Microeconomics for Public Policy I
Fall 2025

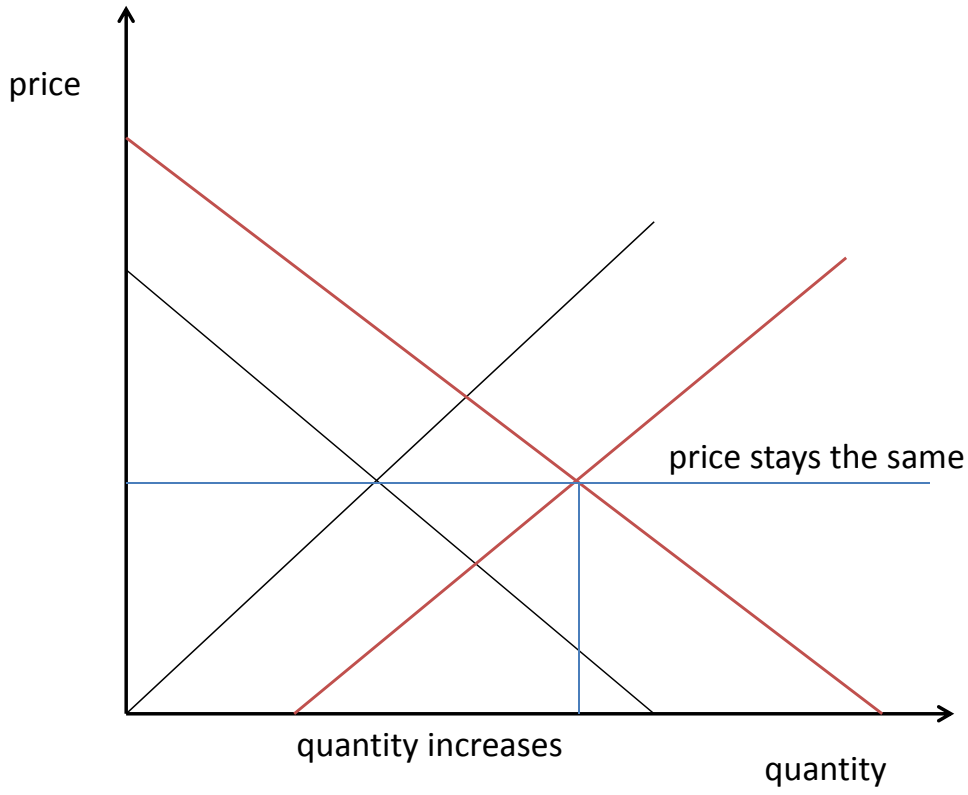
Problem Set 2

On what and how to submit On what and how to submit

- For this and all future problem sets, questions are from the "Problems" section of the questions at the end of the chapter.
- Due before Lecture 3.
- Name the file "ps02_[lastname].pdf". For example, my file would be "ps02_brooks.pdf".
- Turn in via the google survey in the Piazza post for Problem Set 2.
- Make sure your name is at the top of the submission.
- You do not need to type your submission. Any **legible** submission in pdf format is ok. For example, you can write the problem set with hand-drawn graphs, take a picture, make a pdf, and submit the pdf.

1. GLS Chapter 2, Question 8

Both supply and demand must shift outward. Old curves are in black, and new curves are in red:



2. Market Equilibrium

Suppose that the supply of Epi-pens is represented by $Q_S = 2P$, and that the demand for Epi-pens is represented by $Q_D = \frac{100}{3} - \frac{4}{3}P$.

(a) What is the current equilibrium price and quantity?

Set $Q_S = Q_D$:

$$\begin{aligned} Q_S &= Q_D \\ 2P &= \frac{100}{3} - \frac{4}{3}P \\ 2P + \frac{4}{3}P &= \frac{100}{3} \\ 6P + 4P &= 100 \\ 10P &= 100 \\ P &= 10 \end{aligned}$$

Given this price, plug in to either the supply or demand curve: $Q_S = 2P = 2(10) = 20$.

Or, $Q_D = \frac{100}{3} - \frac{4}{3}P = \frac{100}{3} - \frac{4}{3}(10) = \frac{100}{3} - \frac{40}{3} = \frac{60}{3} = 20$.

Thus, the equilibrium price is 10 and the equilibrium quantity is 20.

(b) Suppose that a generic producer enters the market and produces an additional 20 Epi-pens. What is the new supply curve (assuming that the generic and the brand name are perfect substitutes)?

$Q_{S,new} = Q_{s,old} + 20 = 2P + 20$

(c) Without doing any algebra, what do you anticipate should happen to price and quantity after the introduction of the generic alternative? Draw a diagram to illustrate what is going on.

We expect the equilibrium price to fall and the equilibrium quantity supplied to increase.

(d) What are the new equilibrium price and quantity?

Set $Q_{S,new} = Q_D$:

$$\begin{aligned} Q_S &= Q_D \\ 2P + 20 &= \frac{100}{3} - \frac{4}{3}P \\ 2P + 20 + \frac{4}{3}P &= \frac{100}{3} \\ 6P + 4P + 60 &= 100 \\ 10P &= 40 \\ P &= 4 \end{aligned}$$

Given this price, plug in to either the supply or demand curve: $Q_{S,new} = 2P+20 = 2(4)+20 = 8$.

Or, $Q_D = \frac{100}{3} - \frac{4}{3}P = \frac{100}{3} - \frac{4}{3}(4) = \frac{100}{3} - \frac{16}{3} = \frac{84}{3} = 28$.

Thus, the equilibrium price is 4 and the equilibrium quantity is 28.

3. Find one peer-reviewed (this means published in a reputable academic journal) estimate of either the price elasticity of demand or the price elasticity of supply for the good of your choice. I encourage you to use EconLit, listed as the first database on this page. This will limit your search to academic journals. You must be logged in to GW's virtual private network to use Econlit. If you don't already have software to use GW's vpn, see here. Cite the source for your estimate, and interpret it. For example, if the estimate is 0.45, should tell us what the estimate is for and say something like "this means that a [blah blah] increase in price causes a [blah blah] change in supply," where [blah blah] is a specific number.

Here we require one citation, and an interpretation that makes sense of the estimates.