International Trade – Fall 2018

Problem Set 3

Monopolistic competition and Home market effect

1. Monopolistic competition

Consider a country H where each firm has monopoly power over a single variety x_j. A firm pays a fixed cost f and a variable cost b, so it hires labor according to

$$l_j = f + bx_j$$

Suppose the representative consumer has L_H units of labor for which he receives a wage w. The consumer has utility over N differentiated goods given by

$$U = \left[\sum_{j=1}^{N} q_j^{\frac{\sigma-1}{\sigma}} \right]^{\frac{\sigma}{\sigma-1}}$$

a. Show that demand for good j is given by

$$q_j = \frac{p_j^{-\sigma}}{\sum_{k=1}^{N} p_k^{1-\sigma}} wL_H$$

b. What is the optimal price for each variety?

c. Compute the equilibrium number of varieties.

Assume that country H can trade with country F without incurring any transportation costs. The technology and preferences are equal in the two countries, the only thing that is different is the size of the countries, L_H and L_F.

d. Compute the imports and exports.

e. Are there any gains from trade?

2. Home market effect

Suppose that there are two countries, H and F, producing two types of products. There are two types of consumers in each country, L only gets utility from consuming type A products, while $\tilde{L}$ only gets utility from consuming B type products. Use the same utility function as in problem 1 for each product type. The countries are equal in size and technologies, but differs in the fraction of consumers belonging to each type. The countries can trade, but there is a fixed iceberg trade cost.

a. Compute the relative demand of imported goods.

b. What determines the trade pattern between these two countries?

c. Compute the equilibrium production pattern. What factors affect the with of the band of non-specialization, and how?