

PPA 730-10: Fundamentals of Policy Analysis

The market model

I. Rent control in Cambridge, Massachusetts

Download the article "The Morning After" from the *The Economist*.

1. Using the figures about available rental housing in Cambridge and the price (rent), draw a simple supply and demand diagram for apartments. Assume that the supply of apartments is normal (upwardly-sloping). Mark the axes, indicate the old (rent-controlled) price, the old number of apartments on the market, and the new (free market) price.
2. Do you predict that under rent control there was a shortage or surplus of apartments? Why? Indicate this on your graph.

A statistician has estimated the equations for the supply and demand for apartments in Cambridge:

$$D: P=5085-0.1Q^d$$

$$S: P=344+0.01Q^s$$

3. What is the slope and intercept of these equations? What do these numbers mean?
4. What is the quantity supplied at the controlled price? What is the quantity demanded? How large was the surplus or shortage of apartments?
5. In the free market, what is the new quantity demanded? Quantity supplied?
6. Imagine that the government of Cambridge had set the maximum rent (under rent control) at \$800. What affect would this have had on the rental market? Why?
7. The article reports that when rent control ended, investment in housing and repairs went up. Does microeconomic theory predict that this would probably happen? Why or why not? (1 sentence)
8. Under the rent control policy, say if members of the following groups are winners, losers, neither, or possibly even both. Explain why. State any assumptions you make. (Maximum length: 2 paragraphs, typed.)
 - Renters
 - Landlords
 - Politicians
 - Taxpayers

II. Demand, supply, and elasticity shifters

Model the effects of each phenomenon on the automobile industry.

1. Consumer incomes increase.
2. Many more rail lines are installed so commuters aren't as reliant on their cars.
3. Train fares fall.
4. The quality of train travel improves, making it a better substitute for driving.
5. Train travel becomes more fashionable.
6. The president says we can expect an increase in gas prices soon.
7. An unusual number of people turn 16 and get their drivers' licenses.
8. The price of cars rises.
9. Cars, more expensive, become a more important part of consumers' budgets.
10. The price of steel rises dramatically. Just-in-time production methods are adopted and make car manufacturing more efficient.

11. Changes in production methods make it easier for manufacturers to adjust to changes in steel prices.
12. Chrysler finally goes out of business.
13. Auto manufacturers expect a major oil shortage soon.

After you've finished, take these effects in different pairs. Graph their combined effects and speculate on the new price/quantity equilibria.

III. Elasticity/tax incidence

The state is going to implement a new tax targeted specifically at a certain sector of the economy. Three possibilities have been suggested:

- a. An industry in which demand is downwardly-sloping, but supply is perfectly inelastic.
 - b. An industry in which supply is upwardly-sloping, but demand is perfectly elastic.
 - c. An industry in which supply is upwardly-sloping, but demand is perfectly inelastic.
1. You are an advisor to the legislature. Suggest industries that fit each of the three descriptions.
 2. Draw the supply and demand curves for each sector.

The legislature, worried about a voter backlash, has decided that the new tax must be paid by businesses. Thus, the tax must be imposed in such a way that it does not affect buyers, only sellers.

3. Which of the sectors should be taxed? Why? (Your answer may be none, one, two, or all three sectors.) Show your reasoning with graphs, and explain in words.

IV. Hospital beds in Syracuse

Your consulting firm is working for the hospital industry in Syracuse, which is concerned about capacity issues, pricing, and government regulation. They have a number of tough economic issues they need you to work through with them.

A recent economic study estimated the supply and demand equations Syracuse hospitals face are characterized by:

$$D: Q^d = 1,000 - 10P$$

$$S: Q^s = 100 + 15P$$

Q refers to the number of hospital beds, and P is the basic price per bed, per day.

1. Explain to the client (in one sentence) what the D-intercept means.
2. Explain to the client (in one sentence) what the S-intercept means.
3. Explain to the client (in one sentence) what the D-slope means.
4. Explain to the client (in one sentence) what the S-slope means.
5. What is the price elasticity of demand, calculated when the price per bed increases from \$40 to \$60?
6. The hospitals are losing money. Do you recommend that they raise prices to boost their revenues (not considering any other issues for the moment)? Why or why not?
7. The State Assembly is considering legislation that will limit the price per bed to \$25 per day. Will there be a shortage or surplus of beds?

8. Calculate the size of this shortage or surplus.
9. Without any regulation, what is the market-clearing price per bed? How many beds are filled?
10. What would happen if the government set the maximum price to \$45?

V. Essays

1. You are having a policy discussion with a bright friend, a lawyer with no training in economics. She observes that there seem to be ever-greater disparities between the incomes of people with high-wage jobs and people with low-wage jobs.

You say: "That's a problem with no easy solution."

Your friend: "No, the answer is simple. Make companies pay low-wage workers more. The minimum wage should be raised. By a lot."

You: "It isn't that easy. Raising the minimum wage can have undesirable, unintended consequences."

She is becoming impatient with your view. Explain to her what you mean. Do not give any opinions about whether the minimum wage is, on balance, a *good* or *bad* thing; just explain the most important insights on the issue gained from microeconomics. Don't forget to mention the likely winners and losers from a minimum wage increase. But again, **no jargon**, she won't follow you. **English only.**

2. You are having a policy discussion with a bright friend, a lawyer with no training in economics. You are talking about taxing tobacco to compensate states for their Medicaid costs in smoking-related illnesses among the poor. Your friend, who believes that tobacco companies are more to blame than smokers themselves for this cost to society, says that a tax should be levied on these companies; in this way, the tax pain will be felt by firms but not consumers. You respond that in reality, consumers of tobacco will be the ones who will probably pay much more than the firms. Your friend, surprised by your view, says this makes no sense. Explain to her why this so, in terms that she will understand. This means **no S & D curves** and **no use of the word "elasticity."**