

Name _____

Student ID _____

MIDTERM EXAMINATION 2July 22th, 2013

Instruction: Read all instructions carefully. If you have any question don't hesitate to ask, the worst thing that will happen is I'll say "I can't tell you that." Answer all questions in your blue book. Upon completion place your test form inside your blue book and hand in both.

TRUE FALSE UNCERTAIN: For questions 1-6 begin your answer with the quick assertion "true", "false", or "uncertain" and justify your answer with a few sentences. Do not spend too much time answering any of these questions: a few sentences at most will suffice. (5 points each)

1. Suppose that imports and exports in an industry are both \$100 million. If exports rise to \$200 million, the value of the industry's index of intra-industry trade will fall.
2. Testing Paul Samuelson's model of a decrease in prices of exported production factors, we find that there has been significant deterioration in the U.S. position with respect to merchandise trade.
3. Starting in the early 1980s, the United States saw an increase in relative wages for skilled workers and an increase in the level of employment of skilled workers, which was difficult to explain with models of trade at the time, such as the H-O model.
4. Vertical FDI refers to provision of a service or production of component parts of a good in different countries that are then used or assembled into a final good in another location.
5. In horizontal models of multinational activity, foreign direct investment flows between neighboring countries are particularly appealing.

SHORT ANSWER QUESTIONS: For questions 6-8 read the questions completely before answering. When you are asked to "briefly explain" a few well written sentences is sufficient.

6. (15 points) In 2006, Proctor and Gamble (P&G), one of the largest American multinational consumer goods companies opened a new manufacturing plant in Lodz, Poland, to produce Gillette blades and razors. Discuss how opening a manufacturing plant in Poland relates to the location decision models of FDI developed in class. Please mention *both* of our rationales for offshoring in your answer.
7. (30 points) Consider the Melitz model presented in class in which firms produce differentiated goods and face downward sloping demand given by the following

$$q(P) = S \left[\frac{1}{N} - b(P - \bar{P}) \right],$$

And produce with different marginal costs.

$$c_1 < c_2 < c_3 < \dots < c_n$$

Imagine we are starting from a free trade equilibrium where two countries of identical size (Home and Foreign) trade freely. Then for some reason trade is closed off, therefore total demand and the total number of firms in the market is cut in half.

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- a. Without imposing symmetry, graph the demand curve faced by each firm in Home before and after trade is closed off. Label the trade demand curve D^T and the no trade demand curve D^A . Briefly explain the difference between D^T and D^A , and use the functional form of the demand above to support your claim. (5 points)
 - b. Graph operating profits as a function of firm specific marginal cost before and after trade is closed off. Place operating profits on the vertical axis. Label the trade operating profits curve OP^T and the no trade operating profits curve OP^A . Briefly explain whether operational profits are increasing or decreasing in costs and why? (10 points)
 - c. Using the operating profits graph from (b) define three groups of firms based on their marginal cost: Winners, Losers and Entrants. Briefly explain what is true about the productivity of all Entrants relative to all other firms? Has average firm productivity gone up or down? (10 points)
 - d. Briefly explain the cost to consumers that resulted from closing off trade. (5 points)
8. (30 points) Consider the Feenstra Hanson Model of offshoring intermediate good production. There are two countries Home and Foreign. Home wages for both skilled and unskilled labor are higher than Foreign and Home's high-skilled labor has a lower relative wage than Foreign's high-skilled labor (i.e. $\frac{w_s}{w_u} < \frac{w_s^*}{w_u^*}$.) Additionally the return on capital is lower in Home than Foreign (i.e. $r < r^*$.) There is a continuum of intermediate goods used in the production of a final good. Intermediates differ in their skilled labor intensity but all intermediate goods are produced with both types of labor along with capital. Assume that returns to factors are such that offshoring will take place.
- a. Demonstrate an offshoring equilibrium using a graph with the the cost of production in Home and in Foreign for each intermediate good (label as C and C* respectively) on the vertical axis and intermediates on the horizontal axis ordered in ascending order of skill intensity. On your graph label the intermediate good which costs the same to produce in Home and in Foreign as Z^* . Also label the set of intermediate goods produced in Home and the set of good produced in Foreign. (10 points)
 - b. Will Home's offshored production activities have high or low skill intensity? That is, will Home offshore activities that are high-skilled labor-intensive or low-skilled labor-intensive? Briefly explain. (5 points)
 - c. Suppose that some capital is allowed to flow between Home and Foreign, and since the return to capital is higher in Foreign than in Home, capital will flow into Foreign, lowering the cost of capital in Foreign and raising it in Home. Demonstrate what happens to the cost of production in both locations and the set of intermediates produced in each country on your graph from (a). Label this new equilibrium Z^{*2} . (10 points)
 - d. In a few sentences explain what will happen to the relative wage in both countries after capital flows into Foreign. Be sure to support your answer by explaining what will happen to the average skill intensity of production in both countries. (5 points)