Migration

A simple model of international migration and its effects looks at supply and demand for labor in two countries. Without migration, let the supply of labor be determined by population, independently of the wage, in each country. Demand for labor does depend on the wage however, negatively, since a higher wage will reduce the quantity of labor demanded. With competitive markets, the height of the demand curve is the value of the marginal product of labor, which declines as more labor is employed given fixed quantities of other factors, such as capital. Without migration, then, two countries’ markets for unskilled labor might look as follows:

Because Mexico has a larger supply of unskilled labor, relative to demand, than the U.S., the wage in Mexico is lower than in the U.S. (The demand for labor in Mexico is smaller largely because, with less human and physical capital than the U.S., Mexican labor is not as productive as U.S. labor.)

This wage differential provides a strong incentive for labor to move from Mexico to the United States. Restrictions on immigration into the U.S. limit this movement, so we will consider the effects of just an arbitrary small amount of labor, $\Delta L$, moving from Mexico to the United States. This will reduce the supply of labor in Mexico by $-\Delta L$ and simultaneously increase supply of labor in the U.S. by the same amount. The effects are shown below:
As can be seen, the effect of this migration is to raise the wage in Mexico and lower that in the United States.

Who gains and who loses from this? Some are obvious: the Mexican workers who migrate gain from the higher wage they get in the U.S. So do Mexican workers who stay behind, since their wage also rises, although by a smaller amount. Meanwhile, workers in the U.S. lose, as their wage falls due to the increased supply.

How big are these gains and losses? And is anyone else effected? We can find out by using the same tools of consumer and producer surplus that we used to analyze trade in goods. They are still valid, even though the name may seem inappropriate here. That is, the areas to the left of the demand and supply curves between the old and new wage levels measure the welfare changes for demanders and suppliers, just as they did in goods markets. Here, however, the suppliers are just the workers themselves, while the demanders are their employers. The change in “consumer surplus” in this market reflects the change in well being of all other factors – physical capital, human capital, land – whose productivity is altered by changing amounts of unskilled labor that they have to work with.

The analysis is shown below:
Welfare effects of migration:

Mexico

Workers who migrate \( + (b+c) \)
Workers who don’t migrate \( +a \)
Other factors in Mexico \( -(a+b) \)

Mexico as a whole \( +c \)

U.S.

Workers \( -d \)
Other factors in U.S. \( +(d+e) \)

U.S. as a whole \( +e \)

World \( +(c+e) \)

Thus, as with trade in goods, there are winners and losers from migration, but the net gains are positive, both for each country and for the world as a whole.