**Linear Regression:**

**Assumptions: (2- data, 3-errors)**

**Data Assumptions (must check)**

1. **Linear** Relationship
   1. Between dependent and independent variables
   2. Scatter plot, correlation matrix
2. **No or little Multicollinearity** of independent variables
   1. Check VIF (Variance inflation factor)
   2. VIF=1/(1-R2)
   3. Theoretical threshold of VIF – 10

**Error assumptions (mostly handled in the model, good to check)**

1. **Normal** distribution of errors
   1. All variables to be normally distributed
   2. Use Q-Q Plot, Kolmogorov-Smirnof Test (K-S Test)
   3. If not distributed normally, then data transformation is needed
2. No or little **Auto Corellation** of error terms
   1. Y(x) and y(x+n) are not related
   2. Durbin- Watson Test
3. **Homoscedasticity** / Homoskedasticity of error terms

Heterokedasticity

Homoskedasticity