Econ 720a. International Trade. Fall 2005.
Final Exam. December 7th
Instructor: Irene Brambilla

1. Short Questions

① Consider the Heckscher-Ohlin model with 2 countries, 2 goods and 2 factors. Give two reasons (apart from endowments lying outside the FPE set) why factor price equalization may not occur in practice. (15 points)

② You want to study empirically the effects of a particular trade liberalization episode on the productivity of domestic producers. What is the advantage of observing firm-level production data instead of industry-level data in terms of the conclusions that can be drawn about the reasons for the change in productivity? (15 points)

③ You want to compare empirically the productivity of firms that export vs. firms that do not export. You have data on output, workers, wage bill, intermediate inputs, the stock of capital and investment at the firm-level, and whether the firm exports or not. You estimate TFP using the Olley and Pakes method. Suppose that firms that export produce higher quality goods that in turn require higher quality intermediate inputs. How can this bias the conclusions about productivity? *Note: the question does not refer to reverse causality issues between exporting status and productivity.* (15 points)

④ Consider the Helpman, Melitz and Yeaple model of FDI. Firms choose between exports and FDI (or none) based on their productivity, the fixed cost of exporting and investing abroad, and the variable transport costs. Suppose there is a decrease in the cost of investing abroad (but still the cost of investing abroad is higher than the fixed cost of exporting). How do firms react according to their productivity levels? What are the implications for average productivity of firms in the host country? (15 points)

2. Specific factors model

The specific factors model is a generalization of the Heckscher-Ohlin model. There are two countries (home and foreign), two goods (1 and 2), and three factors (L, unskilled labor, H, skilled labor, and K, capital) with their respective factor prices (w, s, and r). The production of good 1 requires capital and *unskilled* labor, while the production of good 2 requires capital and *skilled* labor. The production technology in sectors 1 and 2 is given by

$$\begin{aligned} x_1 &= a_{1K}(w,r)K_1 + a_{1L}(w,r)L_1 \\ x_2 &= a_{2K}(s,r)K_2 + a_{2H}(s,r)H_2 \end{aligned}$$

where x denotes production and a the unit requirements factors of production.

① Write down the zero-profit conditions (in terms of the unit cost functions) and the full employment conditions for the home country in the same fashion as in the Heckscher Ohlin model but including the new assumptions on the production technology. (10 points)

② Can the system be solved recursively? Is there factor price equalization across countries under free trade? (15 points)

③ Suppose the movement from autarky to free trade involves an increase in the relative price of good 1. What are the distributional assumptions for the specific factors (skilled and unskilled labor)? What about capital? (15 points)