Problem Set 2

EC 391: International Economics I

Due on: Monday July 16, 2018

## True/False/Uncertain (24 points)

<u>Instructions:</u> For the each of the following statements, indicate whether it is true, false, or if the assertion is indeterminate. In all cases, defend your answer with a concise explanation. **To earn full credit, you must include an explanation with your answer.**

1. In the Ricardian framework, everyone always gains from trade (assuming that the free trade price differs from the autarky price) but in the Specific Sector Model, the factor used to produce the good which is imported always loses.

2. If the U.S. is abundant in skilled labor relative to unskilled labor, then the Stolper-Samuelson theorem suggests that when the U.S. increases its trade with China, wage inequality in the U.S. should rise.

3. Increasing returns to scale will lead to monopolies in world trade and therefore consumers will lose from trade.

4. In the monopolistic competition model, we expect prices to be lower as the number of firms increases.

5. In the Specific Factor model, an increase in the stock of labor lowers real wages, raises the return to the specific factor that uses labor intensively, and lowers the return to the specific factor in the other industry.

6. In the Heckscher-Ohlin model, countries will tend to specialize in the good they produce most of in autarky.

Longer Questions (30 Points)

1. (**Specific Factors With Vanishing Marginal Product**) Consider the Specific-Factors model discussed in class. The figure below shows an initial production equilibrium. It differs from what we usually assume, however, in that $MPL_A = 0$ at a certain industry size, and in equilibrium, the agriculture (A) industry is at such a size.

   (a) Show what the PPF looks like for this economy, where, on the PPF, it is operating in this initial equilibrium. (Hint: Think about what it means for the marginal product of A to fall to zero).

   (b) Suppose now that the relative price of good A rises ($\frac{P_A}{P_M} \uparrow$). What happens to the output of each good, and to the real wage (i.e. what happens to $Q_M, Q_A, \frac{w}{P_M}$ and $\frac{w}{P_A}$)?

Figure 1: Labor Market Equilibrium
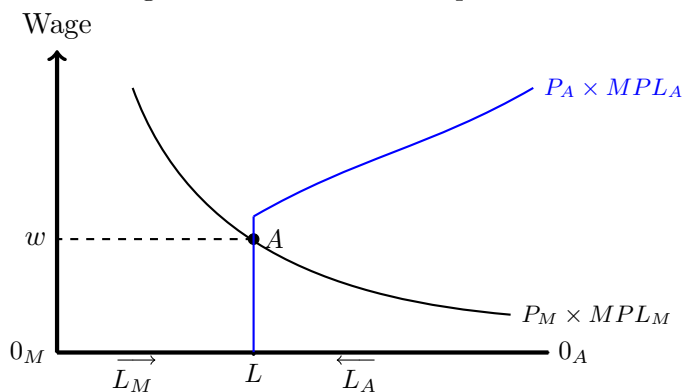
2. (**Heckscher-Ohlin Model**) Suppose two countries: France and Germany, use only capital (K) and labor (L) for production. France has 2,050 units of capital and 916 units of labor, and Germany has 816 units of capital and 270 units of labor. Both countries produce two goods: cars and wine. In Germany, there are 366 units of capital and 135 units of labor employed in the wine industry. In France, there are 926 units of capital and 618 units of labor employed in the wine industry.

   (a) Which country is labor-abundant? Which country is capital abundant?

   (b) Which industry is labor-intensive in Germany? Which industry is capital-intensive in Germany?

   (c) Suppose that France and Germany do not engage in international trade. Assuming the countries have identical preferences, which country would have the cheaper relative price of wine?

   (d) Now suppose that the two countries trade with one another. What will happen to the relative price of wine in France?

   (e) What is the effect of free trade on labor in France? On capital owners in France?

   (f) What are the effects of free trade on wages and rental on capital in Germany?

   (g) With the opening of trade, what is most likely to occur in terms of the production of cars in France?

3. (**Effects of NAFTA**) Prior to the passage of NAFTA, there was a 20% tariff on Caterpillar products entering Mexico. Caterpillar is an American construction machinery/equipment company, and it has a 50% share in the Mexican market, with the other half being dominated by Komatsu Company of Japan. Analyze the expected gains and losses to (i) the U.S. (ii) Japan, and (iii) Mexico following the passage of NAFTA.