

do practice problem answers

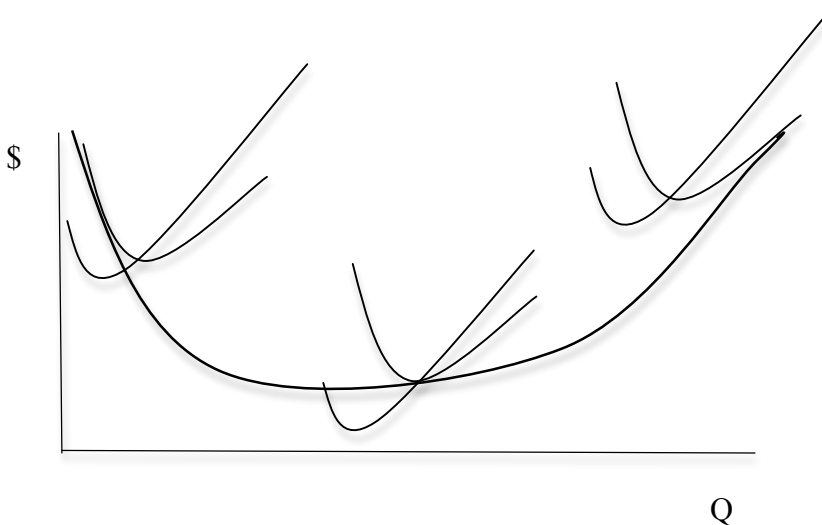
Continue discussing markets, in particular the case of a perfectly competitive market

several things must be true in LR equilibrium in a perfectly competitive market:

- we would see no firms or consumers exiting or entering the market (hence it is an equilibrium)
- all firms have the same cost conditions (i.e., the same marginal and average costs)
- all firms are making exactly zero profit (i.e., exactly but no more than covering their costs-- note that costs include all sorts of opportunity costs. For instance owner-operators have to decide that operating their firm is just as good as their next-best option.)

redefine the relevant planning horizons as the medium-run case when at least some costs are fixed vs. the long-run case when all costs are variable. But at that point the firm can also vary plant size

Thus the long run is the case where the firm can pick one out of a set of medium-run cases [draw the envelope curve and discuss economies and diseconomies of scale]



and thus pick the plant size that is appropriate to its scale of production

and even farther out (the longer run), the envelope curve shifts as well

note we will soon (starting on Mon.) see cases where there is an equilibrium in the sense that no firm exits or enters the market, but the firm or firms in the market will be making positive profits. Thus this must be a case where there is some sort of barrier to entry into the market so that potential entrants cannot enter.

Now I will make the argument that intervention in a perfectly competitive market will have implications for economic efficiency and distribution. First we'll need to define efficiency and distribution, and show how losses in efficiency as well as redistributive effects of interventions can be measured.

define

total surplus: area under the demand curve but over the supply curve

consumer surplus—willingness to pay over what the buyers actually have to pay, so area under the demand curve over the price line

producer surplus—amount earned over what the producers would have been willing to take to supply that amount of output to the market, so area over the supply curve (the marginal cost curve) up to the price line

policies can cause both transfers of surplus between parties and deadweight loss

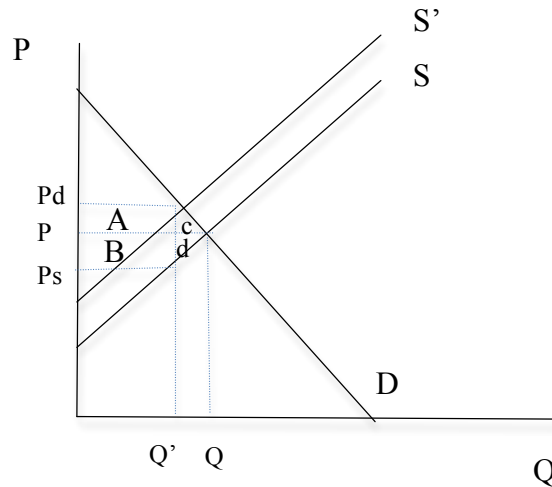
deadweight loss—surplus that is not transferred, but simply lost. Represents resources that cannot be transferred out of this market to other markets, i.e. the amount over opportunity costs

if a policy creates deadweight loss (DWL), then it is (by definition) inefficient

transfers are not net losses, but are distributional

consider the effects of various policies that we have already studied in terms of their effects on consumer and producer surplus (changes in them, transfers, deadweight loss)

if there is a tax then the change (loss) in CS is $A+c$, the change (loss) in PS is $B+d$, $A+B$ is transferred to the government in the form of tax revenue, and $c+d$ is deadweight loss



what about a quota with freely-adjusting prices?

causes DWL from both CS and PS, and a transfer from consumers to producers of surplus

what about a quota with rationing? [note rationing is an alternative to a freely operating market]

causes DWL and a transfer from producers to consumers of surplus

what about a price ceiling?

causes DWL and a transfer from producers to consumers of surplus

what about a price floor?

causes DWL and a transfer from consumers to producers of surplus

so note these are all inefficient but have different distributional implications, including the possibility of net gains for one side of the market (though individuals will still lose out)

talk through the case of minimum wages

note an exception to the inefficiency finding: no DWL if one side of the market is inelastic
e.g. show the case of inelastic demand and putting on a tax

so if there is no change in quantity traded in the market, there is no inefficiency, just transfers of surplus

can we ever put on a policy that hurts no one?

Pareto criterion: a change is pareto-optimal if no one is hurt and at least one person is made better off

none of these market interventions satisfy that criterion!

Can you think of any policy that does satisfy that criterion?

I'll give an example of one next class.

so note that in general, any move away from the perfect competition equilibrium appears to violate the Pareto criterion as well as being inefficient
and thus we argue that the perfect competition equilibrium is both efficient and equitable

Answers to Practice Problems from 2/16/11

I. $Q_D = 350 - 50P$

II. 1) $q = .5P + 1$

2) $Q_S = 25P + 50$

III. 1) $P = 4, Q = 150$

2) $\Pi = 5$; entry

Practice Problems 2/18/11

I. Sketch a graph illustrating the situation. Figure out the supply and demand price(s) and quantity (ies).

1) Demand: $Q_D = 1000 - 10P_D^2$; Supply: $Q_S = 2P_S^2 - 200$; a minimum price is set of $P = 20$.

2) $Q_D = 200 - 4P_D$; $Q_S = 4P_S - 40$; a minimum price is set of $P = 20$.

3) $Q_D = 200 - 4P_D$; $Q_S = 4P_S - 40$; a subsidy is set of $s = 4$

II. $Q_D = 200 - 4P_D$; $Q_S = 4P_S - 40$; a tax is set of $t = 4$

1) Sketch a graph illustrating the situation before and after the tax is imposed.

Mark on the graph, and calculate:

2) the changes in consumer and producer surplus caused by the tax

3) the tax revenue

4) the deadweight loss