

**Economics 404W
Second Midterm Exam**

April 18, 2006

KEY

This exam has three sections. Each will be weighted in accordance with the time it is allotted.

Note that you are to answer any two of the three problems in section II. If you attempt all three problems, please indicate clearly which two you would like to have graded. (There is no extra credit for answering all three questions—if you answer all three and do not indicate which two to grade, the first two will be graded.)

For full credit, show your work on numerical problems, and be sure to explain your answers when asked to.

I. Multiple choice (30 minutes): Circle the single best answer. (40 points)

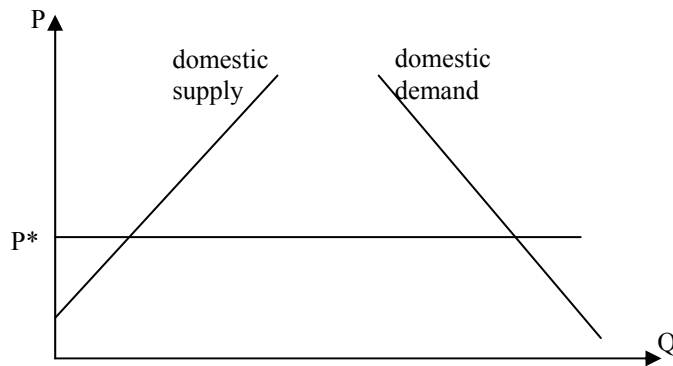
- 1) Which of the following statements concerning the industrial sector in less developed countries (LDCs) is *incorrect*?
 - a) The turnover rate—that is, the rate at which new firms enter and existing firms shut down—is typically higher in LDCs than it is in developed countries.
 - b) Firms are typically smaller in LDCs than they are developed countries.
 - c) Firms are typically less protected from foreign competition in LDCs than in developed countries.
 - d) Relative to their counterparts in developed countries, industrial firms in LDCs tend to manufacture relatively simple products, like footwear and apparel.

- 2) Comparing the opinions of managers in less developed countries (LDCs) to those of managers in developed countries, which of the following features of the business environment do LDCs managers consider to be a relatively *modest* problem?
 - a) Labor market regulations.
 - b) Policy instability.
 - c) Corruption among government bureaucrats.
 - d) Crime and theft.

- 3) Assume that the Banerjee/Newman model of entrepreneurship, credit markets and wage determination is correct. Then a rightward shift in the wealth distribution (perhaps because some households discover diamonds in their back yard) will:
 - a) Increase wages because it will make it possible for more individuals to start businesses, bidding up the demand for labor.
 - b) Increase the return to entrepreneurship because it will make it possible for more individuals to start businesses, leading to positive externalities and efficiency gains.
 - c) Reduce wages because the households that receive more wealth will be willing to work for less.
 - d) Reduce the return on entrepreneurship because it will make it possible for more individuals to start businesses, driving down the return on investment projects.

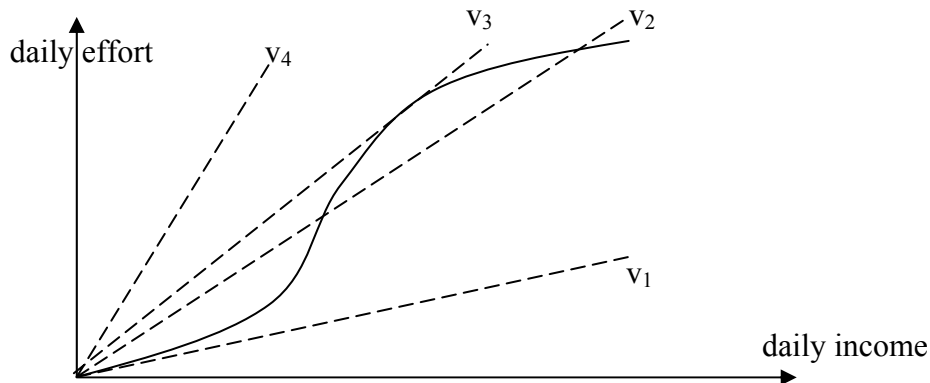
- 4) Some people have cautioned that export-oriented trade policies will lead to “immiserizing growth” in developing countries. Their basic concern is that:
 - a) Export-oriented policies will cause the industrial sector to shrink, and since industrial sectors must be big to be efficient, this will cause efficiency losses.
 - b) The relative price of primary products will decline over time, steadily worsening the rate at which developing countries can exchange their primary exports for manufactured imports.
 - c) Because of bargaining power in the rich countries, trade negotiations will steadily worsen the terms of trade agreements from the perspective of less developed countries.
 - d) Technological progress will steadily reduce transport costs, exposing developing countries to increasingly fierce foreign competition.

- 5) In a particular developing country, the domestic market for radios is competitive. But at world prices (P^*), the demand for radios exceeds the domestic supply, as depicted below.



Which of the following statements concerning the effects of a tariff on imported radios is correct?

- a) Imposing a tariff would increase the volume of imports.
 - b) Imposing a tariff would increase the efficiency of the economy (not the intended answer, but counted as correct because the possibility that tariffs could increase efficiency was briefly discussed in class.)
 - c) Imposing a tariff would increase domestic consumption of radios.
 - d) Imposing a tariff would increase domestic production of radios.
- 6) Suppose the relation between nutrition and effort for a particular worker is represented by the curved line in the diagram below. Superimposed on this line are 4 possible piece rates that the worker might be confronted with. Which of the following statements is correct?



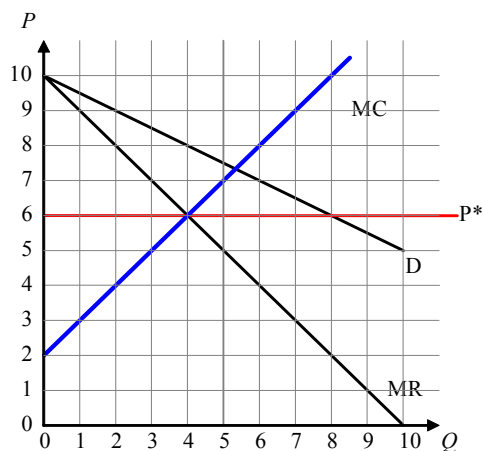
- a) If the piece rate is given by ray v_1 , it will not be possible for the worker to sustain an effort level sufficient to remain in the labor market.
- b) If the piece rate is given by ray v_2 , the worker will be able to earn more income than if the piece rate is given by ray v_3 .
- c) At the piece rate given by ray v_3 , it will not be possible for the worker to sustain an effort level sufficient to remain in the labor market.
- d) If the worker were to receive an extra daily stipend—perhaps a daily transfer from her children who are working abroad—the minimum piece rate at which she could remain in the labor market would be given by ray v_3 .

- 7) Which of the following is *not* a likely reason for persistence in income inequality through time?
- a) Poor households with little education face incentives to have large families and to invest little in their children's education.
 - b) Poor households do not have the collateral necessary to borrow, so they cannot finance their children's education.
 - c) In regions where educated workers are scarce, the return to education is highest, and people invest relatively heavily in schooling.
 - d) Poor households do not have the collateral necessary to borrow, so they can't start businesses. Instead, they support themselves by supplying labor, driving down wages and driving up profits for wealthy business owners.

- 8) Which of the following would tend to *increase* the desired number of children for a typical couple in a developing country?
- a) An improvement in the retirement benefits available through social security programs.
 - b) Improvements in the job market opportunities for women.
 - c) Urbanization.
 - d) An increase in the infant mortality rate.

- 9) The diagram below represents the domestic market for automobiles. There is one domestic automobile producer; its marginal cost schedule is labeled MC. Autos of equivalent quality can be imported at the world price, $P^*=6$. If there are no barriers to trade,

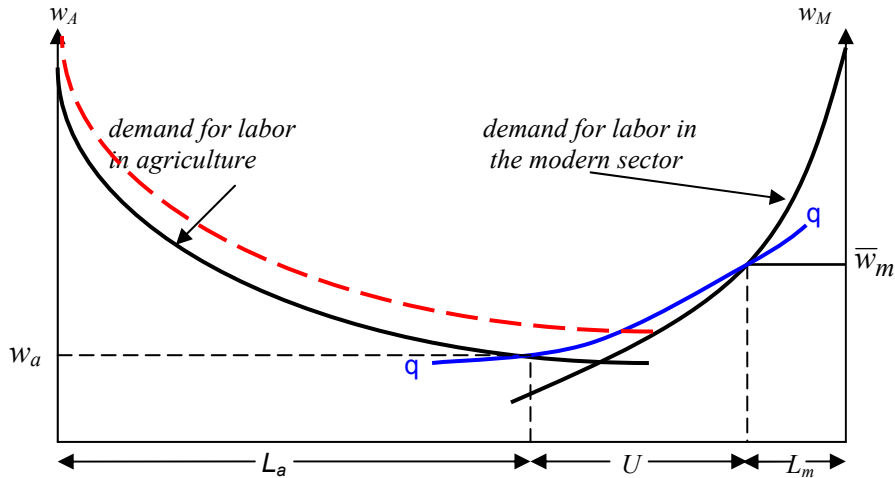
- a) Domestic producers will supply 4 cars, consumers will import 4 cars, and the price of all cars will be 8.
- b) Domestic producers will supply 4 cars, consumers will not import any cars, and the price of all cars will be 8.
- b) Domestic producers will supply 8 cars, consumers will not import any cars, and the price of all cars will be 6.
- d) Domestic producers will supply 4 cars, consumers will import 4 cars, and the price of all cars will be 6.



- 10) Which of the following arguments has been advanced *in favor* of government policies to control population growth?
- a) Larger populations contain more geniuses than small populations.
 - b) When planning their family size, couples do not take into the account the burden that their children place on public resources.
 - c) Population growth rates are not strongly correlated with growth rates in per capita income.
 - d) Increases in the labor force drive up the return on capital and induce more savings.

II. Multi-part Problems (24 minutes): Answer any two of the following 3 problems.

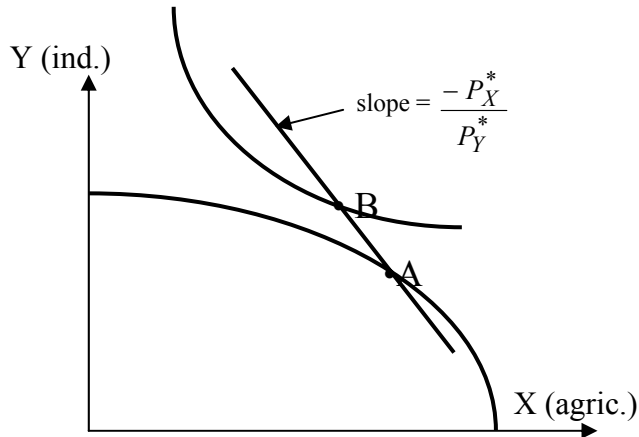
1. (16 points) The diagram below depicts labor market equilibrium in an economy characterized by the Harris-Todaro model.



- a) Alter the graph to depict the effects of an upward shift in the demand for agricultural labor, perhaps resulting from the economy opening to trade. For simplicity, assume that the demand for modern sector labor and the modern sector wage rate, \bar{w}_m , remain unchanged.
- b) Place an X in the appropriate boxes below to indicate the effects of this shift in demand on each of the following variables.

	Increase	Decrease	No Change	Ambiguous change
Agricultural wage (w_a)	x			
Agric. employment (L_a)	x			
Urban unemployed (U)		x		
Urban employed (L_m)			x	

2. The economy depicted below produces industrial goods (Y) using capital and labor, and it produces agricultural goods (X) using land and labor. Labor can move freely between the two sectors, but land is useless in industry and capital is useless in agriculture. (That is, land and capital are sector-specific.) Finally suppose that agricultural goods trade in world markets at the price P_X^* , and that industrial products trade in world markets at P_Y^* .



Assuming that production takes place at point A, and consumption take place at point B, which of the following statements is correct? Briefly explain each of your answers; grades will be based mainly on your explanations.

- a) Workers have maximized the value of their income. (True, **False**). Explanation:
The slope of the PPF at A does not match relative prices, so the value of the marginal product cannot be the same in both sectors. More precisely, it is higher in X production, and workers could increase their income by moving toward employment in the X sector.
- b) Consumers are spending all of their income (**True**, False). Explanation:
Consumption takes place on the trading line.
- c) Consumers are maximizing their satisfaction, given their income (True, **False**)
 Explanation:
Point B is not a tangency point, so they could have reached a higher indifference curve.
- d) This economy is exporting agricultural goods in exchange for imports of industrial goods. (**True**, False) Explanation:
Point B is above and to the left of point A, so the economy is producing more X than it is consuming, and it is consuming more Y than it is producing.

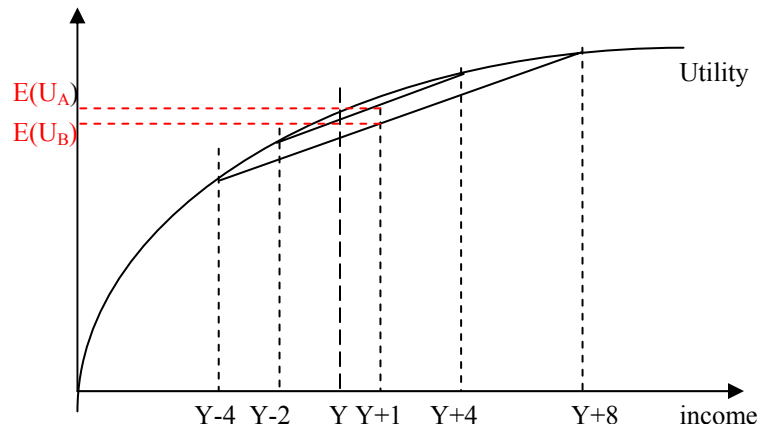
3. (14 points) The following table shows the possible net earnings outcomes from two one-period investment projects.

	earnings outcome 1 (probability = $\frac{1}{2}$)	earnings outcome 2 (probability = $\frac{1}{2}$)
Project A	-\$2	\$4
Project B	-\$4	\$6

- a) What is the expected earning from each project? That is, if each project were repeated many times, how much would it earn on average? Project A \$1
 Project B \$1
 Project A: $\frac{1}{2} \cdot (-\$2) + \frac{1}{2} \cdot (\$4) = \$1$
 Project B: $\frac{1}{2} \cdot (-\$4) + \frac{1}{2} \cdot (\$6) = \$1$

- b) Which project will a risk-averse investor prefer? (A or B) A . Briefly defend your answer.

Project A has less risk; that is, it has a lower variance. Given that it has the same expected payoff as B, it leads to higher expected utility for risk-averse investors. (Refer to $E(U_A)$ and $E(U_B)$ in the figure below.)



- c) Is it possible that an investor would be so risk-averse as to forgo investing in *either* project? (yes, no) Explain your answer. (You may wish to draw a graph as part of your explanation, but this is not required.)

Imagine the picture in part (b) above with slightly more curvature to the utility function, reflecting more risk aversity. Then the expected utility from project A would lie below the utility function evaluated at Y. (As it is drawn, the investor is nearly indifferent between holding onto Y and investing in A.)

III. Short Answer (21 minutes): Indicate whether the following claims are **true, false or uncertain**, and briefly defend your answer. Your grade will be based mainly on your defense.

1. **(14 points)** Suppose industrial sectors are subject to external economies of scale, so that big sectors more efficient than small sectors. Then it is possible that a country can make itself worse off by engaging in international trade.

True. If trade causes an economy to produce less industrial goods, yet still produce *some*, then it will be relatively inefficient in this activity, and this inefficiency will show up in low wages.

More precisely, using the model of lecture 23, purchasing power in terms of the industrial good, $\frac{w}{P_c}$, must fall if trade causes this sector to contract but not to

disappear, and purchasing power in terms of the constant returns good, $\frac{w}{P_f}$, must remain constant so long as this good continues to be produced. So consumers can lose purchasing power overall with trade.

2. An increase in women's wages is likely to have the same qualitative effect on family sizes as an increase in men's wages.

False, changes in men's income don't affect the opportunity cost of having children (unless men participate in child rearing). So increases in their income are likely to induce pure income effects, and increase demand for kids. Changes in women's wages increase the opportunity cost of child-rearing and are likely to induce substitution away from children.