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Spring 2022/23

Economics 39S: First 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). Last week the Nobel Laureate economist and *New York Times* columnist Paul Krugman wrote an editorial entitled "How Immigrants are Saving the Economy." While Krugman went on to describe the benefits of the recent surge in immigration levels for the US economy, this is far from the first time that the positive impacts of immigration on the migrant-receiving country have been highlighted. On September 19, 2015, the *New York Times* ran a story with the headline "Europe's Aging Economies Stand to Gain From Influx of People." The article began with:

> The greatest influx of people into Europe in decades is not just a humanitarian emergency, but also a potential stroke of luck for many countries facing the economic threat of an aging population.
>
> A plunge in birth rates means there will be a dearth of European workers in coming years to support the growing number of retirees. So the arrival of thousands of young — and often well-educated — potential workers stands to boost the long-term economic prospects of the region.
>
> The key is how well they are integrated and how many jobs European countries can offer. Germany, among the most vocal in welcoming refugees, is also conveniently the country that stands to gain most quickly, as it has a strong labor market with lots of vacancies.

In 2015, Angela Merkel was the German Chancellor, and she has now been asked by *Der Spiegel* to provide a retrospective on her views at that time. To prepare for this retrospective, she has hired you to help her remember what she was thinking when she chose to treat refugees as a welcome supply of migrant labor during the refugee emergency of 2015. For this purpose, she wants you to use the two-good (x and y) Basic Trade Model of free trade between two countries, with one country representing Germany and the other country representing the Rest-Of-World (ROW), and with Germany exporting good y and importing good x (and with neither country "small" on world markets).

Chancellor Merkel is confident of her arguments for why the influx of migrant workers would itself be good for the German economy, so she doesn't need you to show her how the migration itself would impact German citizens (i.e., you can interpret your initial graphs for Germany and ROW as reflecting the situation after the migration from ROW to Germany has already occurred). But she was also well-aware that once in Germany, the migrants were likely to send a substantial fraction of their earnings in Germany back to their families in ROW, and she is less confident about how to think about these international transfers. Please help Chancellor Merkel answer each of the following questions related to these international transfers:

(a) A first question Chancellor Merkel has is whether these international transfers might interfere with Walras' Law. Using algebra, show Chancellor Merkel that Walras' Law does still hold in the presence of international transfers, so that if prices clear the x-market they will also clear the y-market as long as the transfers are accounted for in the budget constraints of each country.

(b) Chancellor Merkel recalls thinking that at first the new migrant workers in Germany would continue to spend their money exactly as they and their families did in ROW. And she wants to know: As long as this is

true in the short run, does she need to worry about the short run impact of these international transfers on the real incomes of existing (non-immigrant) German citizens?

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

1. (20 points) Using the Basic Trade Model, depict graphically the situation where a country is exporting good x and importing good y under conditions of free trade, drawing both the country's production possibilities frontier and the indifference curve it reaches under free trade. Label this indifference curve as U_f. Then answer the following two questions by adding to the graph you have just drawn:

(a) Add to your graph an autarky indifference curve for this country that is consistent with the indifference curve that the country reaches under free trade (and that you have labeled U_f), and label the country's autarky indifference curve as U_a. Then using these two indifference curves, depict on your graph the amount of additional income, measured in units of x, that this country would have to be paid at its autarky prices to be made as happy in autarky as it is under free trade. Label this amount EV.

(b) Now show on the same graph how, if the only data you actually observed for this country was its autarky prices, the free trade prices, and the country's export volume under free trade, you could place an upper bound on the amount EV that you labeled in part (a) as long as the country maintains balanced trade. Label this upper bound UB.

2. (20 points) Using the Basic Trade Model, depict graphically the situation where a country who is small on world markets is exporting good y and importing good x under conditions of free trade, drawing both the country's production possibilities frontier and the indifference curve it reaches under free trade. Label this indifference curve as U_f. Then answer the following two questions by adding to the graph you have just drawn:

(a) Show on this graph what happens to the country's production and consumption when it imposes a non-prohibitive tariff on imports of good x, assuming as we normally do in class that the tariff revenue collected by the government is redistributed back to the country's consumers. Label the indifference curve reached by the country under the tariff as U_t. Label as TR the amount of tariff revenue that the country collects with its tariff, measured in units of x. Then using this indifference curve and the indifference curve you have labeled U_f, depict on your graph the amount of income, measured in units of x, that this country would be willing to give up at the fixed world prices not to have the tariff imposed. Label this amount EV(a).

(b) Now suppose that, rather than redistributing the tariff revenue back to consumers, the government *squanders* the tariff revenue, so that the tariff revenue collected under the tariff is not redistributed back to consumers, is not used to purchase anything, and is instead simply wasted and therefore does not contribute anything to national welfare. On the same graph, label the indifference curve reached by the country when the tariff revenue is squandered as U_{ts}. Then using this indifference curve and the indifference curve you have labeled U_f, depict on your graph the amount of income, measured in units of x, that this country would be willing to give up at the fixed world prices not to have the tariff (with squandered tariff revenue) imposed. Label this amount EV(b).