STATISTICS FOR ECONOMISTS

Class Exercise 7

These questions are about multiple regression. See Barrow ch 8 for more.

1. The data below shows consumption of margarine (in ounces per person per week), its real price, in pence per 8 ounce pack, for the UK, plus the real price of butter (a likely substitute for margarine) and real income.

Year	Margarine Consumption	Margarine Price	Butter price	Real income
1970	2.86	125.6	105.5	70.3
1971	3.15	132.9	130.9	71.1
1972	3.52	126	131.9	77.1
1973	3.03	119.6	99.5	82.1
1974	2.60	138.8	89.6	81.5
1975	2.60	141.0	92.1	81.9
1976	3.06	122.3	109.1	81.7
1977	3.48	132.7	118.2	79.9
1978	3.54	126.7	123.4	85.8
1979	3.63	115.7	130.6	90.7
1980	3.83	104.2	119.2	92.1
1981	4.11	95.5	114.2	91.4
1982	4.33	88.1	114.5	90.9
1983	4.08	88.9	110.0	93.3
1984	4.08	97.3	107.9	96.8
1985	3.76	100	100.0	100.0
1986	4.10	86.7	104.2	104.5
1987	3.98	79.8	99.8	108.1
1988	3.78	79.9	100.2	114.6

a) Estimate a multiple regression model of the demand for margarine. You will need to do this in excel – copy and paste the data from the table above into Excel, then follow the same steps as covered in Excel class 3.

b) Do the estimated coefficients have the expected effects?

c) Test the statistical significance of the individual coefficients and of the regression as a whole. State clearly the null and alternative hypotheses in each case.

d) Calculate the price elasticity of demand, the income elasticity and the cross-price elasticity.

e) What could you do to improve the model?