

Chapter 2

Review of the Economist's Arsenal

■ Outline

Introduction

Learning Objectives

2.1 The Supply and Demand Model

Demand, Supply, and Equilibrium

Supply and Demand Curves and the Price of Baseball Cards

Factors That Affect the Location of the Demand Curve

Factors That Affect the Location of the Supply Curve

Elasticity of Supply

Elasticity of Demand

Explaining the Difference in Card Prices

2.2 Producing Output and the Production Function

A note on the Definition of Output

The Production Function

Price Ceilings and the Benefits of Scalping

2.3 Market Structures: From Perfect Competition to Monopoly

Perfect Competition

Monopoly and Other Imperfectly Competitive Market Structures

The Impact of an Increase in Costs

2.4 The Rise of Professional Sports

Biography Feature: Silvio Berlusconi

Summary

Appendix 2A: Utility Functions, Indifference Curves, and Budget Constraints

2A.1 Constrained Maximization

2A.2 Using Indifference Curves and Budget Constraints: The Rise of Soccer and Baseball

Appendix 2B: Regression Analysis in Brief

Multiple Regression and Dummy Variables

■ Teaching Tips and Additional Examples

Chapter 2 contains a fairly extensive review of general economic principles which has expanded in the latest edition. The amount of time that you will need to spend on this chapter depends on the backgrounds of the students in your class. If the majority of your students have had intermediate economics, you may want to skim the body of the chapter entirely and focus on the appendixes. Alternatively, you could briefly skim through the theory but present some of the examples in the chapter as a continuing introduction to the use of economics to explain the behavior of owners, players, and consumers in the sports industry. If your students have had only one semester of economics—or even no prior courses—you will need to devote some significant class time to this material, as it is used throughout the remainder of the text.

The opening discussion explaining the workings of the economists models are worth an overview for every type of student body. The appendix on regression is not essential, but recommended, as students will have a much greater appreciation for the models if they understand the regression-based analysis that is so prevalent in the literature.

Supply and Demand

You can open with a general class discussion and ask the class to consider a typical competitive market with many buyers and sellers. Have the class list everything that would change how much buyers want to buy. First on the list should be the price of that product. This is the answer to the question “what changes quantity demanded?” and can be explained in more detail with the Law of Demand. Everything else on that list is the answer to the question “what changes demand”.

Then try to place each specific answer into the following groups:

- Change in taste
- Change in related goods (substitutes and complements)
- Change in income (normal goods and inferior goods)
- Change in the number of buyers
- Change in the buyers’ expectations

A similar discussion can follow about things that would change what sellers want to sell. Price would again be an obvious factor and this answers the question “How do you change quantity supplied?” and explains the Law of Supply. Everything else shifts the supply curve and can be summarized into the following groups:

- Change in technology
- Change in the price of a necessary resource
- Change in the number of sellers
- Change in sellers’ expectations

At this point apply the general information to the specific example in the book about baseball cards (why the Mantle and Aaron cards sell for different prices). Take note this is not a competitive market (as there may not be many sellers) but the model developed is still a useful one. In addition the discussion about Michael Lewis’ *The Blind Side* may be useful for those who saw the movie or read the book. Later discussions in the book about ceilings and floors, and the discussion of the economics of ticket scalping may fall right into place at this point.

Illustrating Elasticity: A Warning

The equation used for elasticity in the textbook is $E = \% \Delta Q / \% \Delta p$. Depending on their past classes, students may have learned to calculate $\% \Delta$ as either $(\text{New} - \text{Old}) / \text{Old}$ or $(\text{New} - \text{Old}) / \text{Average}$. This first method is used in the examples in the book but has the disadvantage of resulting in a different elasticity depending on which price and quantity combination is considered the starting point. The second method results in

the same elasticity whether prices are increasing or decreasing but is less intuitive and harder to calculate. Under either method, the elasticity calculated may be different for a large change in price compared to a small change in price.

Output and the Production Function

The discussion of what exactly constitutes output (Q) is worth some discussion as this question is reoccurring throughout this course. In this section the text settles on output being the number of wins produced per season, but it could just as easily be attendance, television appearances (or revenue), games played, popularity, etc... Regardless, as the semester progresses healthy discussions of what constitutes the market will lead to the proper definition of output (which will change as we discuss different products). The time spend on the other main themes in this section (the production function, total product of labor, marginal product of labor, diminishing returns, marginal cost, etc...) should be a function of the class background distribution. If the students are not used to these concepts slowing down quite a bit may be a good investment in time.

A Discussion on Market Power

It could be said that the most reoccurring theme in this course will be the ability for individuals and firms to flex their monopoly and monopsony power. This in turn helps explain why the sports world has such an unusual economic landscape. With that in mind it may be useful to take your time with the section on market structures and highlight the monopolist ability to restrict output in order to maximize profits.

■ Solutions to Back-of-Chapter Problems

- 2.1 Some cities have several teams in England's Premier League (the country's top soccer league). Explain how this affects the monopoly power of those teams.

Answer: The presence of another team in the same city reduces each team's monopoly power since the other team(s) provides a substitute for the team's product. Manchester United, for example, can't charge too much for their tickets for fear of fans abandoning the team and becoming fans of Manchester City instead.

- 2.2 The marginal cost of admitting an additional fan to watch the Sacramento Kings play basketball is close to zero, but the average price of a ticket to a Kings game is about \$60. What do these facts tell you about the market in which the Kings operate? Justify your answer.

Answer: The Kings must have some degree of monopoly power since under perfect competition firms set $P = MC$ while the Kings set $P > MC$.

- 2.3 The major North American sports leagues prohibit teams from locating within a specific distance of an existing team. Why do they have such a rule?

Answer: The presence of another team in the same city reduces each team's monopoly power since the other team(s) provides a substitute for the team's product. By limiting competing teams' ability to locate within a specific distance of an existing team, in effect the league is granting each franchise a local monopoly.

- 2.4 Use supply and demand to show why teams that win championships typically raise their ticket prices the next season.

Answer: Since fans typically like winning and since their good memories persist for at least one season, championship teams generally experience an increase in demand for their

product. An increase in demand shifts the demand curve to the right leading to an increase in equilibrium prices.

- 2.5 Use a graph with attendance on the horizontal axis and the price of tickets on the vertical axis to show the effect of the following on the market for tickets to see the Vancouver Canucks play hockey.
- The quality of play falls, as European players are attracted to play in rival hockey leagues in their home countries.
 - Vancouver places a C\$1 tax on all tickets sold.
 - A recession reduces the average income in Vancouver and the surrounding area.
 - The NBA puts a new basketball franchise in Vancouver.

Answers: In each case, the student should show a supply and demand graph, with the appropriate shift of the correct curve.

- Demand shifts left, price decreases, equilibrium quantity decreases.
- This can either be shown as a leftward shift of the demand curve or a leftward shift of the supply curve. In either case, if a fixed (per unit) tax is placed on tickets the vertical distance between the new and old curves should equal the tax.
- Demand shifts left, price decreases, equilibrium quantity decreases.
- Demand shifts left, price decreases, equilibrium quantity decreases.

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- 2.8 The New York Jets football team raises ticket prices from \$100 to \$110 per seat and experience a 5 percent decline in tickets sold. What is the elasticity of demand for tickets?

Answer: $\varepsilon = \% \Delta Q / \% \Delta p = -0.05 / (10/100) = -0.50$. Demand is inelastic since $|\varepsilon| < 1$. Alternatively, if a price increase of 10 percent leads to a 5 percent decline in ticket sales, the elasticity is $-5/10$ or -0.50 . Since the law of demand states that an increase in price always leads to a decrease in the quantity demanded, it is common practice to drop the negative sign when discussing a good's own-price elasticity of demand.

- 2.9 Since the 1990s, many Major League Baseball teams have moved to new stadiums that are far smaller than the ones they have replaced. Use the appropriate curves to show what this has meant for ticket prices.

Answer: Starting with a regular supply and demand graph, a reduction in the number of seats shifts supply to the left. Equilibrium prices rise. (As an aside, newer stadiums also provide more amenities to the fans which should serve to shift demand to the right raising equilibrium prices even further.)

- 2.10 Suppose the Tampa Bay Rays baseball team charges \$10 bleacher seats (poor seats in the outfield) and sells 250,000 of them over the course of the season. The next season, the Rays increase the price to \$12 and sell 200,000 tickets.

- What is the elasticity of demand for bleacher seats at Rays games?
- Assuming the marginal cost of admitting one more fan is zero, is the price increase a good idea?

Answer: (a) $\varepsilon = \% \Delta Q / \% \Delta p = ((200,000 - 250,000) / 250,000) / ((12 - 10) / 10) = -1.00$. Demand is unit elastic since $|\varepsilon| = 1.00$. Alternatively, if a price increase of 20 percent leads to a 20 percent decline in ticket sales, the elasticity is $-20/20$ or -1.00 .

- The price increase is not a good idea. Total revenues have fallen from $\$2,500,000 = (250,000)(10)$ to $\$2,400,000 = (200,000)(12)$. Anytime elasticity is greater than one, an increase in prices will result in a drop in total revenue.