

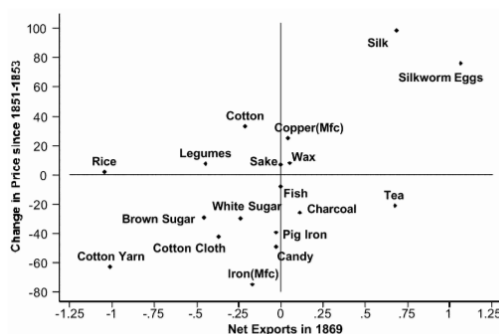
Summer 2020 ECON 6280 - Survey of International Economics
Midterm on International Trade

- This exam is **DUE** by **5:00 pm ET, Monday, July 20, 2020**.
- You must upload your answer to the Blackboard or email to jeffkuo@gwu.edu. If you fail to upload or to send an electronic copy by the deadline, your exam will **not** be graded.
- There are **three** different versions of the exams. You **must not** discuss this exam with anyone other than the Instructor to the due date and time.
- Students are encouraged to come forward in good faith with evidence should the potential violations of academic integrity happened.
- Any violations of the University Honor Code will be subject to the sanctions provided by the University's code of academic integrity.

Exam Version: A. Full Name: _____ GWID: _____

1 Multiple Choice (64%, 16 questions with 4 points each)

1. Which of the following is NOT the assumption in the Hecksher-Ohlin Model?
 - (a) There are two countries in the world.
 - (b) The constant return to scale of the production inputs.
 - (c) There are two goods will be traded on the market.
 - (d) The production possibility frontier is a concave curve toward the origin.
2. Which of the following can NOT be interpreted from the following graph from Browns and Bernhofen (*Journal of Political Economy*, 1994)?



- (a) In 1869, Japan relied heavily on importing foreign rice.
- (b) The prices of exporting goods increase.
- (c) Goods traded more internationally have the higher-level fluctuation of prices.
- (d) The prices of essential goods, such as Sake, Rice, remain relatively stable.

3. Which of the following is a salient feature of vertical FDI?
 - (a) Each stage of production in the country can be done at the least cost.
 - (b) Companies engage in the same production activities in multiple countries.
 - (c) It's observed often between countries with a similar economic development level.
 - (d) In old trade literature, it is refers to as North-North FDI.

4. The Ricardian model is based on all of the following except
 - (a) Only two nations and two products
 - (b) Labor is the only factor of production.
 - (c) There is no diminishing return in the marginal productivity of the labor.
 - (d) Product quality varies among nations.

5. Which of the following is not considered to be an explanation of the Leontief Paradox?
 - (a) The United States was not engaged in completely free trade.
 - (b) U.S. and foreign technologies are not the same.
 - (c) Leontief distinguishes between skilled and unskilled labor.
 - (d) Leontief does not consider effective labor productivities.

6. Consider the reduced form of the simple gravity equation in trade,

$$T_{ij} = A_{ij} \frac{(Y_i)^\alpha (Y_j)^\beta}{(Distance_{ij})^\gamma}$$

The term A_{ij} is the so-called “demand shifter” in the model, which is an indicator of how the exporting goods attracted the other countries. Larger A_{ij} means the consumers in the destination country j prefer the original country i 's goods the more. Suppose the U.S. is exporting goods to country A, B, C, and D. The bilateral trade data between the U.S. and the destination countries were given as the following table. Given that the U.S. GDP at that year is 200 \$million, and $\alpha = 1, \beta = 1$, and $\gamma = 1$ were estimated by using the previous year data. Which of the country likes the goods made in the U.S.A. the most?

Country j	Country j's GDP	Distance to the U.S.	Trade Volume between U.S. and j
A	800 (\$million)	100 (km)	7500(\$million)
B	400 (\$million)	40 (km)	7800(\$million)
C	700 (\$million)	50 (km)	7500(\$million)
D	30 (\$million)	10 (km)	800(\$million)

Table 1: Gravity Model Simulation Scenario

- (a) Country A (b) Country B (c) Country C (d) Country D

7. The principle benefit of tariff protection goes to
- (a) domestic consumers of that good produced.
 - (b) foreign consumers of the good produced.
 - (c) domestic producers of the good produced.
 - (d) foreign producers of the good produced.
8. The Heckscher–Ohlin model assumes that there are two countries. Each produces two goods (say manufacture and agriculture) using labor and capital. Which of the following is an additional assumption of the Heckscher–Ohlin model?
- (a) One nation has larger quantities of both capital and labor than the other country.
 - (b) Capital is a specific resource in producing manufactured goods, and labor is a specific resource in producing agricultural goods in each country.
 - (c) Labor and capital can move between countries.
 - (d) The ratio of the quantity of labor to the quantity of capital is different for each nation, resulting in different “endowments” of capital and labor.
9. Suppose that country 1 is capital-abundant relative to country 2. Both produce two goods (X and Y). Factor-intensity reversal occurs whenever:
- (a) X is capital-intensive in country 1 and labor-intensive in country 2.
 - (b) X is capital-intensive in both countries.
 - (c) X is capital-intensive in country 1, and Y is labor-intensive in country 2.
 - (d) Y is capital-intensive in both countries.
10. Suppose Portugal has 700 workers and 26,000 units of capital, and France has 18,000 workers and 700 units of capital. Technology is identical in both countries. Assume that wine is the capital-intensive good and cloth is the labor-intensive good. Which of the following statements is correct if the nations start trading with each other?
- (a) Wages will increase in Portugal.
 - (b) Rental rates in France will increase.
 - (c) Wages in France will decrease.
 - (d) Rental rates in Portugal will increase.

11. Starting from free trade, when a tariff is applied to imports in a small country, which of the following increase?

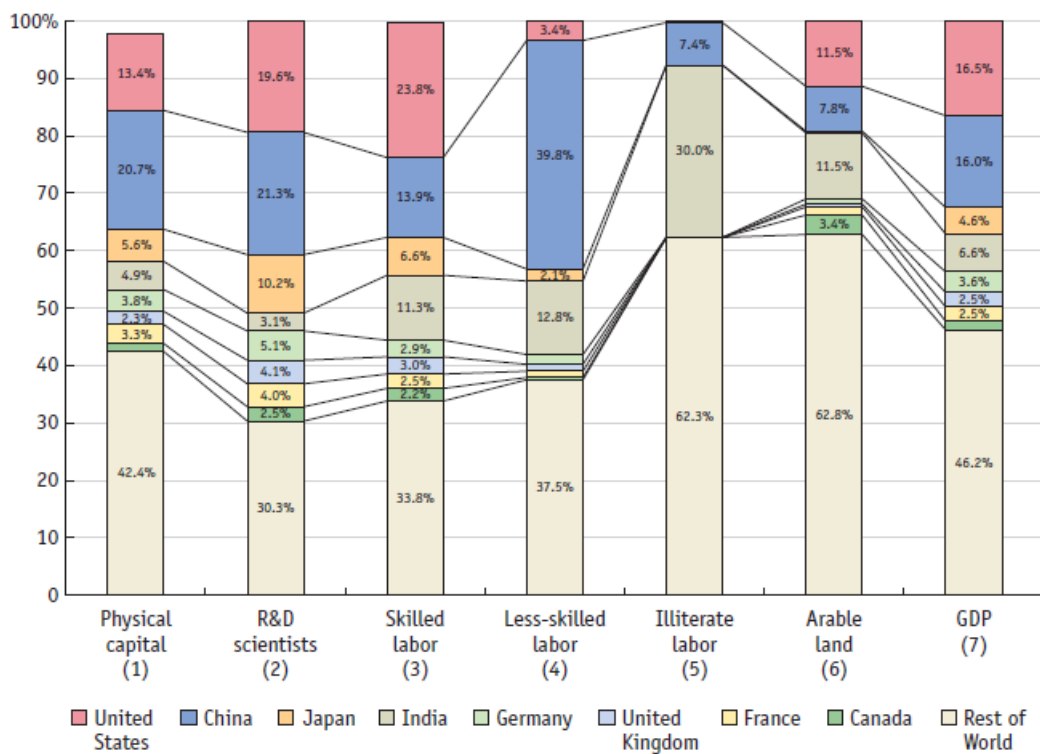
- I Domestic output
- II Domestic demand
- III Domestic price
- IV Tariff revenue
- V Quantity of imports

- (a) I and III only
- (b) II, and IV only
- (c) I, III, and IV only
- (d) All but V

12. If additional land were to be brought into cultivation in the Specific Factor model, the output of manufactures would fall because of

- (a) lower marginal productivity of labor in this sector.
- (b) lower marginal productivity of labor in food production.
- (c) higher marginal productivity of labor in manufacture sector.
- (d) lower labor input in the manufacture sector.

13. According to the following graph, except the rest of world, among the 8 countries, how many are scarce in the R&D scientists?

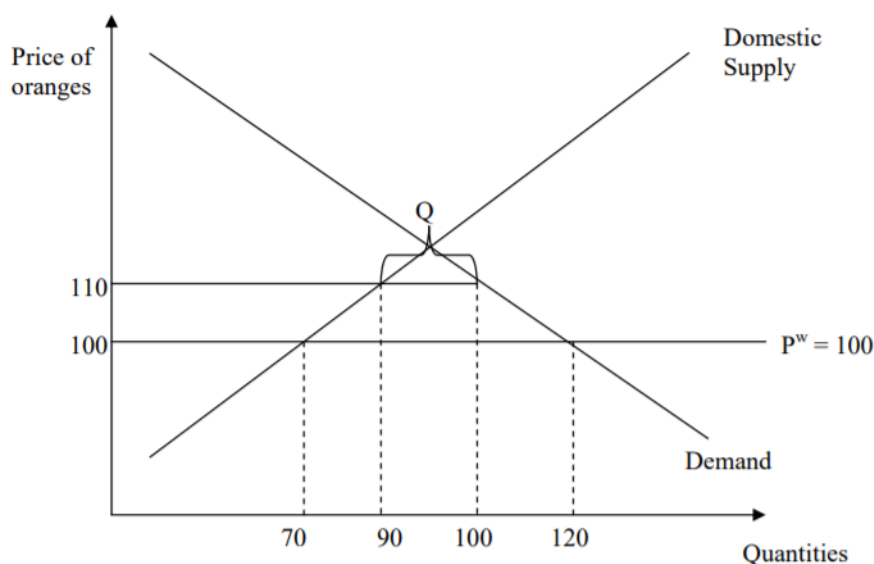


- (a) 1
- (b) 3
- (c) 5
- (d) 6

14. The gravity model offers a logical explanation for the fact that
- (a) trade between Asia and the U.S. has grown faster than NAFTA trade.
 - (b) trade in services has grown faster than trade in goods.
 - (c) trade in manufactures has grown faster than in agricultural products.
 - (d) Intra-European Union trade exceeds International Trade of the European Union.
15. Given the terms of trade information in the table below, which countries' terms of trade improved between 1990 and 2000?

Nation \ Year	Export Price Index		Import Price Index	
	1990	2000	1990	2000
Mexico	100	220	100	200
Sweden	100	160	100	150
Spain	100	155	100	155
France	100	170	100	230
Denmark	100	120	100	125

- (a) Mexico and Denmark
 - (b) Sweden and Denmark
 - (c) Mexico and Sweden
 - (d) Sweden and Spain
16. Use the following diagram and information regarding the market for oranges in the US. P^w denotes the world price of oranges in US dollars. Quantities are expressed in millions of tons. There is an import quota of 10 million tons denoted by Q in the graph. Which of the following statements is true?



- (a) Consumption under free trade is 70 million tons of oranges.
- (b) Production under the quota is 100 million tons of oranges.
- (c) The price of oranges increase in 20 dollars due to the quota.
- (d) Under free trade, imports are 50 million tons of oranges.

2 Short Answer (6%. 2 questions with 3 points each.)

Provide your answer with less than five sentences. Mathematical representations and graphs are preferred and are not counted into the number of sentences.

1. Stolper-Samuelson Theorem

2. Rybczynski Theorem

3 Analysis and Calculation (30%. 2 questions with 15 points each.)

1. Consider a numerical example of two-country, two-sector, and two-good model. There are two sectors in the economy, the manufacturing sector and the agricultural sector. In the short run, the agricultural sector uses only labor and land, while the manufacturing sector uses only capital and labor. Table 2 shows the information observed in both sectors in the short run.

(in million \$)	Manufacture Sector	Agricultural Sector
Sales revenue	100	100
Payment to labor	25	50
Payments to capital	75	-
Payments to land	-	50

Table 2: Payments to the production factors in the short-run

In manufacturing sector, the percentage of decreases in price: $\frac{\Delta P_M}{P_M} = -20\%$

In agricultural sector, the percentage does not change in price: $\frac{\Delta P_A}{P_A} = 0\%$

In both sector, percentage of decreases in the wage $\frac{\Delta W}{W} = -10\%$

- (a) Calculate out the change on the Rental for Capital ($\frac{\Delta R_K}{R_K}$) and the change on the Rental for Land ($\frac{\Delta R_T}{R_T}$).

- (b) Determine the relationship between the value of $\frac{\Delta P_M}{P_M}$, $\frac{\Delta W}{W}$, $\frac{\Delta R_K}{R_K}$, $\frac{\Delta R_T}{R_T}$, 0. Is it consistent with the prediction of the Specific-factor model?

- (c) Now, consider the long-run situation, which means the capital and land could move across the sectors, or be treated as the identical “new capital” of the sectors. Both industries, in the long-run, produce their goods by using “new capital” and “labor.” Please identify the long-run equilibrium condition and find out the percentage change of wage $\frac{\Delta \tilde{W}}{\tilde{W}}$ in the long run. Does it reflect the results of the Stolper-Samuelson Theorem?

2. Ricardian Model Revisits

There are two ways to measure the production efficiency in the Ricardian Model, “marginal labor productivity” and “unit labor requirement.” According to the textbook, we are used to “marginal labor productivity” defined as output per additional unit of labor.

If we take the perspective from the other side of production, we can also use “unit labor requirements” to measure the productivity of the labor. The “unit labor requirements” is defined as units of labor required for producing per unit of output.

For those two terms, one is just the reciprocal of the other.

For example, in Country A, all the following statements are equivalent.

- . The marginal productivity of the labor in producing a computer is equal to 2.
- . An additional labor unit could produce 2 units of computers.
- . The unit labor requirement for an additional computer is $\frac{1}{2}$.
- . To produce an additional unit of the computer requires $\frac{1}{2}$ unit of the labor.

(Unit Labor Requirement)	Cloth	Wine
Home	$\frac{1}{2}$	$\frac{1}{4}$
Foreign	$\frac{1}{8}$	$\frac{1}{10}$

Table 3: Unit Labor Requirement

- (a) Given the “Unit Labor Requirement” information of two countries in Table 3. Please transform the format into the “Marginal Productivity of Labor.”
- (b) Which country has a comparative advantage in producing cloth? Which has a comparative advantage in producing wine?
- (c) Given the information in part (a), please draw out the Production Possibility Frontiers for both countries, if both countries have 100 units of labor.
- (d) Use the PPF you drew out in part (c) or the answer in part (b) to identify the trade pattern, if two countries decide to trade with each other.
- (e) What are the terms of trade condition that both countries are willing to trade?