Solo Sync Session 1.0

Linearity: How the coefficients enter the model. It doesn’t matter what the values are but the coefficients need to be Beta1 Beta2.

Full Rank Assumption: The columns of X are linearly independent, ie, they do not suffer from multicollinearity.

Spherical Disturbances: The variance of the error terms are equal – I think this validates that the model is fair.

The errors need to be independent of one another.

Exogenous Assumption: The covariance/ The error term does not contain any more information than the regressors. The process that generated the regressors is independent of the residuals.

Normality: Not required for the Gauss Markov Theorem to work.

GMT: This has minimum variance

Page 33 of Greene and Page 6 of Ajmani:

The Frisch Waugh Theorem: the OLS estimator for beta 1, I can get the estimate for beta 1 by regressing the dta matrix x1 on the residuals from the regression on x2. Refer to step by step example in SAS

The OLS estimator for Beta 2 can be obtained by

Given the FWT, it can be seen that multiple regression can also be called partial regression coefficients.

Office Hours

Conduct a usual EDA…

What is the issue with the OLS estimator when you have hetroscadiscity?

What is the issue OLS estimator when in the presence of Hetero…

The variance and covariance matrix with the estimator is wrong.

We can not use the standard erros from OLS to conduct CI or Hypothesis testing.

WLS will give a better model in the presense of Hetero than OLS

Gauss Makov only applies when assumptions are violated.

Residual Analysis

Cone means hetero : residuals is dependent on the mean response. As the mean response goes up the variance The residual variance is changing with the scatter as it increases, what is causing that?

Three tests to conduct of gtraphical analysis for hetero.

This is a green light – saying hey you are dealing with Hetro.

Why include a square item in the model? Capture the curvature in the relationship

Graphical Analysis can be quite subjective.

Ignore G-Plot

White Test – Gnerealized test. Hi P-value means that there is no Hetero

Goldelf Test – Basic calculator equation Sorting by income dividing te data into two parts First data set = first 36 observations

Each data set is being run OLS

Braush Hagen Test