

Dear all, the fixed typos are in blue circles.

Some useful points for the exam

1. Do you know that $\sqrt{\text{Var}(\hat{\beta})} = \text{Std. Err.} !$

termgpa	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]
X ₁ attend	.046594	.0036082	12.91	0.000	.0395093 .0536787
X ₂ priGPA	.5329307	.0403281	13.21	0.000	.4537468 .6121146
X ₃ final	.0503197	.0040339	12.47	0.000	.0423992 .0582403
X ₄ frosh	.0974307	.0560211	1.74	0.082	-.0125662 .2074276
X ₅ soph	.0689273	.0467006	1.48	0.140	-.0227689 .1606236
_cons	-1.361077	.1316861	-10.34	0.000	-1.619642 -1.102513

2. Heteroskedascity $\Rightarrow$ variance of the error ($\text{Var}(u)$) correlates with explanatory variables (x)

- To test, we can use either the BP-test or white test

- BP-test $\hat{u}^2 = \beta_0 + \beta_1 X_1 + \dots + \beta_K X_K + \text{error}$
approximates $\text{Var}(u)$

$H_0: \beta_1 = \beta_2 = \dots = \beta_K = 0 \leadsto \text{Homoske.}$
 $H_1: H_0 \text{ not true} \leadsto \text{Heteroske.}$

3. Serial / Auto correlation $\Rightarrow$ "value" of the error terms (u_t) correlates among each other across times (across samples).

- Test for AR(1) in the error: $u_t = \rho u_{t-1} + e_t$
 $H_0: \rho = 0 \leadsto \text{no serial correlation}$
 $H_1: \rho \neq 0 \leadsto \text{AR(1) serial correlation}$