

Name: \_\_\_\_\_  
Spring 2014

Economics of Development  
Exam One

Total exam is worth 30 points. Each question is worth three points. Each sub-question is worth an equal share of the three points for that question.

1) Growth models

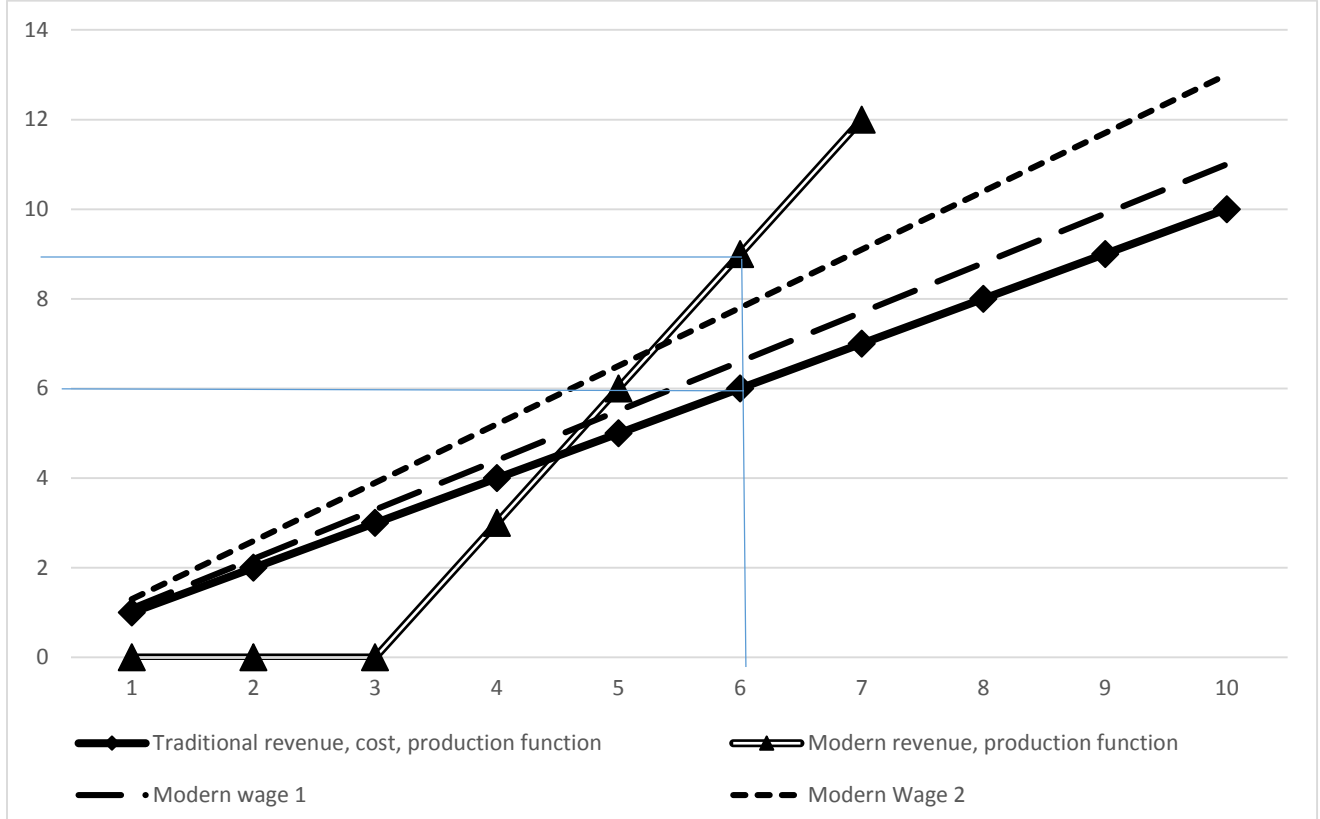
a. Contrast the functional form of the Solow model with that of the Romer model in either formulas or words describing the specific formulas.

b. Describe the nature of the spillover in the Romer model and why this particular specification can be used to explain a failure to find unconditional convergence.

c. What part of the Solow model does the Romer model endogenize? How?

2) Big Push Model.

Output



The x-axis is labor in one of N sectors of the economy measured in hundreds. 600 workers are currently employed using traditional technology, and they make 600 units, where output is measured in hundreds as well. Each worker is paid 1 per unit of work and each unit of output produced sells for 1 in the traditional sector. The line with the diamond markers is the traditional revenue, cost, and production function. The double line is the modern revenue and production function. It costs the equivalent of 300 workers to bring in the technology, but each worker is more productive with the modern technology than the traditional technology. Possible cost curves reflecting different wages in the modern sector are represented by the dashed lines.

- a. Will coordination be needed to have all N sectors in the economy modernize if the modern wage is represented by modern wage 1? Why or why not?
  
- b. Will coordination be needed to have all N sectors of the economy modernize if the modern wage is represented by modern wage 2? Why or why not?

- c. What is the nature of the spillover benefit to the other N-1 sectors of the economy of the sector represented in the figure modernizing?

3) Exchange Rates

- a. Illustrate on a supply and demand graph (supply and demand for foreign currency, price in domestic currency) an overvalued currency.

- b. If this currency is devalued, will the prices of exports from the country increase or decrease in world markets? Why?

- c. Will devaluation be more likely to increase or decrease the current account balance? Why?

4) Growth models

a) How do you increase the growth rate of an economy according to the Harrod Domar model?

b) Describe Solow's critique of this explanation.

c) Illustrate using graphs how Solow contrasts income growth from technological innovation with that which results from an increased savings rate.

5) Circle to indicate whether the statement is true or false.

Statement	Is the statement True or False?
The Harrod Domar model assumes there are diminishing marginal returns to capital in the production of output.	True or False
Sen identifies one of the main themes of the first generation of development economics the importance of agglomeration economies.	True or False
Neutral technological progress leaves unchanged the marginal rate of technical substitution for a given input bundle, but changes the amount of output produced using that input bundle.	True or False
According to the theory of comparative advantage, every country has to have a comparative advantage in the production of at least one commodity.	True or False
Positive assortive matching posits that people with similar characteristics will tend to work together.	True or False
A Cobb Douglas Production function allows for capital saving technological progress.	True or False
Solow designed his model to explain the cross country evidence suggesting there is 'conditional convergence' across countries in income per capita over time.	True or False
The United States gives more ODA to developing countries than any other country in terms of total dollars committed currently.	True or False

6) Define:

a. The Human Development Index.

b. Dumping.

c. The 'Prebish-Singer hypothesis'.

d. Transfer pricing.

7) Wadifumbi workers can produce 5 units of kale per unit of labor and 10 units of maize meal per unit of labor. Neighboring Shambakazi workers can produce 10 units of kale and 25 units of maize meal per unit of labor.

- a. Write out the production functions for each good in each of the two countries with units of output as a function of units of labor ( $y=f(L)$  takes what form for each product in each country).

	Kale	Maize Meal
Wadifumbi		
Shambakazi		

- b. Identify the product in which each country has a comparative advantage and explain why this is the product in which they have a comparative advantage.

- c. If there are 100 laborers in Wadifumbi and 100 in Shambakazi, describe the level of production of each commodity in each country in autarky if each country divides up their labor force with half of the work force allocated to each commodity.

	Kale	Maize Meal
Wadifumbi		
Shambakazi		
TOTAL		

- d. Illustrate by moving 20 of Wadifumbi's workers and 9 of Shambakazi's workers to the commodity for which they have comparative advantage how it is possible to increase total production of the two goods without using any new resources.

	Kale	Maize Meal
Wadifumbi		
Shambakazi		
NEW TOTAL		

- e. Illustrate how Wadifumbi and Shambakazi can both be better off than they were in autarky if they trade 95 units of kale for 205 units of maize meal.

	Kale	Maize Meal
Wadifumbi		
Shambakazi		
NEW TOTAL		



8) There are four workers in the economy who differ in their labor quality as defined by their 'q' value. Q is defined on a scale of [0,1] with higher q being higher quality. Worker one has q=1, worker two has q=0.8, worker three has q=0.6, and worker four is q=0.4. Production takes place using two workers, with output of combining workers i and j defined by  $y_{ij} = q_i * q_j$ . There are three ways we can arrange the workers, A, B, and C.

a) Fill in the following

Arrangement	Pair One	Resulting output 1	Pair Two	Resulting output 2	Total output (1+2)
A	(1, 0.8)		(0.6, 0.4)		
B	(1, 0.6)		(0.8, 0.4)		
C	(1, 0.4)		(0.8, 0.6)		

Say production can be increased by paying for training that will increase the q of a given worker. The cost of this training, c, can be expressed in terms of output y. Training that costs c raises the skills of a worker as represented by a 0.1 increase in their q value. As you may recall from class, training will be given to the lower q worker in a given pair so you can just focus on that.

b) What is the maximum cost c a firm would be willing to pay for the training that will increase the skill level of the 0.8 worker in a (1, 0.8) pairing as measured by output y?

c) What is the maximum cost c a firm would be willing to pay for the training that will increase the skill level of the 0.4 worker in a (0.6, 0.4) pairing as measured by output y?

d) Contrast your answers to (b) and (c) to illustrate why the O-ring theory can be used to explain a lack of 'convergence'.

9) International Issues

a. Identify major events and factors that led to 'the debt crisis' of the 1980s.

b. Describe five of the key elements Williamson identified as element of the 'Washington Consensus'

