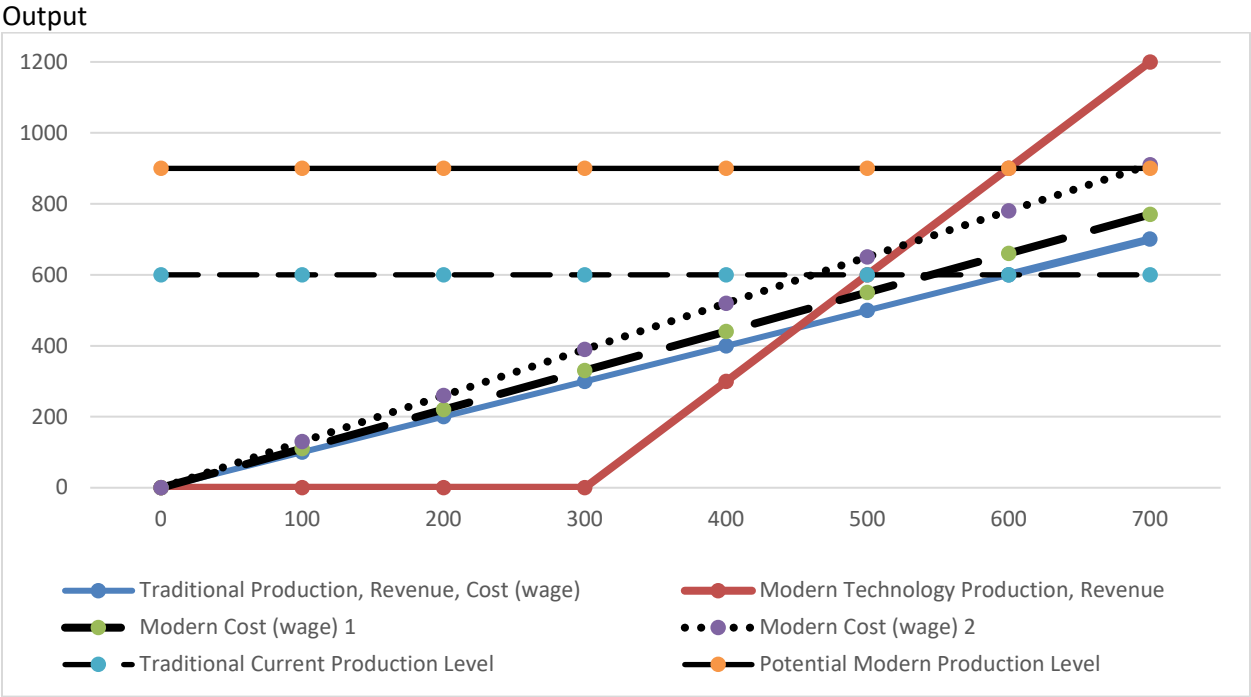
Name:_____ Economics of Development
Spring 2025 Exam 1
Total quiz is 30 points. Each question is worth three points. Each sub question is worth an equal share of these three points.

1) Exchange Rates
    a. Illustrate on a supply and demand graph for US dollars the impact of an overvalued domestic currency. The y axis is the price in domestic currency per $.

    b. If this currency is devalued to the market clearing price in local currency per $, will the prices of exports from the country increase or decrease in world markets? Why?

2) Big Push Model.



Current production uses the traditional production, revenue, and cost function to have 600 workers make 600 units of output, where each worker is paid a wage of 1 and each unit of output is sold at a price of 1.

a. Will coordination be needed to have all N sectors in the economy modernize if the modern wage is represented by modern cost (wage) 1? Why or why not?

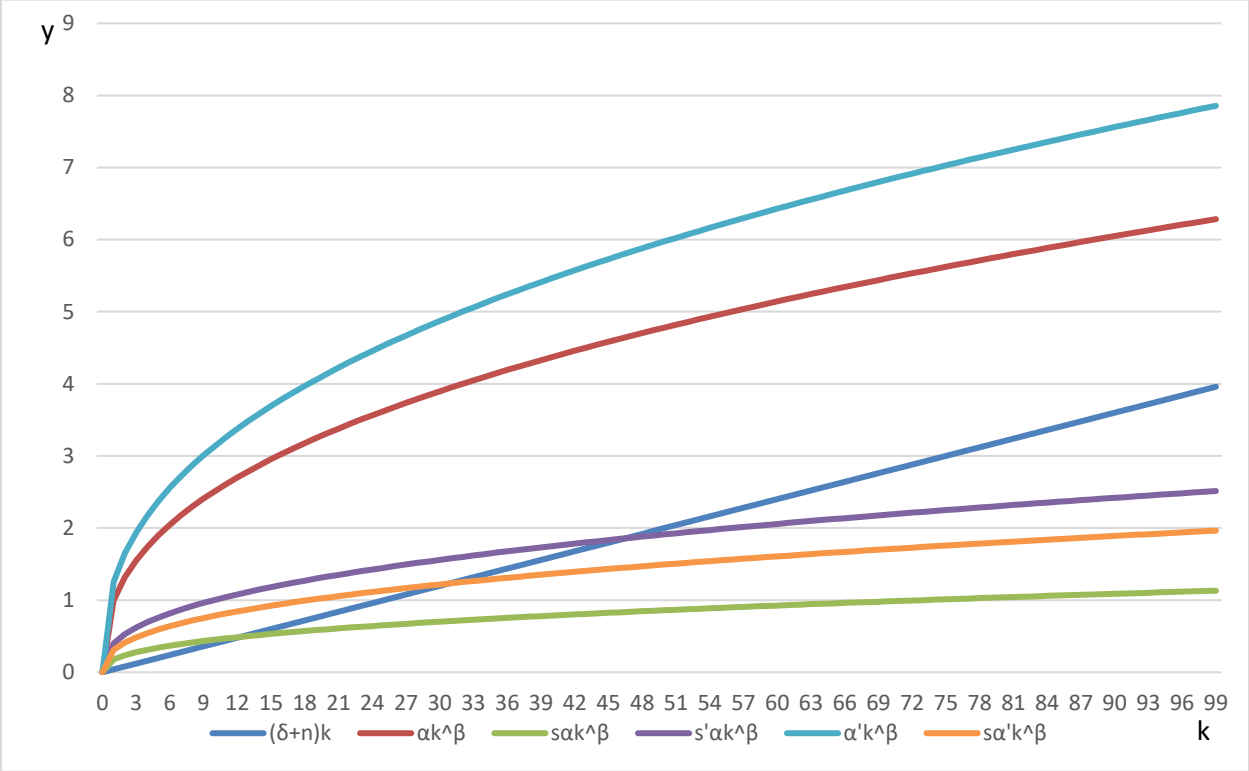
b. Will coordination be needed to have all N sectors of the economy modernize if the modern wage is represented by modern wage 2? Why or why not?

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

Statement	**Is the statement True or False?**
The Harrod-Domar model predicts increasing the incremental capital output ratio will increase the growth rate of an economy.	True or False
Sen states that one of the main themes of the first generation of development economics was planning and an economically active state.	True or False
Neutral technological progress increases the output level for a given input bundle while keeping constant the marginal rate of technical substitution at that input bundle.	True or False
Solow designed his model to explain the cross-country evidence suggesting there is 'club convergence' across high-income countries in income per capita over time.	True or False
Present value debt stocks for developing countries were reduced to zero by 2014 by HIPC 1 and HIPC 2.	True or False
The World Bank categorizes developing countries according to exchange rate conversion (Atlas method) to US dollars of each country's Gross National Product.	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
Dumping is when a firm that has monopoly power in a home country sells uses the monopoly profits to sell at a lower price in foreign markets to drive out competitors.	True or False

4) Growth theories. In the graph below, k is capital per worker on the x-axis, output per worker y is on the y-axis.



a) Define what each symbol represents.

α, α’	
s, s’	
δ	
β	
n	

b) Identify on this graph the baseline (α,s) steady state and label it with k_1^*, y_1^*

c) Identify on this graph the steady state following growth due to an increase from s to s’ with α constant (to α,s’) with k_2^*, y_2^*

d) Identify on this graph the steady state following growth due to an increase from α to α’ with s constant (to α’,s) with k_3^*, y_3^*.

5) Explaining differences living standards in cross country comparison

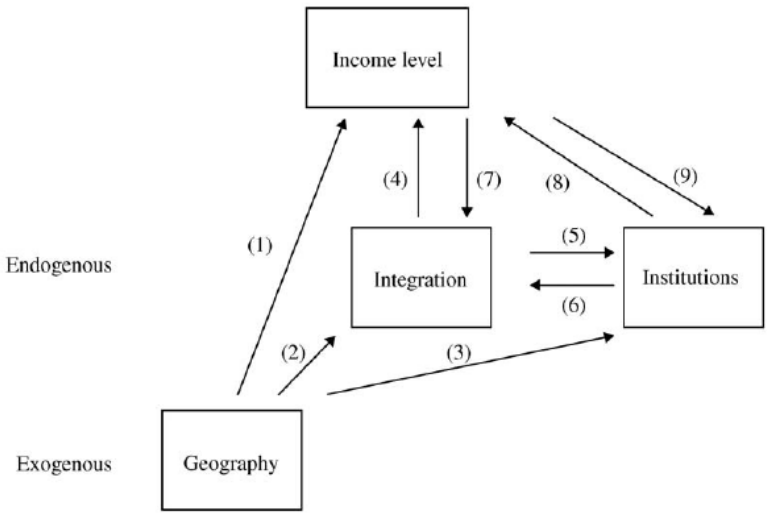


Figure 1. The ''deep'' determinants of income.

a) Describe what this figure illustrates in terms of what causes high income levels, noting the three 'strands of thought' on what leads to income differences over time.

b) Describe the estimation strategy that is adopted to deal with endogeneity concerns with either the integration or institutions variable (pick one or the other).

c) What are the main findings of the paper in terms of which 'strand of thought' is most strongly supported by the findings?

6) Define:
    a. The Human Development Index.

    b. The ‘Prebish-Singer hypothesis’.

    c. Forward linkages.

    d. Backward linkages.

7) There are four workers in the economy who differ in their labor quality as defined by their 'q' value. A q value 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 has q=0.4. Production takes place using two workers, with output of combining workers i and j defined by $y_{ij} = q_i * q_j$.

a) Fill in the following

	Combination 1	Resulting output 1	Combination 2	Resulting output 2	Total output (1+2)
Scenario 1	(1, 0.8)		(0.6, 0.4)		
Scenario 2	(1, 0.4)		(0.8, 0.6)		
Scenario 3	(1, 0.6)		(0.8, 0.4)		

b) 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 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. If training cost c =0.07 will there be a benefit to training the 0.8 worker in the (1, 0.8) pair? Explain why or why not.

c) Would a firm be willing to pay for the training that costs c=0.07 to increase the skill level of the 0.4 worker by +0.1 in a (0.6, 0.4) pairing? Explain why or why not.

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

8) Illustrate the following:
   a. Place a tariff on the imported commodity such that the selling price with the tariff is higher than the international price but less than the domestic price if no imports are allowed. Show the level of domestic supply, the level of international supply, and the tax revenue generated. Contrast the autarky outcome, the open market outcome, and the tariff outcome. Y axis is price, x axis is quantity.

   b. The tariff is proposed as a way to develop a domestic manufacturing industry that will become more efficient as the domestic industry 'learns by doing'. What would 'learning by doing' look like on your graph to (a) – what part of the graph would change over time? You can verbally describe the change or draw the change.

9) Workers in Jinka produce 8 units of shoes and 3 units of rice per unit of labor. Workers in neighboring Yabello produce 12 units of shoes and 6 units of rice for each unit of labor.

a. If there are 100 laborers in Jinka and 100 in Yabello 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.

	Shoes	Rice
Jinka		
Yabello		
TOTAL		

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. Move 9 Jinka workers to the commodity in which they have comparative advantage and 5 Yabello workers to the commodity in which they have comparative advantage. What levels of each commodity are now produced in each country and total?

	Shoes	Rice
Jinka		
Yabello		
TOTAL		

d. Trade 70 units of shoes from where shoes is the comparative advantage for 28 units of rice from where rice is the comparative advantage. How does the amount of each commodity in each country now compare to what you found in (a)? Why did this happen?

	Shoes	Rice
Jinka		
Yabello		
TOTAL		

10) Returns to scale
    a. Define and contrast constant returns to scale (CRS) and increasing returns to scale (IRS).

    b. Contrast the Solow model with Romer's model using formulas. Define variables and parameters used in these formulas.

    c. Describe how these models differ in terms of returns to scale.

Work Page