

Pindyck microeconomics study guide assignment

[Economics](#), [Microeconomics](#)



Chapter 2 departs from the standard treatment of supply and demand basics found in most other intermediate microeconomics textbooks by discussing many real-world markets (copper, office space in New York City, wheat, gasoline, natural gas, coffee and others) and teaching students how to analyze these markets with the tools of supply and demand. The real-world applications are intended to show students the relevance of supply and demand analysis, and you may find it helpful to refer to these examples during class.

One of the most common problems students have in supply/demand analysis is confusion between a movement along a supply or demand curve and a shift in the curve. You should stress the ceteris paribus assumption, and explain that all variables except price are held constant along a supply or demand curve. So movements along the demand curve occur only with changes in price. When one of the omitted factors changes, the entire supply or demand curve shifts. You might find it useful to make up a simple linear demand function with quantity demanded on the left and the good's price, a competing good's price and income on the right.

This gives you a chance to discuss substitutes and complements and also normal and inferior goods. Plug in values for the competing good's price and income and plot the demand curve. Then change, say, the other good's price and plot the demand curve again to show that it shifts. This demonstration helps students understand that the other variables are actually in the demand function and are merely lumped into the intercept term when we draw a demand curve. The same, of course, applies to supply curves as well.

It is important to make the distinction between quantity demanded as a function of price, $Q = -1 D(P)$, and the inverse demand function, $P = D^{-1}(Q)$, where price is a function of the quantity demanded. Since we plot price on the vertical axis, the inverse demand function is very useful. You can demonstrate this if you use an example as suggested above and plot the resulting demand curves. And, of rouser, there are “regular” and inverse supply curves as well. Students also can have difficulties understanding how a market adjusts to a new equilibrium.

They often think that the supply and/or demand shift as part of the equilibrium process. For example, suppose demand increases. Students typically recognize that price must increase, but some go on to say that supply will also have to increase to satisfy the increased level of demand. This may be a case of confusing an increase in quantity supplied with an increase in supply, but have seen many students draw a shift in supply, so I try to get this cleared up as soon as possible. The concept of elasticity, introduced in Section 2, is another source of problems. It is important to stress the fact that any elasticity is the ratio of two percentages. So, for example, if a firm’s product has a price elasticity of demand of -2, the firm can determine that a 5% increase in price will result in a 10% drop in sales. Use lots of concrete examples to convince students that firms and governments can make important use of elasticity information. A common source of confusion is the negative value for the price elasticity of demand. We often talk about it as if it were a positive number.

The book is careful in offering to the “ magnitude” of the price elasticity, by which it means the absolute value of the price elasticity, but students may not pick this up on their own. I warn students that I will speak of price elasticity as if they were positive numbers and will say that a good whose elasticity is -2 is more elastic (Or greater) than one whose elasticity is -1, even though the mathematically inclined may cringe. Section 2. 6 brings a lot of this material together because elasticity are used to derive demand and supply curves, market equilibrium are computed, curves are shifted, and new equilibrium are determined.

This shows students how we can estimate the quantitative (notes the qualitative) effects of, say, a disruption in oil supply as in Example 2. 9. 6

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Unfortunately, this section takes some time to cover, especially if your students’ algebra is rusty. You’ll have to decide whether the benefits

outmost/sigh the costs. Price controls are introduced in Section 2. 7.

Students usually don’t realize the full effects of price controls. They think only of the initial effect on prices without realizing that shortages or surpluses are created, so this is an important topic.

However, the coverage here is quite brief. Chapter 9 examines the effects of price controls and other forms of government intervention in much greater detail, so you may want to defer this topic until then. QUESTIONS FOR REVIEW 1 . Suppose that unusually hot weather causes the demand curve for ice cream to shift to the right. Why will the price of ice cream rise to a new

market-clearing level? Suppose the supply of ice cream is completely inelastic in the short run, so the supply curve is vertical as shown below.

The initial equilibrium is at price P_I . The unusually hot weather causes the demand for ice cream to shift from ODL to DO , creating short-run excess demand (i.e., a temporary shortage) at the current price. Consumers will bid against each other for the ice cream, putting upward pressure on the price, and ice cream sellers will react by raising price. The price of ice cream will rise until the quantity demanded and the quantity supplied are equal, which occurs at price P_A . Price vs Quantity of Ice Cream 2.

Use supply and demand curves to illustrate how each of the following events would affect the price of butter and the quantity of butter bought and sold:

- An increase in the price of margarine. Butter and margarine are substitute goods for most people. Therefore, an increase in the price of margarine will cause people to increase their consumption of butter, thereby shifting the demand curve for butter out from ODL to DO in Figure 2. 2. A. This shift in demand causes the equilibrium price of butter to rise from P_I to P_A and the equilibrium quantity to increase from IQ to SQ . Copyright © 2009 Pearson Education, Inc. Publishing as Prentice Hall. 02 IQ Quantity of Butter Figure 2. 2. A
- An increase in the price of milk. Milk is the main ingredient in butter. An increase in the price of milk increases the cost of producing butter, which reduces the supply of butter. The supply curve for butter shifts from SSL to SO in Figure 2. 2. B, resulting in a higher equilibrium price, P_A and a lower equilibrium quantity, SQ , for butter. Price vs Quantity of Butter Figure 2. B Note: Butter is in fact

made from the fat that is skimmed from milk; thus butter and milk are joint products, and this complicates things.

If you take account of this relationship, your answer might change, but it depends on why the price of milk increased. If the increase were caused by an increase in the demand for milk, the equilibrium quantity of milk supplied would increase. With more milk being produced, there would be more milk fat available to make butter, and the price of milk fat would fall. ⁸ This would shift the supply curve for butter to the right, resulting in a drop in the price of butter and an increase in the quantity of butter supplied. C. A decrease in average income levels.

Assuming that butter is a normal good, a decrease in average income will cause the demand curve for butter to decrease (i. e. , shift from ODL to DO). This will result in a decline in the equilibrium price from P_I to P_A , and a decline in the equilibrium quantity from IQ to SQ . See Figure 2. 2. C. ODL
Figure 2. 2. C 3. If a 3-percent increase in the price of corn flakes causes a 6-percent decline in the quantity demanded, what is the elasticity of demand? The elasticity of demand is the percentage change in the quantity demanded divided by the percentage change in the price.

The elasticity of demand for corn flakes is therefore $\% \Delta S = -\frac{6}{3} = -2$.

Explain the difference between a shift in the supply curve and a movement along the supply curve. A movement along the supply curve occurs when the price of the good changes. A shift of the supply curve is caused by a change in something other than the good's price that results in a change in the

quantity supplied at the current price. Some examples are a change in the price of an input, a change in technology that reduces the cost of production and an increase in the number of firms supplying the product. . Explain why for many goods, the long-run price elasticity of supply is larger than the short-run elasticity. The price elasticity of supply is the percentage change in the quantity supplied divided by the percentage change in price. In the short run, an increase in price induces firms to produce more by using their facilities more hours per week, paying workers to work overtime and hiring new workers. Nevertheless, there is a limit to how much firms can produce because they face capacity constraints in the short run.

In the long run, however, firms can expand capacity by building new plants and hiring new permanent workers. Also, new firms can enter the market and add their output to total supply. Therefore, the price elasticity of supply is larger in the long run than in the short run. 9 6. Why do long-run elasticity of demand differ from short-run elasticity? Consider two goods: paper towels and televisions. Which is a durable good? Would you expect the price elasticity of demand for paper towels to be larger in the short run or in the long run? Why? What about the price elasticity of demand for televisions?

Long-run and short-run elasticity differ based on how rapidly consumers respond to price changes and how many substitutes are available. If the price of paper towels, a non-durable good, were to increase, consumers might react only minimally in the short run- because it takes time for people to change their consumption habits. In the long run, however, consumers might learn to use other products such as sponges or kitchen towels instead

of paper towels. In this case, then, the price elasticity would be larger in the long run than in the short run.

In contrast, the quantity demanded of durable goods, such as televisions, might change dramatically in the short run following a price change. For example, the initial result of a price increase for televisions would cause consumers to delay purchases because they could keep using their current TVs longer. Eventually consumers would replace their televisions as they wore out or became obsolete. Therefore, we expect the demand for durables to be more elastic in the short run than in the long run.

7. Are the following statements true or false? Explain your answers.

A. The elasticity of demand is the same as the slope of the demand curve. False. Elasticity of demand is the percentage change in quantity demanded divided by the percentage change in the price of the product. In contrast, the slope of the demand curve is the change in quantity demanded (in units) divided by the change in price (typically in dollars). The difference is that elasticity uses percentage changes while the slope is based on changes in the number of units and number of dollars.

B. The cross-price elasticity will always be positive. False.

The cross price elasticity measures the percentage change in the quantity demanded of one good due to a one percent change in the price of another good. This elasticity will be positive for substitutes (an increase in the price of hot dogs is likely to cause an increase in the quantity demanded of hamburgers) and negative for complements (an increase in the price of hot dogs is likely to cause a decrease in the quantity demanded of hot dog buns).

C. The supply of apartments is more inelastic in the short run than the

long run. True. In the short run it is difficult to change the supply of apartments in response to a change in price.

Increasing the supply requires constructing new apartment buildings, which can take a year or more. Therefore, the elasticity of supply is more inelastic in the short run than in the long run, or said another way, the elasticity of supply is less elastic in the short run than in the long run. 8. Suppose the government regulates the prices of beef and chicken and sets them below their market-clearing levels. Explain why shortages of these goods will develop and what factors will determine the sizes of the shortages. What will happen to the price of pork? Explain briefly.

If the price of a commodity is set below its market-clearing level, the quantity that firms are willing to supply is less than the quantity that consumers wish to purchase. The extent of the resulting shortage depends on the elasticity of demand and supply as well as the amount by which the regulated price is set below the market-clearing price. For instance, if both supply and demand are elastic, the shortage is larger than if both are inelastic, and if the regulated price is substantially below the market-clearing price, the shortage is larger than if the regulated price is only slightly below the market-clearing price. © Copyright © 2009 Pearson Education, Inc. Publishing as Prentice Hall. Factors such as the willingness of consumers to eat less meat and the ability of farmers to reduce the size of their herds/flocks will determine the relevant elasticity. Customers whose demands for beef and chicken are not met because of the shortages will want to purchase substitutes like pork. This increases the demand for pork (I.

E. , shifts demand to the right), which results in a higher price for pork. 9.

The city council of a small college town decides to regulate rents in order to reduce student living expenses.

Suppose the average annual market-clearing rent for a Doberman apartment had been \$700 per month, and rents were expected to increase to \$900 within a year. The city council limits rents to their current \$700-per-month level. A. Draw a supply and demand graph to illustrate what will happen to the rental price of an apartment after the imposition of rent controls. Initially demand is ODL and supply is S, so the equilibrium rent is \$700 and IQ apartments are rented. Without regulation, demand was expected to increase to DO, which would have raised rent to \$900 and resulted in SQ apartment rentals.