

Economics 39F: Midterm

Please be concise and to the point. Print your name on your exam and turn it in with your blue books. You have 65 minutes. The exam has 50 points. Answer Part I and *either* question 1 or 2 from Part II. Good luck!

Part I. (30 points) The COVID-19 pandemic that began in the winter of 2020 has shaken the entire world, and the world trading system has certainly not been spared. Governments everywhere are now worried about the possibility of future pandemics that might be even more disrupting to normal patterns of life. A possible “worst-case” scenario is a new virus that arises in some country and that is so dangerous that it causes countries to shut their borders to all international trade (i.e., revert to autarky) in an attempt to prevent the virus outbreak in one country from turning into a global pandemic. You have been hired by the Biden Administration to evaluate such a scenario and settle a within-Administration dispute.

Specifically, a disagreement has erupted within the Biden economic team as to the short run and long run impacts on US relative prices of closing US borders to international trade. Biden Team 1 claims that the relative price of the US import good to its export good will rise by *more* in the short run than in the long run if the US closes its borders to international trade, while Biden Team 2 claims that this relative price will rise by *less* in the short run than in the long run. Contributing to the dispute is whether, in the short run it is producers who are constrained in their responses relative to the long run, or rather consumers who are constrained in their responses relative to the long run, or both.

Using the Basic Trade Model with the US initially trading freely with the world and exporting good y in exchange for imports of good x, and assuming that US preferences are homothetic (i.e., along any ray from the origin, all US indifference curves have the same slope), please answer the following 3 questions to resolve the dispute within the Biden Administration:

- a) If in the short run producers cannot respond to relative price changes but consumers can respond fully, while in the long run both producers and consumers can respond fully to relative price changes, will the relative price of good x to good y in the US rise by more or by less in the short run as compared to the long run if the US closes its borders to trade (i.e., moves from free trade to autarky)?
- b) If in the short run producers can respond fully to relative price changes but consumers cannot substitute one good for another in their consumption choices (i.e., they cannot change the ratio in which they consume the two goods in the short run), while in the long run both producers and consumers can respond fully to relative price changes, will the relative price of good x to good y in the US rise by more or by less in the short run as compared to the long run if the US closes its borders to trade (i.e., moves from free trade to autarky)?
- c) If in the short run producers cannot respond to relative price changes and consumers cannot substitute one good for another in their consumption choices (i.e., they cannot change the ratio in which they consume the two goods in the short run), while in the long run both producers and consumers can respond fully to relative price changes, will the relative price of good x to good y in the US rise by more or by less in the short run as compared to the long run if the US closes its borders to trade (i.e., moves from free trade to autarky)?

Part II. Answer *either* question 1 or question 2 below.

1. (20 points) Demonstrate graphically using the Basic Trade Model (you can focus on a small country that is trading freely and takes world prices as given) that a country that finds itself trading in the direction contrary to its comparative advantage will lose from trade, by showing that:

- a) If the country has a comparative advantage in good y, and the government of the country is adamant that the country should nevertheless export good x and employs a production subsidy on good x sufficient to induce the country to export x, then the country will achieve a level of utility which is below its autarky utility level (i.e., it would lose from such trade); and
- b) If the country has a comparative advantage in good y, and the government of the country is adamant that the country should nevertheless export good x and employs a consumption tax on good x sufficient to induce the country to export x, then the country will achieve a level of utility which is below its autarky utility level (i.e., it would lose from such trade).

2. (20 points) Consider the Basic Trade Model with countries A and B trading freely and country A exporting good x in exchange for imports of good y from country B. Suppose that countries A and B have identical and homothetic preferences (i.e., the indifference curves for countries A and B are identical, and along any ray from the origin, all indifference curves have the same slope). Please answer the following two questions (note: you may appeal to your answer from part (a) to make answering part (b) easier).

- a) Show that if country B makes a transfer of purchasing power to country A, there is no “secondary burden or blessing” (i.e., the world relative price of good x to good y will not change as a result of the transfer, and the Ohlin case holds).
- b) Then show that if the transfer of purchasing power that country B makes to country A is in exchange for A providing B with some of the secrets to its superior technologies that have the effect of shifting out B’s PPF uniformly (i.e., radially – implying that B’s new PPF has the same slope along any ray from the origin as did its old PPF, but is just shifted out), then the world relative price of good x to good y will rise as a result of the transfer of purchasing power from B to A combined with the transfer of technology from A to B.