EMPIRICAL STUDY AND FORECASTING II
Spring 2006
Problem Set 1
March 10, 2006
Due: March 24, 2006

1. Included in the data **ps1_cig.dta** are information of cigarette consumption, average price of cigarette, cigarette-specific tax, general sales tax and income per capita. We want to estimate the price elasticity of demand for cigarettes.

   (a) (3%) Run an OLS regression of cigarette consumption on average price of cigarette and income per capita? What is the price elasticity of demand for cigarette?

   (b) (3%) To control for the state-specfic effects, run an fixed-effects regression on the panel data to estimate the price elasticity of demand for cigarette, controlling for income per capita? What are the price elasticity and income elasticity of demand for cigarette?

   From now on, control state-fixed effects in all the regressions.

   (c) (3%) What is the estimated price elasticity of cigarette demand from the TSLS estimation when *cigarette-specific tax* is used as an instrument?

   (d) (3%) Is *cigarette-specific tax* relevant as an instrument? Why?

   (e) (3%) What is the estimated price elasticity of cigarette demand from the TSLS estimation when *general sales tax* is used as an instrument?

   (f) (3%) What is the estimated price elasticity of cigarette demand from the TSLS estimation when both *cigarette-specific tax* and *general sales tax* are used as instruments.

   (g) (3%) Are the two instruments, *cigarette-specific tax* and *general sales tax*, both exogenous? Why?

   (h) (4%) From (g), what is the preferred estimate for the price elasticity of cigarette demand? Why?