

# ECON 5103 Unit 3, video 5

## Estimating Demand Equations, part II

5103-unit3-5 Page 1

SUMMARY OUTPUT						
<i>Regression Statistics</i>						
Multiple R	0.857570315					
R Square	0.735426844					
Adjusted R Square	0.688737464					
Standard Error	121.3561403					
Observations	21					
<i>ANOVA</i>						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	3	695930.9208	231976.9736	15.75148006	3.70278E-05	
Residual	17	250364.3173	14727.31278			
Total	20	946295.2381				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	489.3580859	243.7837759	1.423447296	0.17270095	-235.9622733	1214.678445
Price per can	-543.6811578	113.0810563	-4.807888924	0.000164103	-782.2613297	-305.100986
income per buyer	2.235885197	0.443886329	5.037067037	0.000101408	1.299366914	3.172403481
price per can at competitor	-101.7014844	356.0140529	-0.285667053	0.778584669	-852.8254723	649.4225035

Rule of thumb: If the p-value for a coefficient is less than .05 then the coefficient is probably pretty accurate

5103-unit3-5 Page 2

Notice from the last page that the p-values for "intercept" and "price per can at competitor" are greater than .05. this means that the coefficients for "intercept" and "price per can at competitor" are louse and probably inaccurate.

On the other hand, the p-values for "price per can and "income per buyer" are way lower than .05. This means that those two coefficients are probably accurate estimates of the true coefficients.

SUMMARY OUTPUT						
<i>Regression Statistics</i>						
Multiple R	0.857570315					
R Square	0.735426844					
Adjusted R Square	0.688737464					
Standard Error	121.3561403					
Observations	21					
<i>ANOVA</i>						
	<i>df</i>	<i>SS</i>	<i>MS</i>	<i>F</i>	<i>Significance F</i>	
Regression	3	695930.9208	231976.9736	15.75148006	3.70278E-05	
Residual	17	250364.3173	14727.31278			
Total	20	946295.2381				
	<i>Coefficients</i>	<i>Standard Error</i>	<i>t Stat</i>	<i>P-value</i>	<i>Lower 95%</i>	<i>Upper 95%</i>
Intercept	489.3580859	343.7837759	1.423447295	0.17270095	-235.9622733	1214.678445
Price per can	-543.6811578	113.0810563	-4.807888924	0.000164103	-782.2613297	-305.100986
income per buyer	2.235885197	0.443886329	5.037067037	0.000101408	1.299366914	3.172403481
price per can at competitor	-101.7014844	356.0140529	-0.28566705	0.778584669	-852.8254723	649.4225035

.0000370278

When "significance F" is less than .05 then our demand equation contains all of the important things that affect demand for the product being examined. If "significance F" were greater than .05 then we probably forgot to include some important thing that affects demand in our regression analysis.

In our soda example, the "significance F" so much lower than .05 that we can conclude that we did not forget anything important in the regression equation.

Look at pages 98-102 of textbook for more information about the regression output numbers