

Think about the example of apples and computers again. Now we assume that for North, the numbers of workers, the productivity per worker in apples and computers are 200 workers, 180 apples per worker, and 18 computers per worker, respectively. For South, the three numbers are 600 workers, 120 apples per worker, and 2 computers per worker. For the preferences, we also assume that each worker spend half the budget on both goods. (Also: prices of apples and computers are 1 and p)

- (a) For these two goods, who has the absolute advantages, and who has the comparative advantages? What do you think about which country should produce what and why?
- (b) Analyze the case of Autarky for these two countries. Please list the wages, prices, consumption bundles, the percentages of labor working in each sector, and the total productions of both goods for each country in one table.
- (c) Now if we allow them to trade, please analyze the case of Free Trade for these two countries. Same as part (b), please list a table showing all information. Discuss the changes in welfare for both North and South workers.
- (d) Now instead of Free Trade, we allow them to do Free Migration, please analyze the case of Free Trade for these two countries. Same as part (b), please list a table showing all information.
- (e) Assume that South catches up and her productivity goes up to 12 computers per worker, predict what will happen to these two countries and why? What lesson does this case tell you?
- (f) Let's assume that originally these two countries are in the regime of Free Trade. Now suppose North people can charge an "entrance fee" to immigrants. Notice that this fee is charged on the South workers after the production but before the consumption decision (we might call this Ex Ante fee). Now consider moving from Free Trade to Free Migration. Find entrance fee (a certain amount of apples paid each period, after production occurs but before the consumption decision) that the North can charge so that workers in both the North and South are made better off.
- (g) Now if the fee is charged on the South workers after the consumption decision (we might call this Ex Post fee, namely after South workers spend their wages on both goods, the North people ask them to pay a fraction of both goods to the North workers), find the fee under this kind of settings. Comparing with part (f), what are the changes in welfare of North and South workers?