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?

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

   (c) [4 points] Describe the key difference(s) that separate the HO model from the Ricardian model

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?

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

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

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**?

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

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

- 64% Labor & 36% Capital

Semi-conductors

- 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