

14.75J 9/8/2003
Prof. Victor Lavy
Problem Set 1
Due: Thurs 9/18 in class

Feel free to work in groups, but please turn in your own individual results.

1. World Bank Development Report Data

The point of this exercise is to help you understand the faces of development on the one hand, and acquaint you with Stata on the other. You will need to download the Stata data set (wbdr.dta; this data set contains 1997 variables, unless otherwise noted) from the course website. There you will also find instructions for using Stata. Hand in your do-file with the problem set. No need to hand in the log file, although you can hand in the parts that are *directly* relevant for answering questions below.

- a. What is the mean and standard deviation of GNP per capita, illiteracy rate, infant mortality rate and under 5 mortality rate in 1997 across countries?
- b. Compute the correlation coefficient among GNP per capita, illiteracy rate, infant mortality rate and under 5 mortality rate in 1997. Are the directions of the correlations with GNP per capita what you expected?
- c. Compare the male illiteracy rate to the female illiteracy rate. Why might they be different?
- d. The richest and poorest countries:
 - i. Restrict your data set to countries for which we have GNP per capita data for both 1997 and 1977. What were the ten poorest countries (in terms of GNP per capita) in 1997? In 1977? Are there countries that are in both lists?
 - ii. Continue using the restricted data set. What were the five richest countries (in terms of GNP per capita) in 1997? In 1977? Are there countries that are in both lists?
 - iii. Return to using the original data set. What is the correlation between 1997 and 1977 GNP per capita? Between the 1997 and 1977 infant mortality rates? How do you interpret these correlations?

2. This problem is intended to help you gain insight into cross country growth comparisons and understand better the pros and cons of the different ways to measure welfare. You will use WDI data (<http://devdata.worldbank.org/dataonline/>) for 5 countries over a period spanning at least 40 years from 2002. Please email the TA the countries you choose by 4pm Thursday (9/11), so that there is not too much overlap in the class over countries.

- a. Choose 4 measurements of welfare. For each measurement, use Excel to graph the changes over a period (as long as possible) for the 5 countries of your choice.

(Please put welfare on the Y-axis and years on the X-axis.) You should produce 4 graphs.

- b. Compare the 4 graphs. Discuss why they might look different (or the same) and discuss the pros and cons of each measure of wealth. (Hint: How is each measurement constructed? What information does each measurement reveal? How might each measurement mislead a researcher?)
- c. Recall the in class discussion about exchange rates and non-tradeable goods such as services. What other measurement issues do you have to take into account when making cross-country comparisons?
- d. What measurements do you think should be used to get the most accurate picture of a countries' growth in wealth? Cross-country comparisons? (You can use more than one).
- e. Why might a researcher want to look at the income share of different segments of income distribution (e.g. top 10%) over time? For one country, graph the income share held by the lowest 20%, second lowest 20%, the highest 10% and the highest 20%. What does this graph say about changes income inequality?
- f. Hypothesize about the relationship between growth and inequality: Do you think that countries which grow faster will experience more inequality? Do you think rich countries or poor countries generally experience more inequality? Please give a brief – 4 sentence – justification.