Lucid Notes
Hypothesis Tests

Transformation (Stabilization of Variance)

Test Name	R Package	R code
BoxCox Transformation	forecast	BoxCox.lambda(x)

Trend Test

Test Name	Null Hypothesis	Alt Hypothesis	R Package	R code
Mann-Kendall	There is no trend present	There is a trend present	trend	trend::mk.test(x)
Sen's Slope Test	There is no trend present	There is trend present	trend	trend::senMK(x)

Stationary Test

Test Name	Null Hypothesis	Alt Hypothesis	R Package	R code
ADF	The series is **NOT** stationary	The series **IS** stationary	tseries	adf.test(x)
PP	There series is **NOT** stationary	The series **IS** stationary	tseries	pp.test(x)
KPSS	The series **IS** stationary	The series is **NOT** stationary	tseries	kpss.test(x)

Normality Test

Test Name	Null Hypothesis	Alt Hypothesis	R Package	R code
Shapiro-Wilk Test	The data is drawn from a normal distribution	The data is not drawn from a normal distribution	stat	Shapiro.test(x)
Kolmogorov Smirnov Test	The data does not differ significantly from a normal distribution's CDF	The data differ from a normal distribution's CDF	stat	ks.test(x, 'pnorm', mean=mu, sd = sigma)
Anderson-Darling test	The data does not deviate significantly from a normal distribution	The data deviates significantly from a normal distribtion	nortest	Nortest::ad.test(x)

Model Diagnostic

Test Name	Null Hypothesis	Alt Hypothesis	R Package	R code
Ljung-Box Test	The model is appropriate	The model is not appropriate	stat	Box.test(x)