

International Trade – Final Exam

Directions: You will have two hours to complete this exam. Read each question carefully and think your way through each problem. Don't lose points due to carelessness. **Points will be deducted for irrelevant information and/or if your answer is incomprehensible.**

Questions for ALL Students

Part I – 60 points – The faraway countries of Medlennostan and Tierradenunca have not engaged in international trade for several centuries. (That's why you've never heard of them).

Both countries have developed a lemondisk industry with so many firms that each firm in the lemondisk industry takes the prices charged by rival firms as given. In an effort to insulate themselves from competition, each firm produces a different variety of lemondisk. The Medlenno people and the Tierradenuncans have identical preferences, so each firm in the lemondisk industry faces the same demand function which is given by:

$$Q = \frac{S}{n} + S \cdot b \cdot (\bar{P} - P)$$

where Q is the quantity of lemondisks sold by the firm, S is total sales in the lemondisk industry, n is the number of firms in the industry, P is the firm's price, \bar{P} is the average industry price and b is a constant that measures the responsiveness of sales to a change in prices. For simplicity, assume that S does not change when \bar{P} changes.

The only factor used to produce lemondisks is labor which is in infinitely elastic supply. There is also a fixed cost associated with the production of lemondisks. Consequently, each firm in the lemondisk industry faces the same cost function, which is given by:

$$TC = FC + Q \cdot MC$$

where TC is total cost, FC is fixed cost, MC is marginal cost and Q is the quantity produced.

The Economist Intelligence Unit obtained the following data on the lemondisk industry in Medlennostan: $S = 100$, $b = 1/9$, $FC = 25$ and $MC = 10$. Since the economies of each country are identical to each other, we can assume that the same data also describes the lemondisk industry in Tierradenunca.

1. (5 points) Find the relationship between the number of firms and average cost of producing a lemondisk in Medlennostan.
2. (5 points) Find the relationship between the number of firms and the price of a lemondisk in Medlennostan.
3. (5 points) Draw those two relationships on the same graph.
4. (5 points) Calculate the equilibrium price and the equilibrium number of firms in Medlennostan.

Now suppose that the governments of Medlennostan and Tierradenunca are negotiating an agreement that would allow free trade between the two countries.

5. (5 points) If the countries engaged in free trade, what would be the equilibrium price of lemondisks?
6. (5 points) If the countries engaged in free trade, what would be the equilibrium number of firms?
7. (10 points) Would trade between the two countries reflect comparative advantage? Why or why not?
8. (10 points) Why would consumers in Medlennostan and Tierradenunca benefit from free trade?
9. (10 points) Would anyone lose from trade? (In other words, would there be any redistribution effects?) Why or why not?



Part II – 30 points – Consider the following statement:

“Well, another possible sell-off tonight, this time in our automobile business. Communist China’s largest auto parts maker is in talks now to buy factories in this country from Ford and General Motors. That’s according to *The Financial Times*. Imports already account for a third of the auto parts market in this country. If these acquisitions were to go ahead, those imports would be dominating the U.S. market.”

– Lou Dobbs on his CNN show “Lou Dobbs Tonight” (8 Dec 2006)

10. (15 points) If Chinese firms invest in the US auto industry, would imports of auto parts dominate the US market as Dobbs claims? Why or why not? In your answer, use a theoretical model of capital mobility to show that the US trade deficit and flows of Foreign Direct Investment (FDI) into the US indicate that the US has a comparative advantage in future production.

In chapter 7 of the KO textbook, Krugman argues that the lack of correlation between FDI flows and overall US capital imports indicate that FDI flows are not primarily a way of transferring capital.

11. (15 points) If FDI flows are not a means of transferring capital, then why would Chinese auto parts makers wish to acquire factories in the US?



Part III – 60 points – Answer the following questions:

12. (20 points) What are the difficulties with using data from a cross-section of US cities to estimate the impact of immigration on native wages? Give the main difficulties listed by Friedburg and Hunt (*JEP*, 1995) and by Card (*JLE*, 2001).
13. (20 points) How does Card attempt to overcome each of these difficulties? Describe his methodology and list his three main conclusions.
14. (20 points) Why does Card conclude that the “measured effect of immigrant inflows on the native relative wage structure are small?”



Part IV – 50 points – Krugman (chap. 10 of the KO textbook) discusses three problems associated with the infant-industry argument for Import-Substitution Industrialization (ISI) and cites evidence which suggests that trade restrictions may cause (or at least amplify) economic dualism. Dornbusch (*JEP*, 1992) lists six channels through which countries may benefit from trade liberalization.

15. (25 points) List several reasons why economists have been increasingly critical of ISI policies since the 1970s.
16. (25 points) Which of the problems associated with ISI strategies do you think are most likely to reduce a country’s level of economic development? Discuss.

A Few More Questions for Graduate Students

Part V – 40 points – Answer the following questions:

17. (10 points) Helpman (*JJIE*, 1987) emphasizes the role of differential country sizes in the Gravity Equation. Explain how relative size should affect bilateral trade according to Helpman’s theorem.
18. (10 points) Debaere (*JPE*, 2002) tests Helpman’s theorem using data for 14 OECD countries and for a group of non-OECD countries. How do his results for the OECD countries differ from his results for non-OECD countries?
19. (10 points) Explain why the difference in results indicates that OECD countries engage in intraindustry trade, while non-OECD countries engage in interindustry trade.
20. (10 points) What are border effects? Explain why border effects have an asymmetric effect on countries of different size.



Part V – 10 points – Smaller countries (i.e. those with smaller populations) are more dependent on trade than larger countries. For example, according to the Penn World Table, in 2004, the population of Hong Kong was 7.5 million people (which is slightly less than the population of the five boroughs) and Hong Kong’s imports totaled 181 percent of GDP. By contrast, in 2004, the population of the United States was 295.4 million and its imports totaled only 15 percent of GDP.

Consider the following regression equations (standard errors in parenthesis) and answer the question below about “omitted variable bias:”

$$\frac{I}{Y} = 2.53 + 0.095 \cdot \frac{M}{Y} + 1.24 \cdot \ln(\text{population})$$

(5.94) (0.037) (0.54)

$$n = 76 \quad R^2 = 0.098 \quad F\text{-stat} = 3.95 \quad \text{Prob}(F\text{-stat} = 0) = 0.023$$

$$\frac{I}{Y} = 15.71 + 0.050 \cdot \frac{M}{Y}$$

(1.64) (0.032)

$$n = 76 \quad R^2 = 0.032 \quad F\text{-stat} = 2.45 \quad \text{Prob}(F\text{-stat} = 0) = 0.121$$

21. (10 points) Why is the slope coefficient on imports as a fraction of GDP (i.e. M/Y) lower in the regression that does not control for a country’s population size?

NOTE: The preface to this question gives you the reason why we need to control for population size (smaller countries are more dependent on trade than larger countries). The question you have to answer is: **“why is the slope coefficient biased downward in the second regression?”**