HW 5 EE 325 (Submit the answer for question 1 and 2 on Dec 2th, 2011)

1. Consider the following regression results (t ratios are in parentheses):

$$\hat{Y}_i = 1286 + 104.97X_{2i} - 0.026X_{3i} + 1.20X_{4i} + 0.69X_{5i} - 19.47X_{6i} + 266.06X_{7i} - 118.64X_{8i} - 110.61X_{9i}$$

$$t = (4.67) \quad (3.70) \quad (-3.80) \quad (0.24) \quad (0.08) \quad (-0.40) \quad (6.94) \quad (-3.04) \quad (-6.14)$$

$$R^2 = 0.383 \qquad n = 1543$$

where

Y = wife's annual desired hours of work, calculated as usual hours of work per year plus weeks looking for work

X_2 = after-tax real average hourly earnings of wife

X_3 = husband's previous year after-tax real annual earnings

X_4 = wife's age in years

X_5 = years of schooling completed by wife

X_6 = attitude variable, 1 if respondent felt that it was all right for a woman to work if she desired and her husband agrees, 0 = otherwise

X_7 = attitude variable, 1 if respondent's husband favored his wife's working, 0 = otherwise

X_8 = number of children less than 6 years of age

X_9 = number of children in age groups 6 to 13

   a. Do the signs of the coefficients of the various nondummy regressors make economic sense? Justify your answer
   b. Why do you think that age and education variables are not significant factors in a woman's labor force participation decision in this study?

2. Consider the following regression results.

$$\widehat{UN}_t = 2.7491 + 1.1507D_t - 1.5294V_t - 0.8511(D_tV_t)$$
$$t = (26.896) \quad (3.6288) \quad (-12.5552) \quad (-1.9819)$$
$$R^2 = 0.9128$$

Where UN = unemployment rate, %

V = job vacancy rate, %

D = 1, for period beginning in 1966-IV

= 0, for period before 1966-IV

t = time, measured in quarters

Note: In the fourth quarter of 1966, the Labor government liberalized the National Insurance Act by replacing the flat-rate system of short-term unemployment benefits by a mixed system of flat-rate and (previous) earnings-related benefits, which increased the level of unemployment benefits.

a. What are your prior expectations about the relationship between the unemployment and vacancy rates?
b. Holding the job vacancy rate constant, what is the average unemployment rate in the period beginning in the fourth quarter of 1966? Is it statistically different from the period before 1966 fourth quarter?
c. Are the slopes in the pre- and post-1966 fourth quarter statistically different?
d. Is it safe to conclude from this study that generous unemployment benefits lead to higher unemployment rates? Does this make economic sense?

Empirical exercise using STATA ☺☺

3. Table 8.11 data containing disposable personal income and personal savings from 1970-2005. We divided the sample period into two, 1970-1981 and 1982-2005, and showed on the basis of the Chow test that there was a difference in the regression of savings on income between the two periods. Consider the following model with the dummy variable:

$$Y_t = \alpha_1 + \alpha_2 D_t + \beta_1 X_t + \beta_2 (D_t X_t) + u_t$$

Where Y = personal savings
X= disposable personal income
t = time
D = 1 for observations in 1970-1981
= 0 otherwise

a. Estimate the preceding regression.
b. Test the coefficients individually statistically significant at the 5 percent level? From this test, how would you describe the difference in the two regressions (coincident regression, parallel regression, concurrent regression)?
c. Write down the mean personal savings function for 1970-1981 and the mean personal savings function for 1982-2005.
d. What is the advantage of the dummy variable technique over the Chow test