Additional Empirical Exercise 8.3

Using the data set **Growth** described in Empirical Exercise 4.1, excluding the data for Malta, run the following five regressions: *Growth* on

(1) *TradeShare* and *YearsSchool*;

(2) *TradeShare* and ln(*YearsSchool*);

(3) *TradeShare*, ln(*YearsSchool*), *Rev_Coups*, *Assassinations* and ln(*RGDP60*);

(4) *TradeShare*, ln(*YearsSchool*), *Rev_Coups*, *Assassinations*, ln(*RGDP60*), and *Trade-Share*×*ln*(*YearsSchool*);

and

(5) *TradeShare*, *TradeShare*², *TradeShare*³, ln(*YearsSchool*), *Rev_Coups*, *Assassinations*, and ln(*RGDP60*).

a. Construct a scatterplot of *Growth* on *YearsSchool*. Does the relationship look linear or nonlinear? Explain. Use the plot to explain why regression (2) fits better than regression (1).

b. In 1960, a country contemplated an education policy that would increase average years of schooling from 4 years to 6 years. Use regression (1) to predict the increase in *Growth*. Use regression (2) to predict the increase in *Growth*.

c. Test whether the coefficients on *Assassinations* and *Rev_Coups* are equal to zero using regression (3).

d. Using regression (4), is there evidence that the effect of *TradeShare* on *Growth* depends on the level of education in the country?

e. Using regression (5), is there evidence of a nonlinear relationship between *TradeShare* and *Growth*?

f. In 1960, a country contemplated a trade policy that would increase the average value of *TradeShare* from 0.5 to 1. Use regression (3) to predict the increase in *Growth*. Use regression (5) to predict the increase in *Growth*.