1. **Stationarity Tests**
   1. Augmented Dickey-Fuller (ADF) Test
   2. Phillips-Perron (PP) Test
   3. Kwiatkowski-Phillips-Schmidt-Shin (KPSS) Test
2. **Serial Correlation (Autocorrelation) Tests**
   1. Durbin-Watson Test
   2. Breusch-Godfrey Serial Correlation LM Test
3. **Heteroskedasticity Tests**
   1. ARCH Test (Autoregressive Conditional Heteroskedasticity)
   2. White’s Test / Breusch-Pagan Test
4. **Normality Test**
   1. Jarque-Bera Test
5. **Multicollinearity Check**
6. **Structural Break Tests**
   1. Chow Test
   2. CUSUM / CUSUMSQ Tests
7. **Model Selection Criteria**
   1. AIC (Akaike Information Criterion)
   2. SBC/BIC (Schwarz/Bayesian Information Criterion)
8. **Cointegration Tests *(if you have multiple time series variables)***
   1. Johansen Cointegration Test
9. **Forecast Accuracy (Out-of-Sample Testing)**
   1. RMSE, MAE, MAPE, Theil’s U

**✅ 1. Stationarity / Unit Root Tests**

To check if time series is stationary (a key requirement in time series analysis).

**EViews:**

* **ADF (Augmented Dickey-Fuller) Test**
* **Phillips-Perron (PP) Test**
* **KPSS (Kwiatkowski–Phillips–Schmidt–Shin) Test**

**Stata:**

* dfuller (ADF Test)
* ppurtest (PP Test)
* kpss (KPSS Test – available via user command: ssc install kpss)

**✅ 2. Autocorrelation / Serial Correlation Tests**

To check if residuals are correlated over time (violates model assumptions).

**EViews:**

* **Durbin-Watson Test**
* **Breusch-Godfrey LM Test**

**Stata:**

* estat dwatson (after regression)
* estat bgodfrey

**✅ 3. Heteroskedasticity Tests**

To verify whether error variance is constant (homoskedastic).

**EViews:**

* **White’s Test**
* **Breusch-Pagan-Godfrey Test**
* **ARCH LM Test** (for time-varying volatility)

**Stata:**

* estat hettest (Breusch-Pagan)
* estat imtest, white
* archlm (for ARCH test, install via ssc install archlm)

**✅ 4. Normality Test (Residual Diagnostics)**

To check if residuals are normally distributed.

**EViews:**

* **Jarque-Bera Test**

**Stata:**

* sktest
* jb (Jarque-Bera, install via ssc install jb)

**✅ 5. Multicollinearity Check**

Important when working with multiple independent variables.

**EViews:**

* Check correlation matrix
* Variance Inflation Factor (via add-ins)

**Stata:**

* vif (Variance Inflation Factor)

**✅ 6. Structural Break / Stability Tests**

For detecting structural changes in the data.

**EViews:**

* **Chow Test**
* **CUSUM / CUSUMSQ**

**Stata:**

* estat sbcusum (after regression)
* cusum6 or cusum (available via ssc install)

**✅ 7. Cointegration Tests *(for multivariate time series)***

**EViews:**

* **Johansen Cointegration Test**
* **Engle-Granger Test**

**Stata:**

* vecrank (for Johansen)
* cointtest (Engle-Granger, via ssc install cointtest)

**✅ 8. Granger Causality Test**

To assess lead-lag relationships between variables.

**EViews:**

* **Granger Causality Test** via View > Lag Structure

**Stata:**

* vargranger (after fitting a VAR model)

**✅ 9. Model Fit and Forecast Evaluation**

Evaluate model accuracy and forecasting ability.

**EViews:**

* **RMSE, MAE, MAPE, Theil’s U**
* Automatically available after forecast evaluation

**Stata:**

* Use post-estimation commands or manually compute:
  + estat ic (AIC, BIC)
  + Calculate RMSE, MAE using predicted vs actual values

**✅ 10. Model Selection Criteria**

Used to compare and choose the best model.

* **Akaike Information Criterion (AIC)**
* **Bayesian Information Criterion (BIC/SBC)**

Available in:

* EViews: Model output summary
* Stata: estat ic