Econ 110: Introduction to Economic Theory

3rd Class **1/26/11**

introduce assistants to class

go over answers to first practice problems

two last points re the PPF:
--can show economic growth as an outward shift of the PPF (contrast balanced and unbalanced shift) (note also that I didn't imply that we were always shifting outwards; as someone pointed out, dark ages can occur)
--a movement from the inside to the PPF is always efficient but need not be equitable; depends how distribution occurs after production takes place; also points inside may be equitable but not efficient (we'll define equity later)

On with additional baseline concepts:

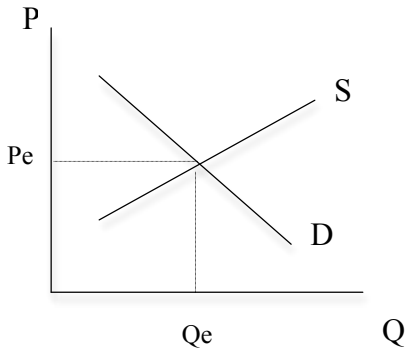
What is trade?
basic principles of trade:
--comparative advantage--we can't do everything, due to the ultimate constraint of time. Thus people who are good at everything still have to pick what to do. Life consists in large part of reducing our activity set. Thus we need to trade. Trade happens interpersonally, interregionally, internationally. It's all based on the same underlying principle.
--In addition to comparative advantage, transactions costs (including transportation costs) cannot be too high or trade will not occur.
--If trade (it is implied that no coercion is involved in trade) is observed to occur, then it must be advantageous to both parties. This doesn't mean that both parties don't complain. Absence of complaint is not a necessary condition for trade to be advantageous.
--Decisions as to whether or not to do anything, whether it is to produce, to consume, or to trade, should be made on the basis of marginal gains and losses, i.e., marginal benefits and marginal costs. For instance, if I have been standing in line at the supermarket, I should decide whether or not to continue standing in line not on the basis of how long I have been waiting, but based on how much longer I think I will have to wait. Yet one of the hardest things for humans to do is ignore sunk costs. Similarly, in deciding whether or not to spend another hour studying, I should think about how much more I can learn in that hour, not about how many hours I have already

studied. We'll be developing the marginal framework and then using it to explore consumer decisionmaking, producer decisionmaking, and the operation of markets.

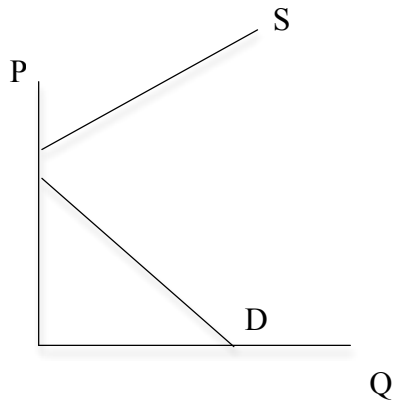
while trade can take place in individual negotiations and in nonmarket settings (e.g., the household, the family--discuss), much of it takes place in markets.

Markets consist of one or more sellers (supply), one or more buyers (demand), and some interaction between them.
--price and quantity are jointly determined in freely operating markets.
--price cannot be determined separately from quantity traded, or else shortages or surpluses arise (if price is set too low, or too high). If quantity is fixed, then either price rises or rationing system necessary.
--there is generally a unique solution at which quantity supplied equals quantity demanded

Illustrate basic version of a market in graph and equations
--demand function/curve
--supply function/curve
--solving for equilibrium price and quantity
--note inversion problem in standard economic graph—thanks to Alfred Marshall's influential late nineteenth century economics text



note many markets don't exist because the supply curve and demand curve don't intersect; illustrate case where supply is everywhere above demand:



consider market for oil (and related markets for heating oil and gasoline) as example of market:

past price-quantity path:
http://www.nytimes.com/interactive/2008/02/19/business/20080220_CENTURY_GRAPHIC.html?ref=oil-petroleum-and-gasoline

today's oil prices:
http://www.bloomberg.com/energy/

last fall's gas prices:
http://www.cnn.com/2010/TRAVEL/08/29/us.gas.prices/index.html?iref=allsearch

current gas prices:
http://www.kansascity.com/2011/01/23/2604039/survey-gas-prices-jump-nearly.html

current CT gas prices:
http://www.connecticutgasprices.com/

Professor Joyce Jacobsen

Economics 110-01
Spring Semester 2010-11

Answers to Practice Problems from 1/24/11

I. 1) $B_{max} = \sqrt{400} = 20$; $P_{max} = 2\sqrt{400} = 40$

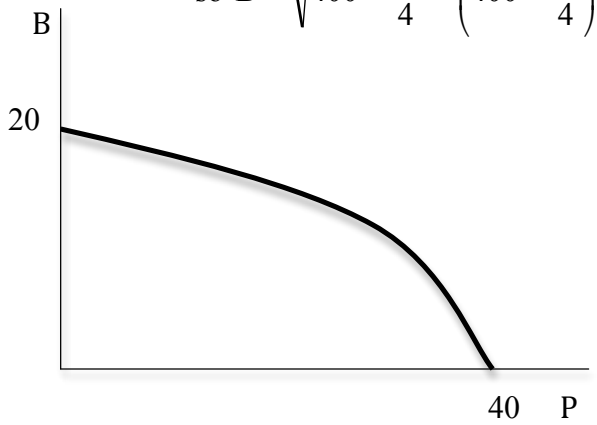
2) there are 3 equations and 4 unknowns; substitute until you get B as a function of P:

$$L_B + L_P = 400 \text{ so } L_B = 400 - L_P \text{ ; so } B = \sqrt{L_B} = \sqrt{400 - L_P}$$

and since $P = 2\sqrt{L_P}$, rearrange to solve for L_P : $L_P = \frac{P^2}{4}$

$$\text{so } B = \sqrt{400 - \frac{P^2}{4}} = \left(400 - \frac{P^2}{4}\right)^{\frac{1}{2}}$$

3)

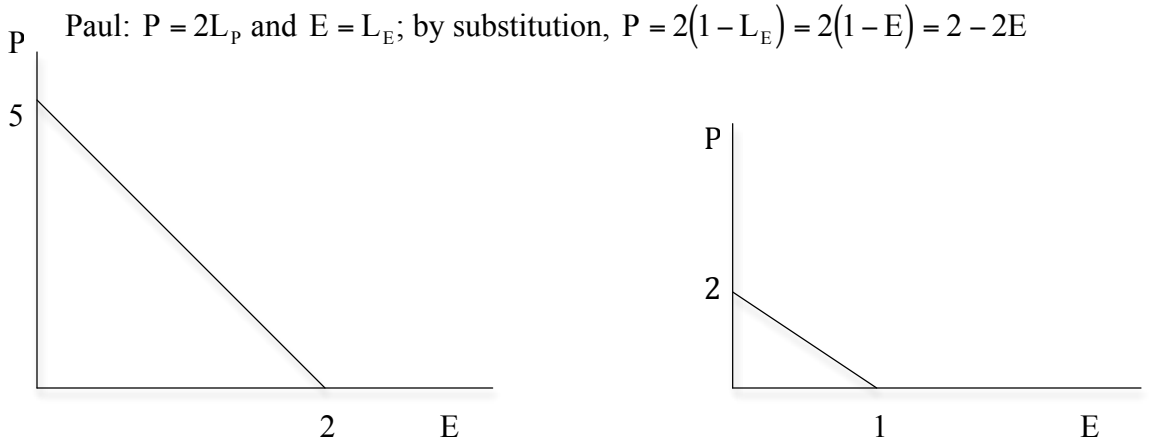


4) $\frac{dB}{dP} = \frac{1}{2}\left(400 - \frac{P^2}{4}\right)^{-\frac{1}{2}} \cdot \left(-\frac{2P}{4}\right) = -\frac{P}{4B}$

(note use of the chain rule, and then substituting B back into the equation)

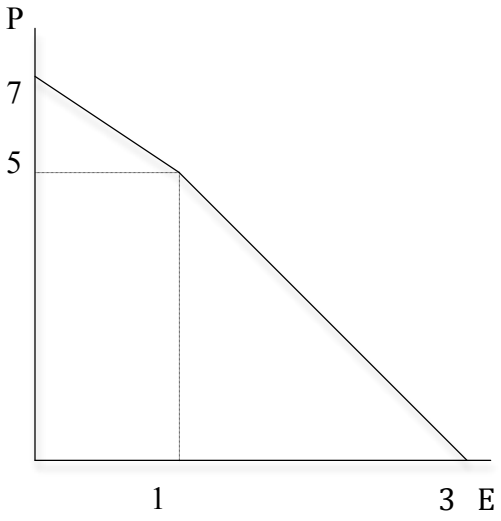
II. 1) Angie: $P = 5L_P$ and $E = 2L_E$; by substitution, $P = 5(1 - L_E) = 5\left(1 - \frac{E}{2}\right) = 5 - 2.5E$

Paul: $P = 2L_P$ and $E = L_E$; by substitution, $P = 2(1 - L_E) = 2(1 - E) = 2 - 2E$



2) Angie: $\frac{dP}{dE} = -2.5$; Paul: $\frac{dP}{dE} = -2$

3)



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Practice Problems 1/26/11

I. A market can be characterized by the following three equations:

Demand: $Q_D = 20 - 2P$ (actually, $Q_D = \max\{20 - 2P, 0\}$)

Supply: $Q_S = 4P - 16$ (actually, $Q_S = \max\{4P - 16, 0\}$)

Equilibrium: $Q_D = Q_S = Q$

1) At what price (P) does $Q_D = 0$? If P = 0, what is Q_D?

2) What is the minimum that P must exceed for Q_S to be greater than 0?

3) Sketch the market diagram.

4) Solve for the equilibrium values of P and Q. Mark this point (e) on your diagram.

II. Suppose the demand curve shifts:

$$Q_D' = 33 - 3P$$

1) Add the new demand curve to your market diagram.

2) Solve for the new equilibrium values P' and Q' and mark this point (e') on your diagram.