

ECON 3100

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Written Assignment 1

Due: 9:30 AM Thursday, September 19th

1. **(Ricardian Model)** Suppose the table below reflects each country's production of cheese and wine.

**Output Per Worker**

Output per worker	Argentina	Brazil
Cheese	1 ton	2 tons
Wine	5 casks	40 casks

- a.) Which country has an absolute advantage in producing Cheese? Which country has an absolute advantage in producing wine?
- b) What is the relative price of Cheese in Argentina if it did not trade? What is the relative price of Cheese in Brazil if it did not trade?
- c) What is the opportunity cost of producing cheese in Argentina? What is the opportunity cost of producing cheese in Brazil? Who has the higher opportunity cost?
- d) Which country has a comparative advantage in cheese production? Which country has a comparative advantage in wine production?
- e) Assuming Argentina has 250 workers and CRS production functions, derive the PPF for Argentina. Remember to use your full employment condition combined with your two production functions.
2. **(Specific Factors Model)** Consider a stylized model where two goods are produced: wheat (agricultural goods) and cars (manufacturing goods). There are three factors of production: labor, land, and capital (machines), Wheat production requires land and labor and car production uses labor and capital.
- a) What factors are specific and what factors are variable (mobile)?
- b) Suppose Germany has an endowment of 30 units of capital and 90 units of land and France has 10 units of capital and 60 units of land. Which country is relatively more abundant in capital? Which country is relatively more abundant in land?
- c) Which product does each country export?
- d) When the countries open up for trade, what happens to demand for cars produced in Germany? What happens to the demand for wheat produced in Germany? How do you

think this impacts the return to capital and land in Germany? Remember when we say the return to capital, we mean what happens to the income of the people who own the capital or the people who own or rent the land. In most market economies, the owners of the capital are the people who own the company which can be the owners (the proprietors) or the owners of stock. The people who own the farmland hire employees to work on the farm and they receive the difference between the sale price and the cost of labor.

- e) When the countries open up for trade, what happens to demand for cars produced in France? What happens to the demand for wheat produced in France? How do you think this impacts the return for capital and land in France?

3. **(Specific Factors Model)** Let's use this same model and make it a little more relevant to current topics. Let us again consider two countries: Mexico and the United States. The countries produce two goods: cars and computers. The assembly of cars requires capital and low-skilled workers and the production of computers requires capital and high skilled workers.

- What factors are specific and what factors are variable (mobile)?
- Suppose Mexico has an endowment of 20 high-skilled workers and 80 low-skilled workers and the US has 150 high-skilled workers and 100 low-skilled workers. Which country is relatively more abundant in low-skilled workers? Which country is relatively more abundant in high-skilled workers?
- Which good do you think is likely to export? Which good is the US likely to export? How does this impact low-skilled workers in Mexico? How does this impact low-skilled workers in the US? How are high-skilled workers in both countries impacted?
- Why do you think the auto industry in the US and the UAW were in favor of renegotiating the North American Free Trade Agreement?
- About 25 percent of Mexico's exports to the US are auto parts and roughly 47 percent of Mexico's market share of robotics, sensors and similar equipment comes from the US. Is this consistent with our model?

5. **(Heckscher-Ohlin Model)** According to the following table, which country is relatively more labor abundant? Explain your answer. Which country is relatively more capital abundant?

	United States	Canada
Capital	60 machines	10 machines
Labor	360 workers	80 workers

- a) If the two goods produced in this economy are breakfast pastries and mopeds and the production of mopeds is relatively more capital intensive and breakfast pastries are

relatively more labor intensive. What goods would you expect the US to export? What good would Canada export? Explain.

- b) If pastries are on the Y axis and mopeds on the X axis, draw the PPF for each country, and the direction of the shift in production that each country experiences from an autarky position (similar to the graphs shown in class).