INTRODUCTION TO THE ECONOMICS OF DEVELOPING COUNTRIES
ECO 2117 B
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You are not allowed to use the textbook.
Lecture slides, personal notes, and small calculators are allowed.

I. Questions

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1. Consider the following distribution of income in a 12-person economy, with the modern urban wage = 3, the traditional rural income = 1, and the informal urban wage = 2: (1,1,1,1,2,2,2,2,3,3,3,3). The poverty line = 1.25. Suppose rural incomes are raised to 1.2 through expanded agricultural exports. What happens to relative inequality? Absolute poverty?

   Answer:

   The new distribution of income becomes (1.2, 1.2, 1.2, 1.2, 2, 2, 2, 2, 3, 3, 3, 3). Inequality decreases. Poverty does not change (the headcount ratio, H/N remains constant at =4/12).

2. The following income distribution data are for Brazil.

Quintile	Percent Share	Cumulative dististribution
Lowest 20%	2.0%	2.0%
Second quintile	7.9%	9.9%
Third quintile	11.8%	21.7%
Fourth quintile	19.6%	41.3%
Highest 20%	58.7%	100%
Highest 10%	43.0%	

   (a) Carefully graph the Lorenz curve associated with the distribution data for Brazil, labeling the axes.

   Answer: The cumulative distribution by quintiles is 2.0, 9.9, 21.7, 41.3, and 100.

   (b) Brazil's national income is about $350 billion. What is the approximate dollar income of the bottom 20%? Bottom 40%?

   Answer: $ 7 billion=350x0.02 and $ 34.65 billion=350x0.099.

3. Explain what is meant by the term *coordination failure* and provide an example.

Answer: This is a state of affairs in which agents are unable to coordinate their efforts, and hence end up in an equilibrium that leaves them worse off than they would be if they were able to coordinate. There are several examples offered in the text, or the students may come up with their own.

4. Assume a closed economy, perfectly elastic labor supply, and linear technology. Suppose the incremental capital-output ratio (ICOR) is 3, the depreciation rate is 3%, and the gross savings rate is 15%. Use the Harrod-Domar growth equation to determine the rate of growth. What would the gross savings rate have to be to achieve 7% growth?

Answer:

The growth rate is

$$\left(\frac{\Delta Y}{Y}\right) = \left(\frac{s}{c}\right) - \delta = \left\{\left(\frac{15}{3}\right) - 3\right\} = 2\%,$$

The saving rate is

$$s = c\left\{\left(\frac{\Delta Y}{Y}\right) + \delta\right\} = 3(7 + 3) = 30\%$$

5. What are the key assumptions of the Lewis model that give rise to its conclusions? How would the theory's conclusions differ if these assumptions do not hold?

Answer: The surplus labor in the rural sector guarantees an infinitely elastic labor supply in industry until the surplus is exhausted and a propensity to save by industrialists equal to one. The lack of rural surplus labor (and infinite labor supply) would imply that when industrialists reinvest their profits there is no guarantee that their surplus increases. A low marginal propensity to save by industrialists puts a break on the labor transfer process.