

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) Unless the UK secures approval of a last-minute deal or is granted an extension from the EU, on October 31 it will experience a “hard Brexit,” i.e., the UK and the EU will sever their free-trade relationship without any replacement agreement between them. To prepare his country for this possibility, the UK Prime Minister Boris Johnson wants to know whether the short run costs of Brexit for the UK will be bigger or smaller than the long run costs. Boris understands that a hard Brexit does not mean that the UK will revert to autarky, but he wants to consider this possibility as a worst-case scenario. His economists at the UK Department for International Trade are divided on the answer to this question, and Boris has hired you to evaluate their calculations and figure out who is right. To complete your assignment, please answer the following 3 questions:

- (i) One group of economists has taken the position that the short run costs of Brexit will be smaller than the long run costs. Their argument has two steps. In the first step they claim that the short run gains in moving *from autarky to free trade* are smaller than the long run gains. Specifically, they pose the following question to quantify the UK gains in moving from autarky to free trade: By how much would UK GNP have to rise at autarky prices to make the UK as happy as it is at free trade? And they claim (Claim 1) that the implied rise in UK GNP is smaller in the short run (when UK output is fixed at its autarky level) than in the long run (when UK output can respond fully to the change to free-trade prices). In the second step they then claim (Claim 2) that in light of the first claim, it stands to reason that the short run costs of moving in the opposite direction, *from free trade back to autarky*, will also be smaller than the long run costs. Using the Basic Trade Model, confirm graphically that **Claim 1** is correct.
- (ii) The second group of economists takes issue with Claim 2, and therefore argues that while Claim 1 is true, it is irrelevant for comparing the short run and long run costs of Brexit. The second group observes that the relevant question for Brexit is to run the changes in the opposite direction from the changes considered in Claim 1, and that when comparing short run and long run impacts the direction of the change is important. This group argues that when the question is posed in the relevant way, a movement *from free trade back to autarky*, the short run costs of Brexit are *larger* than the long run costs. Specifically, they pose the following question to quantify the UK losses in moving from free trade to autarky: How much would the UK be willing to pay at free trade prices not to be driven back to autarky? And they claim (Claim 3) that the implied willingness to pay is larger in the short run (when UK output is fixed at its free trade level) than in the long run (when UK output can respond fully to the change to autarky prices). Using the Basic Trade Model, confirm graphically that **Claim 3** is correct.
- (iii) Finally, based on the graphs you have drawn for (i) and (ii), explain which group of economists has provided the more convincing answer to Boris Johnson’s question?

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

1. (20 points) Using the Basic Trade Model, show algebraically that if a small country importing good x and originally trading freely at world prices imposes a (non-prohibitive) tariff on imports of good x , the country's consumption must satisfy balanced trade at world prices as long as the country satisfies its budget constraint and the revenue generated by the tariff is accounted for. Then show algebraically that if instead of imposing a tariff on imports of good x the country subsidizes the production of good x , the country's consumption must satisfy balanced trade at world prices as long as the country satisfies its budget constraint and the revenue requirement to fund the production subsidy is accounted for.

2. (20 points) Using the Basic Trade Model, show graphically that the magnitude of the implied import demand elasticity for a country in moving from free trade back to autarky is higher in the long run (when the country's output can respond fully to the change from free trade prices to autarky prices) than in the short run (when the country's output is fixed at its free trade level). Then redraw your graph and use it to illustrate that this implies that the import penetration ratio is more likely to be an upper bound on the country's long run losses in moving from free trade back to autarky than on the country's short run losses in moving from free trade back to autarky.