

**Economics 404W  
Second Midterm Exam**

April 7, 2004

**ANSWER KEY**

This exam has 3 sections. Each will be weighted in accordance with the time it is allotted. **For full credit, be sure to explain your answers when asked to.**

**In cases of cheating, it is the policy of the Department of Economics to impose the most severe penalties that are consistent with University guidelines.**

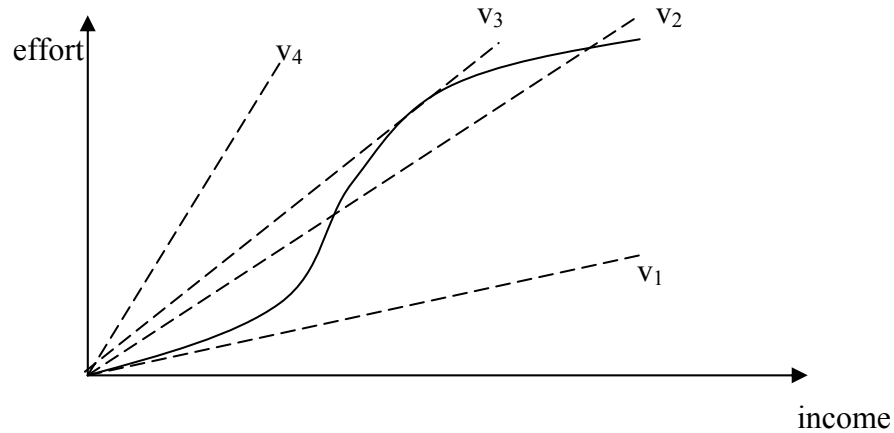
**Part I (20 minutes): Multiple Choice. For each of the following, circle the single best answer. Answers: 1)A, 2)C, 3)B or C, 4)A, 5)C, 6)A, 7)B, 8) C or D, 9)A, 10)C, 4 points each**

- 1) The minister of labor looks out her window and observes large numbers of informal sector workers shining shoes and selling pretzels. She resolves to create new government jobs at the prevailing (legally fixed) urban wage in order to absorb these underemployed people. Presuming this minister's country is characterized by the Harris-Todaro model, the likely consequence will be:
  - a) higher formal employment levels, and more informal sector workers.
  - b) higher formal employment levels, and a stable number of informal sector workers.
  - c) lower formal employment levels, and fewer informal sector workers.
  - d) lower formal employment levels, and more informal sector workers.
  
- 2) Comparing the opinions of managers in less developed countries (LDCs) to those of managers in developed countries, which of the following do LDC managers consider to be relatively severe problems?
  - a) Burdensome labor market regulations
  - b) Burdensome safety or environmental regulations
  - c) Corruption among government bureaucrats
  - d) Burdensome regulations for starting new businesses
  
- 3) As economies grow and per capita income rises, the rate of population growth eventually slows down because of each of the following *except*:
  - a) The opportunity costs of women's time increases.
  - b) Women breastfeed their children for longer periods.
  - c) Mortality rates fall as health conditions improve.
  - d) Girls remain in school longer and marry later.
  
- 4) It has been argued that the manufacturing sectors of developing countries are relatively competitive because:
  - a) They specialize in products for which market entry costs are relatively low.
  - b) There are relatively few producers in each manufacturing industry.
  - c) They are often prohibited from exporting, so they must compete fiercely with one another for the limited domestic market.
  - d) Governments in developing countries enforce anti-monopoly laws relatively aggressively.
  
- 5) Migrants to the city are often willing to work at low-paying informal sector jobs because:
  - a) these jobs pay more than the alternative jobs in agriculture.
  - b) by moving to the city, migrants are able to hook up with extended family and leave their children in the care of urban relatives.
  - c) by moving to the city, migrants place themselves in a position to compete for high-paying formal sector jobs.
  - d) they hope to catch a glimpse of their country's leaders.

- 6) The rate of population growth exhibits tremendous inertia through time because:
- when population growth rates are high, a relatively large fraction of the population is of child-bearing age.
  - as wages rise, the income effect generally dominates the substitution effect for fertility decisions.
  - the welfare programs that spring up to care for families with large numbers of children simply encourage people to have large families.
  - parents become more risk averse as their income rises, and thus opt for larger family sizes to ensure old age support.
- 7) Income inequality tends to persist through time for all of the following reasons except:
- Poor families cannot afford to pay for their children's education, nor do they have the collateral to offer creditors for education loans.
  - Governments typically charge more for primary education in rural areas.
  - Poor parents without education find it relatively difficult to educate their children, and they need their children to help earn income rather than go to school.
  - When few people are wealthy, few people have the collateral necessary to set up businesses. The scarcity of businesses keeps the demand for unskilled workers low and the unskilled wage low.
- 8) Theory suggests that poor households tend to distribute their (meager) income unevenly among their members to enhance their ability to generate earnings. In support this theory, economists note that:
- In poor households, the caloric intake of some children often exceeds recommended levels.
  - The average caloric intake of women is less than the average caloric intake of men.
  - Mortality rates among girls are much higher than those among boys of the same age.
  - Widows with relatively little bargaining power die younger than married women of similar age.
- 9) Which of the following is often cited as an argument in favor of government intervention to slow population growth?
- Families do not take into consideration the burden they impose on their country's public resources when they decide how many children to have.
  - According to the Solow-Swan model, an increase in the population growth rate should tend to increase the rate of return on capital.
  - The cross-country correlation between population growth rates and rates of growth in per capita income is very weak.
  - Without government intervention to control population the ratio of boys to girls is likely to become too high.
- 10) Which of the following claims is often made in support of inward-oriented development strategies?
- Protection from foreign competition creates opportunities for rent-seeking.
  - Protection makes it easier for firms to access foreign technologies.
  - Protection creates more opportunities for learning by doing.
  - Protection encourages entrepreneurs to focus on the production of primary products.

**Part II (15 minutes): Multi-part Problems**

1. Using the effort curve graphed below, what is the minimum piece rate at which workers will supply their services in the labor market? \_\_\_\_\_ Briefly explain your answer.



*The piece rate increases as the v-lines become flatter. At any intersection of the effort curve and the piece rate line, a worker can sustain his or her level of effort, given his or her wages. But at any piece rate below  $v_3$  (i.e., at any line steeper than  $v_3$ ), income is too small to sustain the required effort level. That is, the lowest sustainable piece rate is than  $v_3$ .*

*This question was worth 10 points; correct answers included the proper line and an explanation of why*

2. Four sisters own a small farm in Examistan. They work equally hard, and the value of their output, measured in the local currency, *chistes*, is 2,000 chistes, which they divide evenly. The urban sector of Examistan has two kinds of jobs. There are informal jobs that pay 250 chistes, and there are formal jobs that pay 600 chistes. Anybody can get an informal job, but the probability of getting a formal job is  $p = \frac{L_f}{L_f + L_I}$ , where  $L_f$  is the number of formal sector jobs and  $L_I$  is the number of people employed in the urban informal sector. (That is, the Harris Todaro model applies.)

- a. Suppose all sisters are working on the farm, and that each sister wishes to maximize her own income. What value of  $p$  will be just sufficient to deter any of them from migrating? Briefly explain your answer.

*The expected wage on the farm is  $2000/4=500$ . We need to find the probability of obtaining a formal sector job (hereafter  $P$ ) that will match expected urban wages to the farm wage:  $P(650)+(1-P)(250)=500$ , or  $P(350)=250$ , or  $P=5/7=0.7143$ .*

*Note: a probabilities greater than 1 and probabilities less than zero are never possible.*

*This part of the question was worth 10 points: 7 points for arriving at the solution, 3 points for explaining the indifference between the two choices*

- b. The full production function for the sisters' farm is given by the following table:

	Number of sisters on the farm			
	One sister	Two sisters	Three sisters	Four sisters
Value of output	750 chistes	1,250 chistes	1,650 chistes	2,000 chistes

Suppose that instead of seeking to maximize their individual incomes, the sisters seek to maximize their *total* family income. At the value of  $p$  you found in part (a) above, how many sisters should migrate? Briefly defend your answer.

*At the above probability, the expected urban wage is 500 chistes, so the sisters' wage from migrating will be the number who migrate times 500. The chart below follows from this observation:*

# on farm	0	1	2	3	4
# in city	4	3	2	1	0
Farm income	0	750	1250	1650	2000
City income	2000	1500	1000	500	0
Total Income	2000	2250	2250	2150	2000

*So, in an effort to maximize total family income either 2 or 3 sisters will migrate. This section is worth 10 points: 7 points for arriving at the correct figures, 3 points for saying why this is correct*

**Part III (15 minutes) Indicate whether each of the following statements is true, false or uncertain and briefly explain why.**

1. In developing countries, formal sector producers enjoy considerable monopoly power.

*False. Most manufacturing sectors in LDCs produce simple goods that do not require a lot of capital, i.e. they are labor intensive. Therefore, entry and exit into these markets is relatively easy, and the threat of potential entrants prevents most firms from enjoying much monopoly power.*

*10 points, 7 points for arriving at the main points, 3 points for discussion*

2. If producers are risk-neutral, the amount of uncertainty in the economy shouldn't affect their production or investment decisions.

*False. There are two points here. First, despite risk indifference the producer might be better off by holding off on his/her investment decision until the uncertainty is resolved. Second, risk creates incentives to adopt flexible technologies.*

*10 points, 7 points for arriving at the main points, 3 points for discussion and/or examples*

3. Credit markets increase the tendency for income inequality to persist.

*True. The poor typically do not have collateral to offer for a loan; therefore, they are usually unable to borrow to finance their education or their business ideas. The rich face no such constraints. Thus, countries that begin with a few rich families and many poor families tend to have relatively few businesses and lots of unskilled workers. Both factors work to keep wages low and the returns to owning businesses high. In turn, this perpetuates inequality.*

*10 points, 7 points for arriving at the main points, 3 points for discussion*