***Regress wage on education**
regress wage educ

Source	SS	df	MS
Model	1179.73204	1	1179.73204
Residual	5980.68225	524	11.4135158
Total	7160.41429	525	13.6388844

SSE SSR SST $= \hat{\sigma}^2$

Number of obs = 526 $= N$
F(1, 524) = 103.36 } overall model F-test & associated p-value
Prob > F = 0.0000
R-squared = 0.1648 $= R^2$
Adj R-squared = 0.1632 ← penalizes R^2 for more regressors
Root MSE = 3.3784 $= \hat{\sigma}$ (mean square error)

wage	Coef.	Std. Err.	t	P>|t|	[95% Conf. Interval]	
educ	.5413593	.053248	10.17	0.000	.4367534	.6459651
_cons	-.9048516	.6849678	-1.32	0.187	-2.250472	.4407687

- $y \rightarrow$ wage; $x =$ educ; Constant (intercept) = _cons
- $\hat{\beta}_1 =$ .5413593; $\hat{\beta}_0 =$ -.9048516
- Coef. column: $\hat{\beta}_j$
- Std. Err. column: $\sqrt{\hat{V}(\hat{\beta}_j)} = \hat{\sigma}_{\hat{\beta}_j}$
- t column: t-statistic under $H_0: \beta_j = 0$
- P>|t| column: p-value for t-test of $H_0: \beta_j = 0$ vs. $H_1: \beta_j \neq 0$
- Confidence-interval columns (circled): 95% two sided confidence interval for β_j

$$y = \beta_0 + \beta_1 x + u$$

$$wage = \beta_0 + \beta_1 educ + u$$