14.75J  10/7/2003
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Problem Set 3
Due: Fri 10/17 in class


This problem set is about the demographic transition. It is based on lecture, Chap 9 of the textbook, and the paper "Development as a Process of Social Change: An Application to the Fertility Transition" by Munshi and Myaux. You can download the paper and the data from the web site, http://web.mit.edu/14.75j/www/.


1. These questions are based on the paper.
 a) What is the project studied in the paper?

b) The authors find that "while individuals respond strongly to contraceptive prevalence within their own religious group in the village, cross-religion effects are entirely absent in the data" (p.3).  Why does this fact strongly support their hypothesis for how contraception use changes over time?

c) The sentence after equation (1) in the paper (p.15) says "Simplifying the expression above, a necessary condition to sustain the modern equilibrium is obtained as
$P \geq P^* = \dfrac{l - (w + S)}{l - g}$ " . Verify that this condition is in fact equivalent to equation (1).


2. Now download the data set MATLAB2, and when you open Stata type "set mem 500m" You need to do this to give Stata enough memory space to open the data set.

a) What is the mean of the variable dcont (which is a dummy for whether whether that woman used contraception that year)? Graph how this varies over time, and by the age of the woman.  Can you explain these two trends?

b) Find the correlation between dcont and lscont (the rate of contraception use for the previous year in the village overall). This is a measure of the strength of the effect of the perceived social norm, measured by lscont, on a woman's use of contraception. Now divide the population into two groups: under 30 years old, and 30 years and over. Create variables lscontu30 and lsconto30 where lscontu30 is the rate of contraception use the previous year among those under the age of 30, and lsconto30 is the rate for those over the age of 30. Now find the correlation between dcont and the lscontu30 separately for women over and under 30, and do the same for lsconto30. Does the effect of the social norm seem to change when you divide the population into age groups?  (Hint: one command you might want to use in the process of making these variables is "bysort vill year: egen lscontu30 = mean (ldcont)". You will also probably want to use the command "merge vill year".)

c) Run a regression of dcont on lscont with these controls: age, agesq, child, childsq, sons, sonsq, mort, year2-year10. How important do these different variables seem to be in determining dcont?

3. Do questions 12 and 16 on pages 341-342 of the textbook. In question 12, please just write a sentence or two for each part.