ECON 590: Fall 2001

Lakshmi K. Raut

Emprical Project: Part I

(1) From micro-economic theory of fertility choices we know that the desired number of children by a household depends on household income, infant mortality, publicly provided social security, health facilities, mother's education. Let us assume that the country level macro data can be viewed as generated by a representative household's data. Note that if the households in an economy want to demand less children, then total fertility rate, population growth rate will be lower and the percentage of women of childbearing age using contraceptives will be higher. First examine the effects of government expenditures on health, and education on infant mortality, life expectancies and female literacy. Then examine how infant mortality, life expectancy, female literacy, per capita income, social security expenditures affected population growth, total fertility and contraceptive use for the selected countries. In each case, first state the positive or negative effects that you expect from intuition and from microeconomic theory of fertility decisions and then report your empirical results and reflect on your findings. What are the government policies that you recommend from your study to be most effective in reducing population growth, fertility rates, infant mortality rate, and female literacy rate? Conclusion?

Variables and Sources of Data:

Choose about 50 countries for which most of the following variables have data.

<u>The variables from World Development Report, 1984:</u>

Y	per capita GNP 1982	Table 1
EM, EF	male and female Literacy rate, 1981	Table 25
IMR	infant mortality rate, 1982	Table 23
	government expenditure on	Table 26
EXP_ED	>Education 1981	
EXP_HL	>Health, 1981	
ED_SS	>Social security	
	(convert these variables as percentage of GNP)	

<u>The variables from World Development Report, 1992:</u>

g_POP	Population Growth rate annual (1980-90)	Table 26
TFR	Total Fertility Rate, 1990	Table 27
CONTRA	Married women of childbearing age using contraception (percent)1988	Table 27
LIFEXP	Life Expectancy at birth 1990	Table 1
g_GDP	Average annual growth rate of GDP 1980-90	Table 2

Format for reporting empirical findings:

Be precise in your statement. Avoid long sentences. Choose the right hand side variables according to what economic theory suggests but not according to which variables are statistically significant.

1. Outline (5 to 7 sentences) stating broadly what you are doing. Write this last, after you have reported your results.

2. Give a general motivation for studying determinants of population growth (i.e., why should we study the factors that affect population growth, for instance to better understand the population growth process and to see whether some government policies could control population growth, e.g. what policies should be adopted to reduce population growth of less developed countries etc.).

   Then state what are the factors (these are the right hand side variables of the models whose dependent variables are (1)-(3) below, you choose these variables) that microeconomic theory suggests as determinants of demand for children. Provide argument for each factor whether its effect is supposed to be positive, negative or both positive and negative but the net effect is ambiguous.

   State that demand for desired number of children cannot be observed. So you take three different surrogates: (1) g_POP, (2) TFR, (3) CONTRA. (These are the dependent variables in your model statements).

   Report your empirical findings. Emphasize which are the statistically significant determinants.

3. **Policy Analysis:**

   From the above models you know which are the important determinants of population growth. Some of those variables, such as education, infant mortality could be affected by government expenditures on education, health etc. These are some of the government policies to control population growth. In this section, you find out these relationships by regressing for instance,

   IMR = EXP_HL EXP_ED

   LIFEXP = EXP_HL EXP_ED

   EF = EXP_ED

   .....

4. Conclusions.