

Other ways to use ΔCS and ΔPS to measure benefits and costs:

Natural Monopoly

New Subway project (see the book)

Benefits: can you just measure the revenues from ticket sales? You shouldn't, because you don't want pricing to occur at the monopolist's level; you need to find demand for subway rides.

Problem: You don't have any idea what demand would be because you don't have a subway yet! What do you do?

Use a similar market (the book uses bus service as a rough proxy for subway rides).

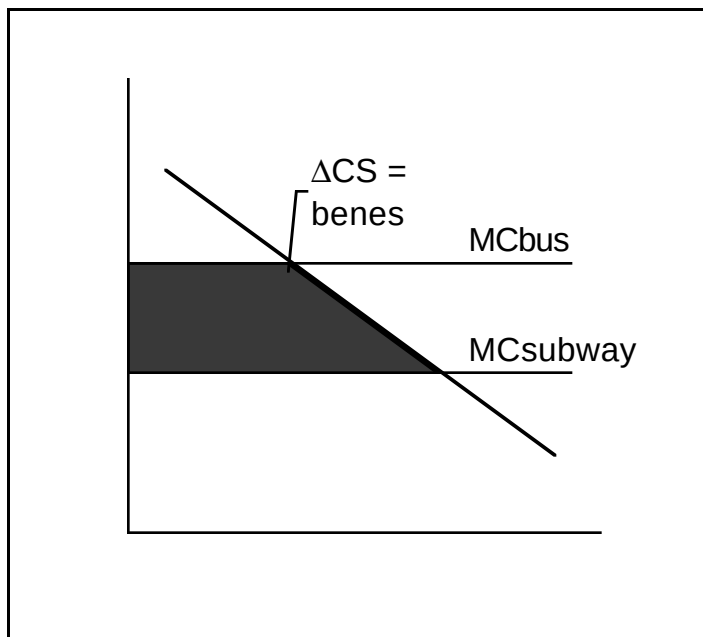
Everyone should review the subway example in Gramlich.

Differences between subways and buses:

Claustrophobics might not ride subways, implying lower than estimated CS.

Subways may be faster/more convenient than buses, implying higher than estimated CS.

Measuring benefits



You can't just measure the whole CS triangle for subways because we didn't start from no public transportation; we started from bus service. We need to add the marginal cost of bus tickets to the graph and measure the area of CS between the two MCs to get the change in consumer surplus.

Measuring costs

Can we just use the dollar value of the subway construction? NO.

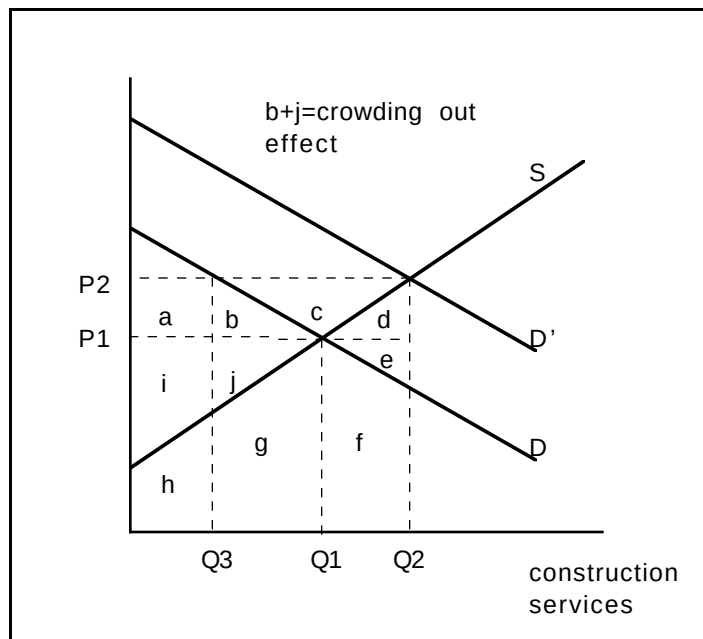
There are cumulative benefits over time (wait until chp. 6 for this)

We're displacing bus service; that will have costly effects (wait for chp. 5 for this)

There may be external costs

The subway will be supplied to the city with increasing costs. Adding government demand for subways bids up the price by shifting out the demand curve.

How does this all sort out?



Effects on the supply side:
 other demanders lose $-(a+b)$
 suppliers gain $(a+b+c)$
 government loses $-(b+c+d+e+f+g+j)$

net result:
 $-(b+d+e+f+g+j) = \text{net cost to society}$

The price that we anticipate government facing on this project is P1, not P2, so the initial estimate of costs we'll make is an underestimate.

Note that government spending crowds out private spending in the same market, by area $(b+j)$.

$Q2-Q1$ is the Q that government intended to purchase; $Q1-Q3$ is the extra Q that government ends up purchasing in order to make sure the market reaches $Q2$ (it has to compensate for the crowding out caused by the price increase).

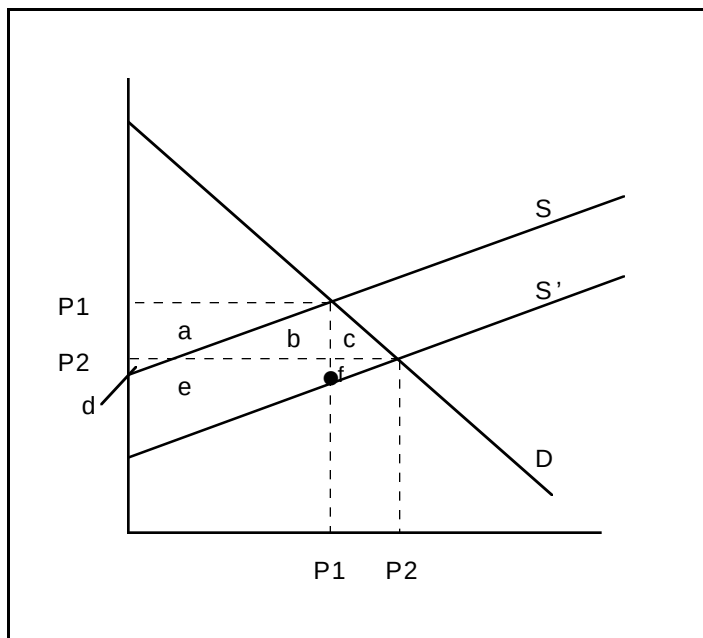
Question: is it possible that a subway that would not be built by the private sector should be built by government because

it's a benefit-cost winner? Is it possible that a subway that would be built by the private sector be a benefit-cost loser?

Public goods

Information about utility can be very hard to derive here when the service is being provided to consumers. Sometimes, however, it has producer-side effects.

Suppose a public good is provided that lowers costs in an industry (example: interstate highways and the trucking industry, ports and the shipping industry).



We don't get a drop in price equal to the fall in cost because as Q increases, costs (and therefore price) increases. That means we can't just multiply Q_2 times the cost drop; that overstates savings (it would place us at point ●).

Benefits:

Demander's gain $a+b+c$

Supplier's gain $(f+e)-a$

Society gains $b+c+e+f$.

Q: under what circumstances would suppliers LOSE in this scenario?