

Consider the regression below (below) that was estimated on weekly data over a 2-year period on a sample of Kroger stores for Pepsi carbonated soft drinks. The dependent variable is the log of Pepsi volume per MM ACV. There are 53 stores in the dataset (data were missing for some stores in some weeks). Please answer the following questions about the regression output.

Model Summary (b)

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.869(a)	.754	.754	.4120

a Predictors: (Constant), Mass stores in trade area, Labor Day dummy, Pepsi advertising days, Store traffic, Memorial Day dummy, Pepsi display days, Coke advertising days, Log of Pepsi price, Coke display days, Log of Coke price

b Dependent Variable: Log of Pepsi volume/MM ACV

ANOVA(b)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	2881.089	10	288.109	1697.262	.000(a)
	Residual	937.695	5524	.170		
	Total	3818.784	5534			

a Predictors: (Constant), Mass stores in trade area, Labor Day dummy, Pepsi advertising days, Store traffic, Memorial Day dummy, Pepsi display days, Coke advertising days, Log of Pepsi price, Coke display days, Log of Coke price

b Dependent Variable: Log of Pepsi volume/MM ACV

Coefficients(a)

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Co linearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	7.79429	.06249		124.721	.000		
Log of Pepsi price	-3.34665	.03483	-.739	-96.091	.000	.751	1.332
Log of Coke price	.65877	.03170	.181	20.784	.000	.587	1.703
Pepsi advertising days	.00173	.00020	.065	8.644	.000	.784	1.275
Coke advertising days	-.00009	.00018	-.004	-.502	.616	.689	1.450
Pepsi display days	.00011	.00021	.004	.546	.585	.656	1.525

Coke display days	-.00299	.00020	-.123	-14.766	.000	.646	1.549
Labor Day dummy	.27190	.04167	.045	6.525	.000	.923	1.083
Memorial Day dummy	.21295	.04269	.036	4.988	.000	.834	1.199
Store traffic	.00000	.00000	.023	3.367	.001	.961	1.040
Mass stores in trade area	-.00910	.00026	-.238	-35.161	.000	.968	1.033

a Dependent Variable: Log of Pepsi volume/MM ACV

Questions

- Comment on the goodness of fit and significance of the regression and of individual variables. What does the ANOVA table reveal?
- Write out the equation and interpret the meaning of each of the parameters.
- What is the price elasticity? The cross-price elasticity with respect to Coke price? Are these results reasonable? Explain.
- What do the results tell you about the effectiveness of Pepsi and Coke display and advertising?
- What are the 3 most important variables? Explain how you arrived at this conclusion.
- What is collinearity? Is collinearity a problem for this regression? Explain. If it is a problem, what action would you take to deal with it?
- What changes to this regression equation, if any, would you recommend? Explain