

Economics 312
Daily Problem #19

Spring 2020
February 28

1. Suppose that you are estimating a model for a dependent variable y . You have many candidate regressors and several alternative choices for functional forms among which to choose. Briefly discuss how each of the following could be useful to help you make a choice:

- a. t statistics on estimated coefficients
- b. R^2 statistics
- c. \bar{R}^2 statistics
- d. Variance-inflation factors

2. Recall the pizza regression from an earlier daily problem:

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. reg pizza female income age fem_inc
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Source	SS	df	MS			
Model	697127.141	4	174281.785	Number of obs =	40	
Residual	250524.759	35	7157.85025	F(4, 35) =	24.35	
Total	947651.9	39	24298.7667	Prob > F =	0.0000	
				R-squared =	0.7356	
				Adj R-squared =	0.7054	
				Root MSE =	84.604	

pizza	Coef.	Std. Err.	t	P> t	[95% Conf. Interval]	
female	-128.7496	42.28031	-3.05	0.004	-214.5832	-42.91606
income	2.636669	.5123064	5.15	0.000	1.596632	3.676706
age	-8.272247	1.49879	-5.52	0.000	-11.31495	-5.229542
fem_inc	-1.095241	.581824	-1.88	0.068	-2.276407	.0859241
_cons	420.4974	54.26929	7.75	0.000	310.3249	530.6699

How would the estimated coefficients and their standard errors be different if you:

- a. measured income in dollars rather than thousands of dollars?
- b. subtracted 18 from each observation's age to measure it in "adult years"?
- c. re-scaled pizza expenditures to be in cents rather than dollars?

(Note: Do each part separately, not cumulatively.)