

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 L-K ratio

It means the country has more relative labor than capital

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

It tells us what factor each country has a comp. adv. in.

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

1. HO has 2 factors of input (L, K), Ricardo has 1 (L)
2. PPFs are a curve in HO, Ricardo is a straight line
3. Comp. Adv. is given through factor endowments, not tech.

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

Describes trade as a fn. of market size & distance. It only addresses volume of trade. It ignores the type of goods being traded

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?

$$\begin{array}{c|c}
 \text{A} & \text{B} \\
 \hline
 \frac{K}{L} = \frac{575}{1120} = 0.51 & \frac{K}{L} = \frac{950}{1680} = 0.57
 \end{array}$$

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

Country B

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

	Country A	Country B
Exp	Suits	Ozempic
Imp	Ozempic	Suits

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.

CAPITAL ABUNDANT		LABOR ABUNDANT	
INCOME		INCOME	
CAPITAL	↑	CAPITAL	↓
LABOR	↓	LABOR	↑

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 specific factors

Labor is variable

Effects on labor income (wages)
is indeterminate

Impact should be no different across
factor abundant possibilities

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?

$$P_{BB} = \alpha_L \cdot W + \alpha_K \cdot r$$

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

$$\Delta W = \frac{12\%}{0.63} = 19.05\%$$

W must ↑ by
~ 19.05%

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