EC 380 Problem Set 02

Instructions: Answers must be submitted online through the designated Canvas assignment in a **PDF file**. Any other file type is not allowed. This Problem Set is due on **January 22 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. Answer the following short questions
 - (a) [4 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 PATIO (SMALLEST K-L PATIO)

IT MEANS THE COUNTRY HAS RELATIVELY MORE LABOR THAN CAPITAL

(b) [4 points] How does the capital-labor ratio help us determine patterns of trade?

IT HELPS US DETERMINE THE COMPARATIVE ADVANTAGE FOR EACH COUNTRY

- (c) [4 points] Describe the key difference(s) that separate the HO model from the Ricardian model
 - 1. HO HAS 2 FACTORS OF INPUT (L, K), RICAPDO HAS 1 (L)
 - 2. PPFS ARE CURVED IN HO, RICARDO IS A STRAIGHT LINE
 - 3. RICARDO HAS CONSTANT TRADE-OFF, OH YARIES DEPENDING ON GOODS QUANTITIES
 - 4. IN OH, COMP. ADV. IS GIVEN BY FACTOR ENDOWMENTS, PICARDO USES TECH.

2. Suppose we are considering an HO Model setting, where countries have not yet opened up to trade. Two goods are produced: Suits and Distilled Whiskey. Suppose that tailoring Suits is labor-intensive in production as it is primarily done by hand and making Distilled Whiskey 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	1473	832
Country B	1261	853

(a) [4 points] What are the Capital-Labor Ratios for each country?

COUNTRY B

$$\frac{k}{L} = \frac{832}{1473} = 0.56$$

$$\frac{L}{k} = \frac{1361}{883} = 0.68$$

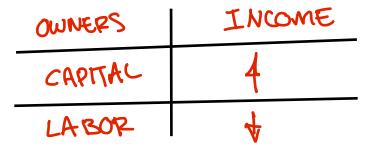
(b) [4 points] Which country has comparative advantage in producing Distilled Whiskey?

COUNTRY B

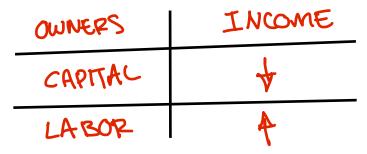
(c) [4 points] How do trade flows behave for each country once each of them specializes?

COUNTRY A WILL ETFORT SUITS & IMPORT WHISKEY &
IMPORT SUITS

- 3. Consider the gains and losses experienced by owners of input factors. Assume that in this economy there is only **Capital and Labor**.
 - (a) [4 points] How does trade affect owners of capital and owners of labor under a **Capital Abundant country**?



(b) [4 points] How does trade affect owners of capital and owners of labor under a **Labor Abundant country**?



- 4. Consider the **Specific-Factor Model**. Assume that **Land** and **Capital** are the **Specific Factors**.
 - (a) [4 points] What are the implications for domestic labor income of switching from autarky to open trade, when a given country is **land-abundant**?

THE EFFECTS ON LABOR INCOME IS INDETERMINITE

(b) [2 points] Is this impact different if the country is capital-abundant instead?

IMPACT SHOULD BE NO DIFFERENT IN THIS CONTEXT - AMBIGUOUS

5. [12 points] Consider a small, open economy that produces two goods: Exotic Flowers and Semi-conductors. In order to make either good, producers must use both factors of production: Labor and Capital. Either good requires a specific mix of input factors:

Exotic Flowers

Semi-conductors

• 64% Labor & 36% Capital

23% Labor & 77% Capital

The economy initially operates under **autarky**. After opening to trade, the world relative price of **Exotic Flowers** increases from 10 to 12. Assume the economy adjusts fully to the new price ratios, with full employment.

Hint: The percentage change in the price of a good is given by:

$$\Delta P_x = \frac{P_x^{new} - P_x^{old}}{P_x^{old}} \times 100$$

Using the Magnification Effect we learned in lecture, find the percentage change in wages (Δw) for labor and the percentage change in return to capital (Δr) for capital

$$P_{\pm} = \alpha_{L} \cdot \omega + \alpha_{K} \cdot r$$
 $P_{\mp} = 0.64 \cdot \omega + 0.36 \cdot r$

Price goes from 10 to 12

Ly 20% increase

 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$
 $\Delta P_{\mp} = 0.64 \cdot \Delta \omega + 0.36 \cdot \Delta r$

Semi-conductors

$$P_S = \alpha_L \cdot \omega + \alpha_K \cdot v$$
 $P_S = 0.23 \cdot \omega + 0.77 \cdot v$

Prices does not change

Ly 0'/. increase

$$\Delta P_S = 0.23 \cdot \Delta \omega + 0.77 \cdot \Delta v$$

$$0 = 0.23 \cdot \Delta \omega + 0.77 \cdot \Delta v$$

$$-0.23 \cdot \Delta \omega = 0.77 \cdot \Delta v$$

$$\Delta \omega = -0.77 \cdot \Delta v$$