

## Problem Set 02

**Instructions:** Answers must be submitted online through the designated Canvas assignment. This Problem Set is due on **October 21 at 01:59pm**. Please write as legible and clearly as possible. You will not be given full credit if your answers cannot be easily understood.

### Questions

1. [8 points] Answer the following short questions

- (a) [2 points] In your own words, how would you define **Labor Abundance** in the Heckscher-Ohlin model setting?

It is the country w/ the highest labor-capital ratio.

It means the country has more labor than capital, relatively speaking

- (b) [2 points] How does the capital-labor ratio help us determine patterns of trade?

It tells us in what factor each country has a comparative advantage

Trade flows are determined through comparative advantages + 2

- (c) [2 points] Describe the key difference(s) that separate the HO model from the Ricardian model

Has 2 factor inputs (adds capital) in the model.

Country PPFs are curves b/c of unequal trade-offs across production levels. Factor Endowment Differences, not tech.

- (d) [2 points] Describe the **Gravity Model**. What does this model ignore?

+1 for describing

The Gravity Model describes trade as a function of country size & distance. model

It ignores what type of goods are sent. It only addresses volume.

+1 for mentioning it ignores type of goods, barriers, income, comp. advantage

2. [6 points] Suppose we are considering an **HO Model setting**, where countries have not yet opened up to trade. Two goods are produced: **Suits** and **Ozempic**. Suppose that tailoring **Suits** is **labor-intensive** in production as it is primarily done by hand and making **Ozempic** is **capital-intensive** in production as it requires exact and automated machinery. The countries, Country A and Country B, have the following **Labor (L)** and **Capital (K)** endowments.

Factor	L	K
Country A	1120	575
Country B	1680	950

- (a) [2 points] What are the **Capital-Labor Ratios** for each country?

Country A	Country B
$\frac{K}{L} = \frac{575}{1120} = 0.51$	$\frac{K}{L} = \frac{950}{1680} = 0.57$

- (b) [2 points] Which country has comparative advantage in producing tires?

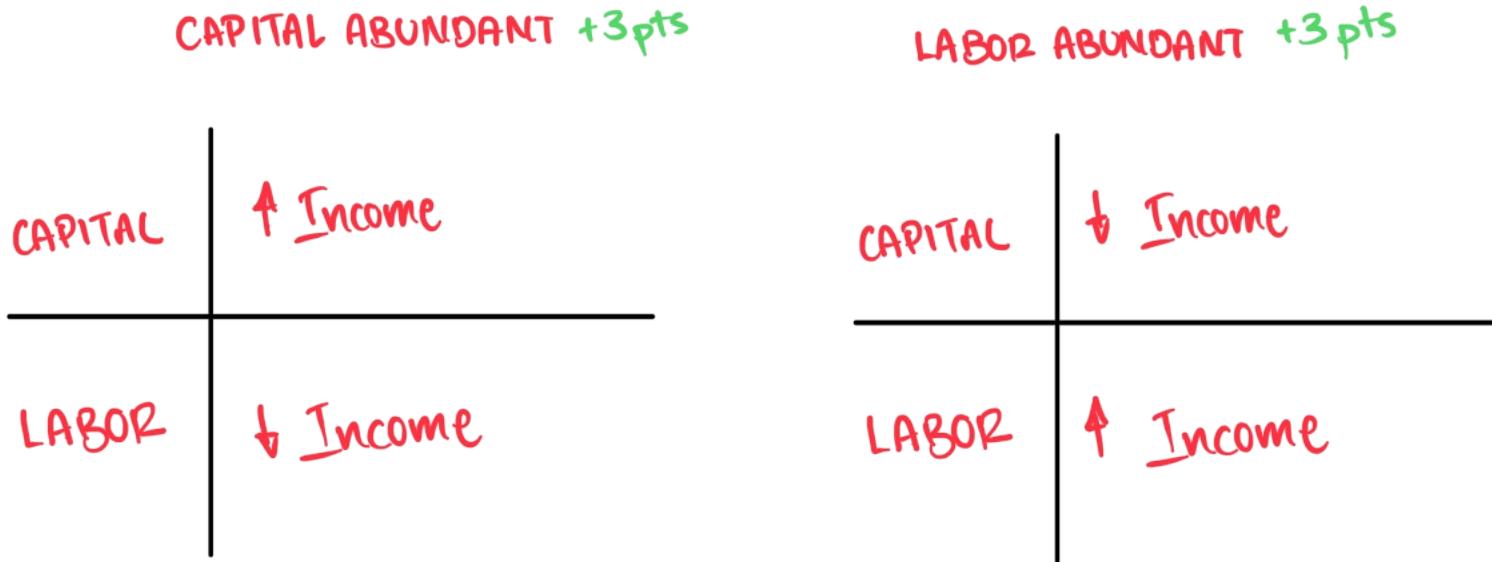
Country B as they are relatively more capital endowed

- (c) [2 points] How will trade flows look once each country specializes?

Country A will export suits & import Ozempic

Country B will export Ozempic & import suits  
+1 for each country described correctly

3. [6 points] How do trade outcomes play out for owners of factor inputs when trade opens?  
Address both capital and labor outcome when a country is abundant in either capital or labor.



Look for the movements as shown in the tables above

4. [4 points] Consider the **Specific-Factor Model**. What are the implications for domestic labor income of switching from autarky to open trade, when a given country is **land-abundant**? Is this impact different if the country is **capital-abundant** instead?

Assuming capital & land are the specific factors:

Effects on labor income are indeterminate.

This depends on which specific-factor price is stronger & how consumer preferences align

Impact should not be different across factor abundant possibilities b/c of the above reasons.

5. [6 points] Recall the **Magnification Effect** we learned in lecture. Let the capital share be 27% and the labor share be 63% to produce Banana Bread. If the rental rate of capital were to remain constant, then a 12% increase in the price of Banana Bread must be accompanied by what percentage increase/decrease in wages?

$$P_{BB} = \alpha_L \cdot w + \alpha_K \cdot r \quad +2 \text{ for work}$$

$$12\% = 0.63 \cdot \Delta w + 0.27 \cdot 0\%$$

$$12\% = 0.63 \cdot \Delta w$$

Wages must increase

$$\Delta w = \frac{12\%}{0.63} = 19.05\%.$$

+3 for  
correct answer

by 19.05%. +1 for clearly  
highlighting answer

6. [4 points] We covered ambiguities of changes in labor outcomes, given greater openness to trade. Who does **Autor et al (2013)** suggest are the most vulnerable with respect to labor market outcomes in the US, following Chinese trade liberalization between 1990 and 2007?

Labor in import-competing industries. Specifically the manufacturing industry

7. [4 points] Find a research article of interest related to trade and labor market outcomes that we did not cover in class. Cite the study in APA format. Describe the most interesting findings in a single paragraph.

Completion

Quick look if citation looks correct