Macro II
Spring 2022

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Homework 3

(due on June 15)

Question 1: Monopolistic Trade Model à la Krugman (JIE 79).

a) Derive the pricing and the break-even schedules and show how they determine the equilibrium quantity and price. Then solve for the equilibrium number of firms.

b) Describe in detail all economic effects of integrating two equally sized economies of this type. Explicitely compare the number of firms under free trade to the autarky number in a single country, as well as to the total number under autarky across the two countries.

c) Now assume CES preferences as in Krugman (AER 80). How does this change your answers to a) and b)?

Question 2: Consider the heterogeneous firm trade model as pioneered by Melitz (Econometrica 2003):

a) Formally derive the entry and export market cutoffs φ^* and φ_x^* as well as the equilibrium number of firms, and show how these variables respond to changes in the trade cost.

b) Now assume that productivity is drawn from a Pareto distribution, that is the density function takes the form kx_m^k/x^{k+1} where x_m is the lower bound of the support, and repeat your calculations from part a).

c) Suppose that in addition to exporting there is an additional channel to serve foreign markets, namely (horizontal) FDI with higher fixed but lower variable trade cost (compared to exporting). Discuss which firms will make use of this channel, and how changes in trade cost affect exports and FDI (cf. Helpman/Melitz/Yeaple AER 2004).

Question 3: Melitz vs. Krugman monopolistic competition models of trade.

a) List and explain the differences in assumptions between the models of Krugman (JIE 1979) and of Melitz (Econometrica 2003).

b) Explain how the number of firms is determined in the Krugman and Melitz models respectively. Do they use the same zero profit condition? Why or why not? Explain in detail.

c) Monopolistic competition implies that firm make monopoly profit. Explain what this monopoly profit is used to pay for in the Krugman and Melitz models respectively.