Econ 301, chapter 9, exchange

Net and Gross Demands

trader enters the market with endowment \((\omega_1, \omega_2)\). He wants to go home with, i.e., he has a gross demand for \((x_1, x_2)\). He has a net demand or excess demand of \((x_1 - \omega_1, x_2 - \omega_2)\).

Budget constraint

value of what you enter with = value of what you leave with

\[ p_1 \omega_1 + p_2 \omega_2 = p_1 x_1 + p_2 x_2 \]

or

\[ p_1 (x_1 - \omega_1) + p_2 (x_2 - \omega_2) = 0 \]

\(\Rightarrow\) net buyer of one thing means net seller of the other

graphing the BC

The initial endowment point is A and the trader wants to move to B. This means giving up good 1 and buying good 2.

changes in prices and rotation of BC. just look through book and Fig 3.

Offer curves and Demand curves see the book section 9.5

skip p 167 to end on 172
Suppose a competitive market currently has the price at $P_1'$, so there is an excess demand. “The equilibrium price” (you’ll see why that is in quotes in a minute) is $P_1''$. The usual story you hear in Econ 103 is that the excess demand will drive the price up to $P''$. But there is a complication that the babies in Econ 103 can’t understand. Suppose you are one of the demanders at $P'$ and you are lucky enough to buy some of good 1 at the “low” price $P_1$. When the price starts to rise, you make a capital gain, which makes you feel richer. In fact you are richer, and one implication of this is that you may demand more of the good at $P_1''$ than you would have if you had not been lucky enough to make the capital gain from your early, cheap purchase. Watch how we can analyze that with our tools.

Suppose your initial endowment point is at $\omega$. If the price were $P_1'$, you would like to buy $x_1'$, or if the price were $P_1''$, you would like to buy $x_1''$. Now suppose the price opens at $P_1'$, and you actually buy enough good 1 to move your new endowment point to $\omega'$. If the price now goes to $P_1''$, your BC is further to the right than it would have been if you had not bought some good 1 prior to the price increase. That is, the green BC makes more possible than the blue one, and for a normal good, this increases demand. So, if the price all of a sudden shifted up to $P_1''$ from $P_1'$, it would not necessarily be an equilibrium any more. The trading at disequilibrium prices screwed things up. See the odd new demand curve marked $\sim D\sim$ in the top figure. This trader treats $x_1$ as a normal good and wants more of it after the capital gain.

This is one of the cool reasons we do U analysis.

Skip the Slutsky equation for now
Labor...this is in the book, but it is done differently. Read that section, but you can just learn the graphics my way.

The model:
Think of a little world with money, M, labor, L, and commodities, C. P is the price of C and w the price of L. So the budget constraint is:

\[ pC = M + wL, \]

and it graphs like this:

If C is a good and L is a bad, indifference curves will look like you see below, and the optimum labor supply (Ls) and commodity demand (Cd) will be as shown below.
Question: Can you prove that an increase in wage leads to an increase in $L_s$? Answer is no. Use the figure below to explore the issue. (Hint: what does an increase in $w$ do to the $BC$?)

The book says that higher pay for overtime increases $L_s$. Let’s look at this and see if and when this is true. Let’s assume that there are two wages: for work up to 40 hours the wage is $w_1$ and for overtime (40 hours) it is $w_0$. The $BC$ will now look like this:

Now we’ll take this one step at a time. First suppose that a trader’s optimum work week is exactly 40 hours and no overtime is paid. This is shown by the black lines in the figure below. Now if overtime is offered (red line), the trader will choose to work more than 40 hours. This is due to the convexity assumption on $U$ and to the fact that the lower $U$ curve is assumed to be tangent to the black $BC$. But do so many people work 40 hours per week because coincidently that is there optimum? See next page.
My pet theory on this topic is this: Part time wages are virtually always lower than full time wages (per hour). For example, you might think that if you worked full time, you would be a broker. But everyone who hires brokers demands that employees work full time. Other things being equal, you would rather work part time, but the best part time job you can find is as a substitute teacher, at a much lower wage. What do you do? Obviously that depends upon your preferences and the two wages. Here is one way it might look.

Your highest utility would be $U_2$ working 30 hours as a broker, but you can’t do that. If you are going to be a broker, you have to work 40 hours and utility would be $U_1$. If you had to be a substitute teacher, you would work 25 hours, but get only $U_0$. So you work full time, but you are not at a tangency between $U$ and BC. Observation: people might be better off with less stuff and less work if they had the freedom to pick their own hours. That might be a good thing with respect to resource use.

So what if that is the case when overtime is offered? Will you want to work more than 40 hours now? Maybe, maybe not. That depends upon the slope of $U_1$ vs. the slope of the red overtime BC.