

ECON 115: FALL 2009: TWENTIETH-CENTURY ECONOMIC HISTORY
Problem Set 2: Gains from Trade Circa 1900:

Suppose we have a world more-or-less as it stood in 1900, with 60 million workers in the North Atlantic “core,” and 240 million workers in the periphery. Workers in the core can produce 10,000 pounds of food or 10,000 pounds of modern manufactured goods per year. Workers in the periphery can produce 4000 pounds of food or 1000 pounds of manufactured goods or 2000 pounds of “tropical” goods—coffee, tea, etc.—per year. Food in the core costs 20 cents/pound. Food in the periphery costs 1 rupee/pound.

1. Suppose that there were no trade between core and periphery: (a) What is the equilibrium price of manufactured goods in the “core” in dollars per pound? (b) What is the equilibrium price of tropical goods in the “periphery” in rupees per pound? (c) What is the price of manufactured goods in the “periphery”? (d) What is the income of the average core worker? (e) What is the income of the average periphery worker?

2. Now consider “industrial trade”—tropical goods can be costlessly shipped to the core, manufactured goods can be costlessly shipped to the periphery, but staple foods cannot be shipped from core or periphery on a large enough scale to matter; and your average core worker spends 5% of his or her income on tropical goods: (a) What will be the dollar price in the core of tropical goods? (b) What will be the equilibrium dollar:rupee exchange rate? (c) How much does the average core worker spend on tropical goods? (d) How many pounds of tropical goods does the average core worker buy? (e) How many pounds of manufactured goods does the average core worker have to export in order to pay for the imports of tropical goods?

3. Now consider “preindustrial trade”—manufactured goods can be costlessly shipped to the periphery, staple foods cannot be shipped from core or periphery on a large enough scale to matter, but 90% of tropical goods shipped from the periphery spoil before they get to the core. And at the higher preindustrial-trade price, core workers spend only 1% of their income on tropical goods: (a) What will be the dollar price in the core of tropical goods? (b) How much does the average core worker spend on tropical goods? (c) How many pounds of tropical goods does the average core worker buy? (d) How many pounds of manufactured goods does the average core worker have to export in order to pay for the imports of tropical goods?

4. Now compare the pre-industrial to the industrial trade situation: (a) How is life different for the average core worker? (b) How is life different for the average periphery worker? (c) About how much do you think a transition from pre-industrial trade would be worth to the core worker, and why? (d) About how much do you think a transition from pre-industrial trade would be worth to the peripheral worker, and why?

5. Reflect: (a) In what ways is this finger exercise useful in thinking about the pre-WWI pattern of trade? (b) In what ways is it inadequate and misleading? (c) Why did it work out this way? Why is the coming of industrial trade such a bonanza for the core and not for the periphery?