

Kelly North

II. Cigarette Demand

The REG Procedure
Model: MODEL1
Dependent Variable: Insales

Number of Observations Read	51
Number of Observations Used	51

Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Pr > F
Model	2	3.39611	1.69806	20.41	<.0001
Error	48	3.99329	0.08319		
Corrected Total	50	7.38941			

Root MSE	0.28843	R-Square	0.4596
Dependent Mean	4.07003	Adj R-Sq	0.4371
Coeff Var	7.08676		

Parameter Estimates

Variable	DF	Parameter Estimate	Standard Error	t Value	Pr > t
Intercept	1	7.09613	2.92337	2.43	0.0190
lnppp	1	-1.51094	0.28515	-5.30	<.0001
lnincome	1	-0.05940	0.29824	-0.20	0.8430

Using a double log model of sales against price and income, I was able to determine both the price elasticity of demand and the income elasticity of demand. The price elasticity of demand is -1.51, which can be interpreted as a 1% increase in price per pack will result in a 1.5% decrease in cigarette sales (which suggests cigarette sales are relatively elastic). The income elasticity of demand is equal to -0.059, which says a 1% increase in income will decrease sales by 0.6%. Because an increase in income results in a decrease in sales, this suggests that cigarettes are an inferior good.

The root MSE indicates the model has an average error of 0.29%. The adjusted r-squared indicates the model I used to determine the demand elasticity of cigarettes explains 44% of the variance.

(A)
North 6/6
Discuss 4/4
19/10