Notes for Module 4 Lecture 4B

Slide #3

This pertains to "overall or global significance". That is, if the global null hypothesis is true, then it means that none of the *K* regressors are important to the response variable *y* . If this global null hypothesis is rejected, it means that at least one regressor is important to the response variable *y* . This hypothesis is often the first hypothesis to test in practice.

Slide #4

In practice, the regression model contains the intercept. As such, the total sum of squares SS_T is often corrected for the contribution from the *y*-mean; that is, $(\sum_{i=1}^{n} y_i)^2 / n$ is subtracted from the uncorrected total of sum of squares. So is the regression sum of squares SS_R corrected for this term. Consequently, the residual sum of squares SS_{Res} is unchanged regardless of whether the correction for the y-mean contributions is adopted or not.

Slide #13

The notation $\beta_2 \mid \beta_1$ means "the impact of $\mathbf{X_2}$ after $\mathbf{X_1}$ is in the regression model". This notation or alike is used very often throughout the course.