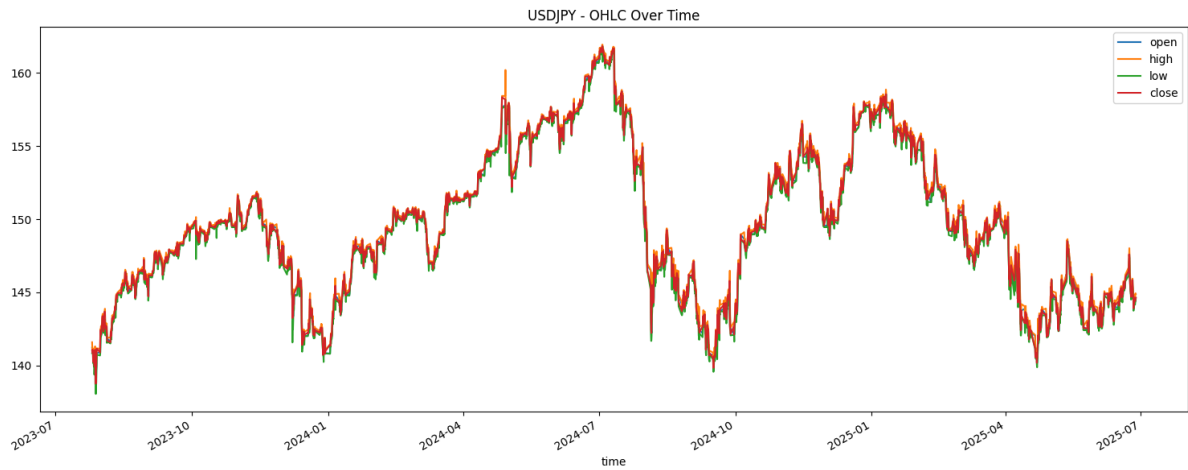
### 1. ACF Plot

Examines autocorrelation to detect repeating structures in USDJPY's time series.



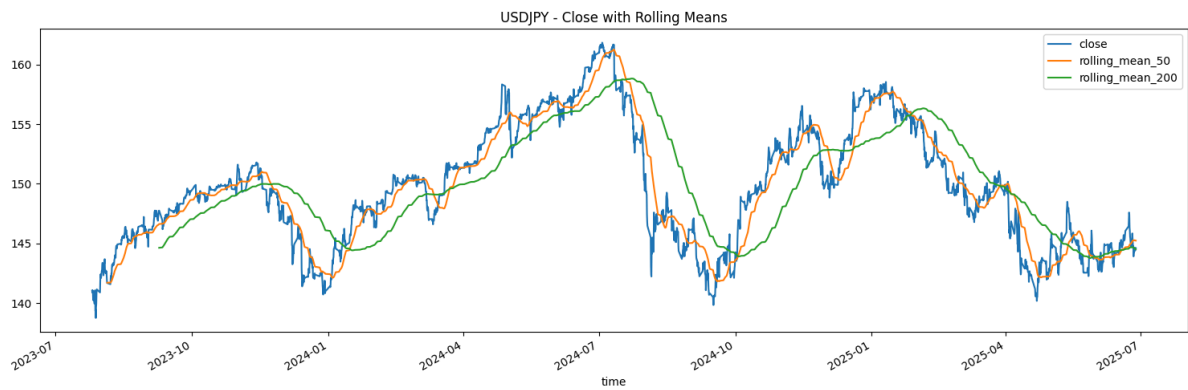
### 2. OHLC Trend

Displays daily price variations, supporting pattern recognition for trading decisions.



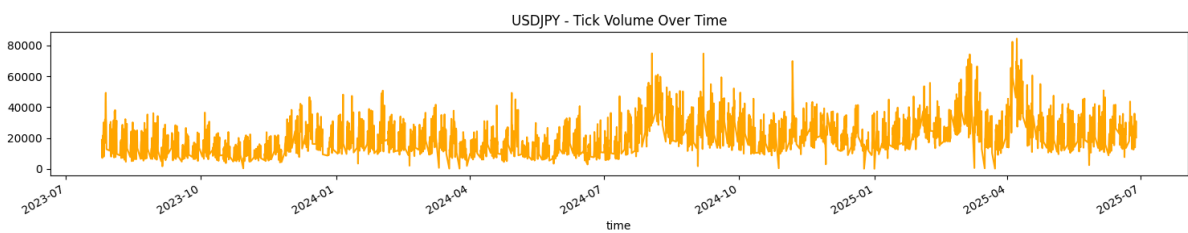
### 3. Rolling Means

Reduces volatility to show the underlying price direction for USDJPY.



### 4. Volume Trend

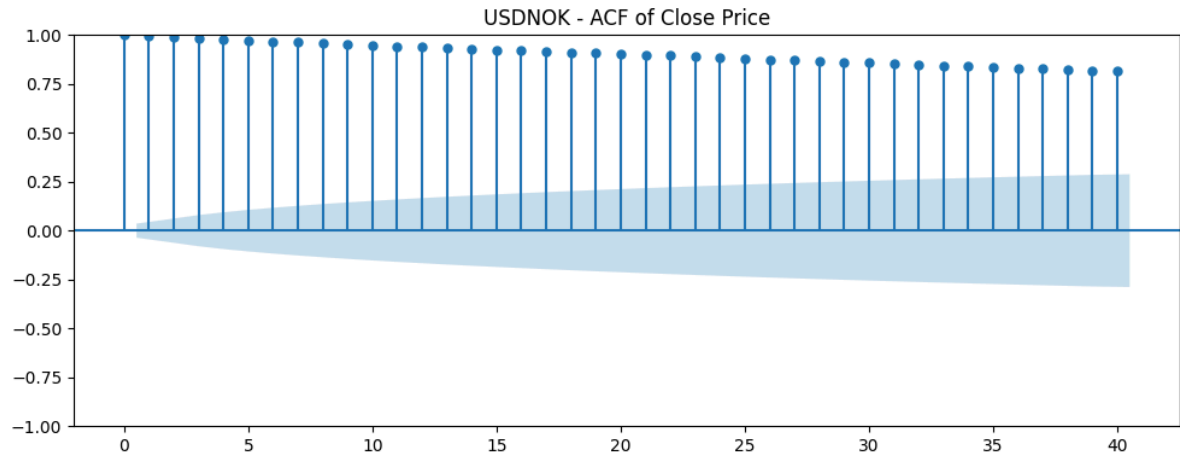
Indicates market activity and can confirm trend strength or highlight periods of consolidation.



## USDNOK

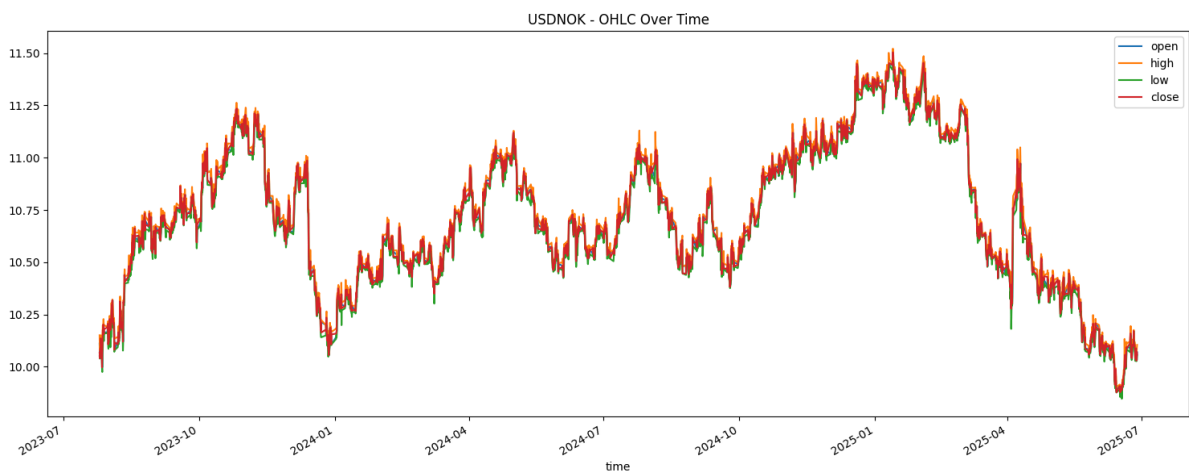
### 1. ACF Plot

Reveals correlation across time lags in USDNOK prices, helpful for model selection in forecasting.



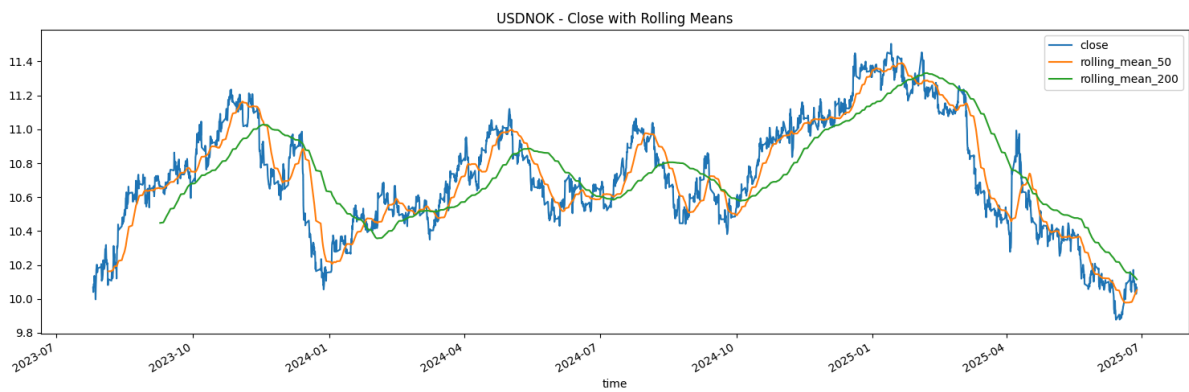
## 2. OHLC Trend

Visualizes price movements for technical analysis, showing support/resistance and volatility.



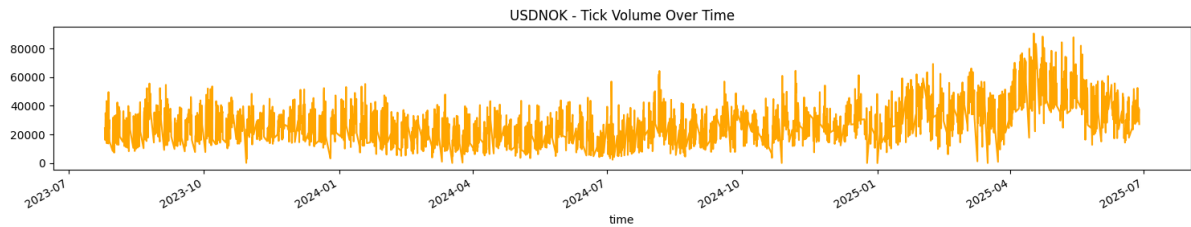
## 3. Rolling Means

Smooths fluctuations to clarify longer-term trends.



## 4. Volume Trend

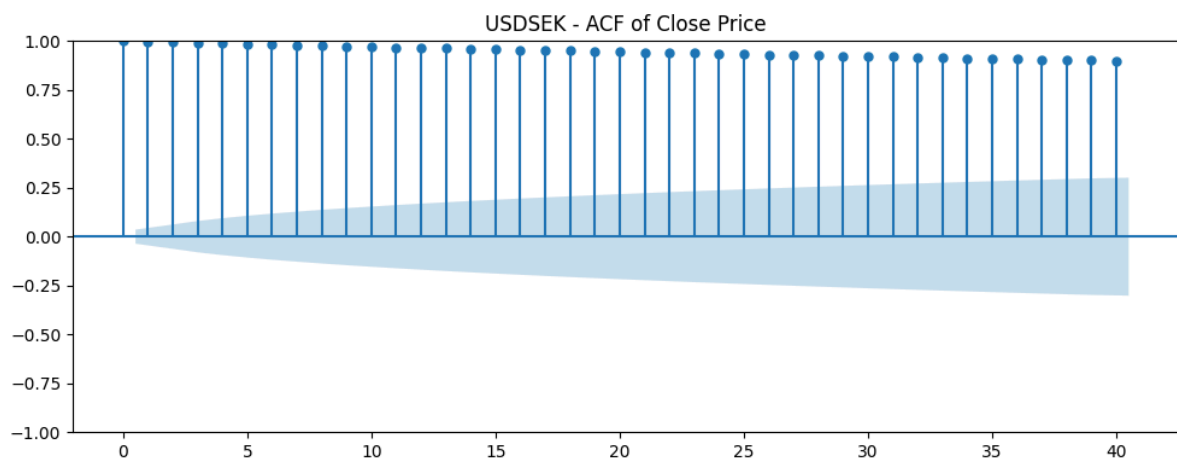
Illustrates trading activity changes, signaling market interest and potential breakout zones.



## USDSEK

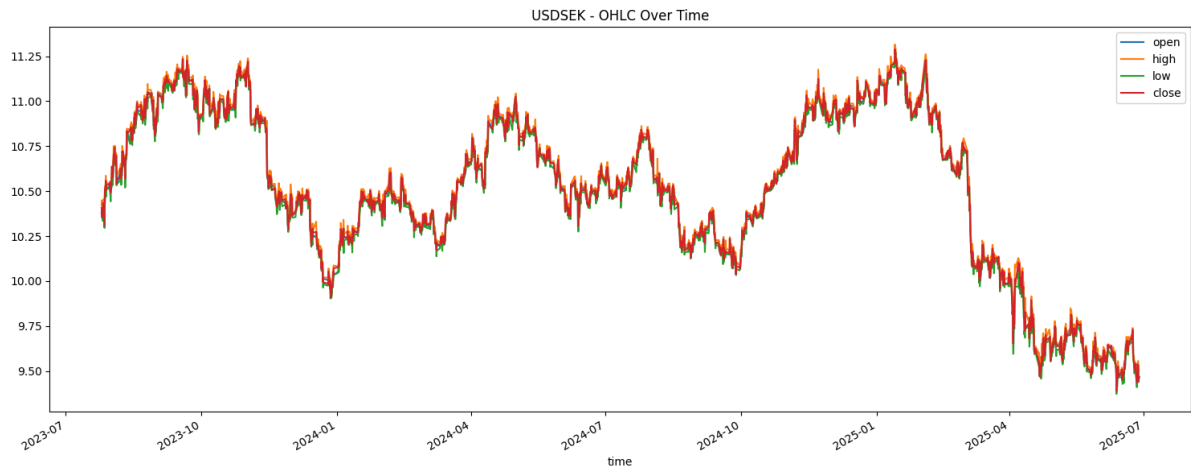
### 1. ACF Plot

Analyzes self-correlation at various lags, identifying possible repeating patterns in USDSEK prices.



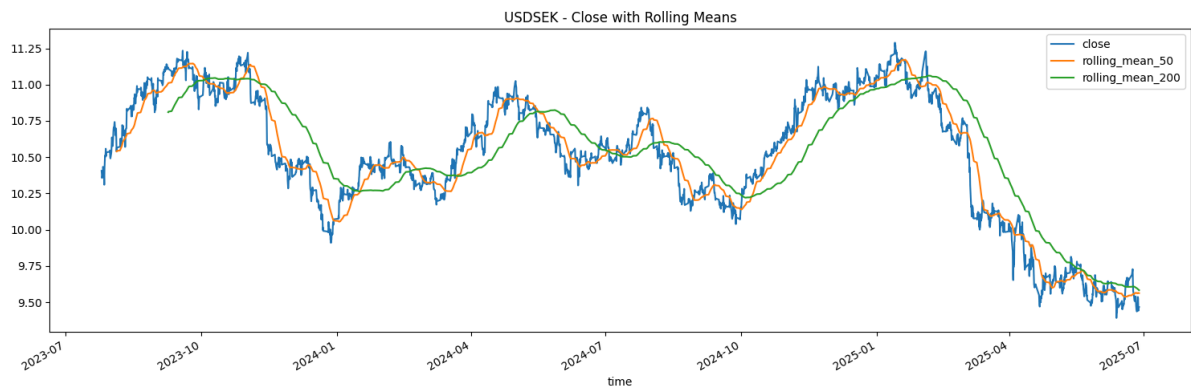
### 2. OHLC Trend

Displays key price levels over time for recognizing market direction and volatility.



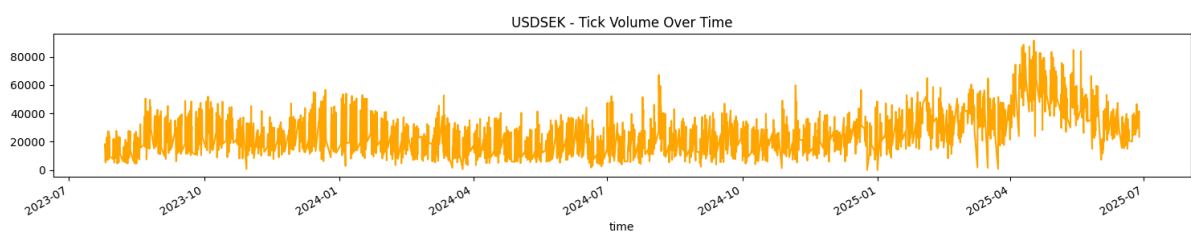
### 3. Rolling Means

Smooths the series, making underlying trends more visible.



### 4. Volume Trend

Shows shifts in trading volume, useful for confirming or challenging price moves.



## Conclusion

These visualizations provide essential insights into currency pair behavior, supporting traders and analysts in identifying trends, cycles, and market sentiment. By combining these charts, one can make more informed trading and forecasting decisions.



