THE ECONOMICS OF MANAGERIAL DECISIONS

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THE ECONOMICS OF MANAGERIAL DECISIONS

New York, NY

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For Chau, our kids and our grandkids
Roger D. Blair

For Sue's memory and our kids
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Questions and Problems

Solving Teaching and Learning Challenges

Students who enroll in the managerial economics course are typically not economics majors. They take the course with the goal of building skills that will help them become better managers in a variety of business settings, including small and large firms, nonprofit organizations, and public service. In teaching our classes, we often skipped theoretical, abstract coverage in existing books—such as indifference curves, isoquants, the Cobb–Douglas production function, the Rothschild Index, and the Lerner Index—because these topics are not useful to students pursuing careers in management. Based on our teaching experiences and feedback from many reviewers and class testers, we have omitted this sort of theoretical, abstract coverage from our book.

Our decision to omit these topics does not mean that we shortchange economic theory. On the contrary, our book and a wide range of media assets show students how economic theory and concepts—including opportunity cost, marginal analysis, and profit maximization—can provide important insights into real-world managerial challenges such as how to price a product, how many workers to hire, whether to expand production, and how much to spend on advertising. Applications and extensions of the core theory abound. Some of the topics include bundled pricing, vertical integration, resale price maintenance, industry-wide advertising, settlement of legal disputes, present value and investment decisions, auctions and optimal bidding, and optimal patent search. We focus on how to think critically and make decisions in real-world business situations—in other words, how to *apply* economic theory.

MyLab Economics

MyLab Economics is an online homework, tutorial, and assessment program that delivers technology-enhanced learning in tandem with printed textbooks and etexts. It improves results by helping students quickly grasp concepts and by providing educators with a robust set of tools to easily gauge and address the performance of individuals and classrooms.

The Study Plan provides personalized recommendations for each student, based on his or her ability to master the learning objectives in your course. This allows students to focus their study time by pinpointing the precise areas they need to review, and allowing them to use customized practice and learning aids—such as videos, eText, tutorials, and more—to keep them on track.

First-in-class content is delivered digitally to help every student master critical course concepts. MyLab Economics includes Mini Sims, Auto-Graded Excel Projects, and Digital Interactives to not only help students understand important economic concepts, but also help them learn how to apply these concepts in a variety of ways so they can see how they can use economics long after the last day of class.

MyLab Economics allows for easy and flexible assignment creation, so instructors can assign a variety of assignments tailored to meet their specific course needs.

Visit www.pearson.com/mylab/economics for more information on Mini Sims, Auto-Graded Excel Projects, Digital Interactives, our LMS integration options, and course management options for any course of any size.

Chapter Features

The following key features and media assets demonstrate how *The Economics of Managerial Decisions* keeps the spotlight on the student as a future manager.

Real-world chapter openers and closers: Each chapter begins with a real-world example that piques student interest and poses a managerial decision-making question. We revisit this question and apply the chapter content to provide an answer at the end. Because students pursue careers in various fields, the chapter openers present challenges faced by a number of different types of organizations, including large and small profit-seeking firms, government organizations, nongovernmental organizations, and nonprofits.

Managers at the Gates Foundation Decide to Subsidize Antimalarial Drugs

The Bill and Melinda Gates Foundation (Gates Foundation) is the world's largest philanthropic organization, with a trust endowment of nearly $40 billion. The foundation provides grants for education, medical research, and vaccinations around the world. As of 2015, the foundation had made total grants of $37 billion. The goal of the Gates Foundation is not maximizing profit. Instead, its goal is to save lives and improve health in developing countries.

In 2010, the Global Fund to Fight AIDS, Tuberculosis and Malaria presented proposals to the Gates Foundation to subsidize antimalarial drugs in Kenya and other nations of sub-Saharan Africa. Although the Gates Foundation provides nearly $4 billion in grants per year, there are more than $4 billion worth of competing uses for its resources. Consequently, before the managers accepted these proposals, they needed to determine their expected impact: How many people would these projects save compared to alternative uses of the funds? The managers realized that lives hinged on their decision, so they wanted to be certain that they were getting the most value for their money.

The proposed subsidy programs would lower the price patients pay for the drugs. As you learned in Chapter 2, according to the law of demand, a decrease in the price of a product increases the quantity demanded. Antimalarial drugs are no exception; if their price falls, more patients will buy them. To make the proper decision about the proposals, however, the foundation's managers needed a more quantitative estimate: Precisely how many additional patients would buy the drugs when their prices were lower?

This chapter explains how to answer this and other questions that require quantitative answers. At the end of the chapter, you will learn how the Gates Foundation's managers could forecast the number of patients they would help by subsidizing the drugs.

Sources: Karl Mathiesen, "What Is the Bill and Melinda Gates Foundation?" *The Guardian*. March 16, 2015; Gavin Yamey, Marco Schaferhoff, and Dominic Montagu, "Piloting the Affordable Medicines Facility-Malaria: What Will Success Look Like?" *Bulletin of the World Health Organization*, February 3, 2012, http://www.who.int/bulletin/volumes/90/6/11-091199/en; Erinstar, "Availability of Subsidized Malaria Drugs [illegible]," *Behavioral Foundations of Primary Health Care Policy Advocacy*, March 11, 2012, https://.com/2012/03/11/availability-of-subsidized-malaria-drugs-in-kenya-18-2.

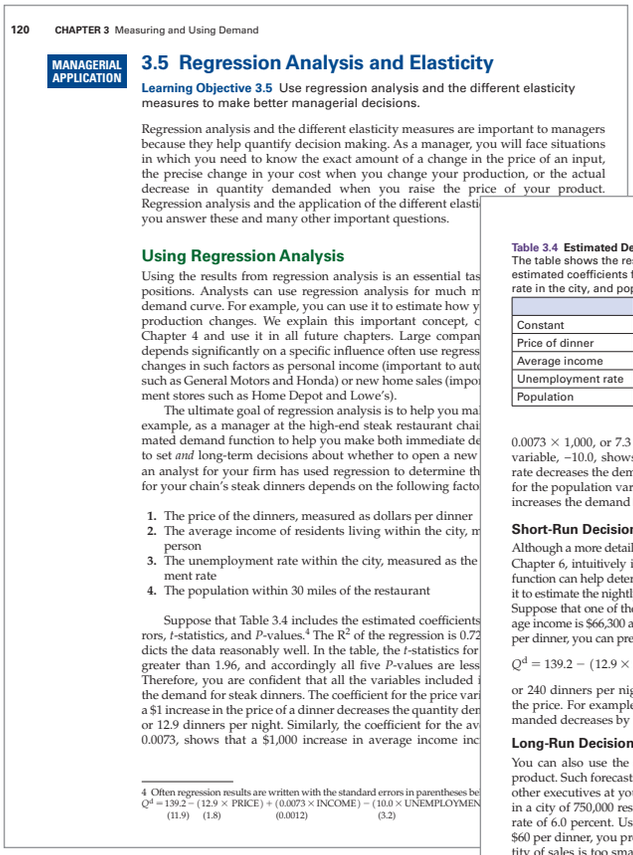
Revisiting How Managers at the Gates Foundation Decided to Subsidize Antimalarial Drugs

As noted at the beginning of the chapter, the managers at the Bill and Melinda Gates Foundation want to use their funds in the best way possible. Because wasting their resources means that people could die unnecessarily, managers at the foundation want to fund the most cost-effective programs. To achieve that goal, they must determine the quantitative impact of the proposals presented to them.

In the case of the proposals to subsidize antimalarial drugs in Kenya and other nations, the managers were unlikely to have an estimated demand curve for the drugs in these countries because of data limitations. Instead, they probably relied on estimates of the price elasticity of demand to determine the increase in the quantity of drugs demanded.

The subsidy programs lowered the price of these drugs between 29 percent and 78 percent (the fall in price differed from nation to nation and from drug to drug). Overall, the average decrease in price was roughly 50 percent. Because there are few substitutes, the demand for pharmaceutical drugs is price inelastic. The price elasticity of demand for pharmaceutical drugs for low-income Danish consumers is estimated to be 0.31. Denmark and Kenya differ in an important respect: Low-income consumers in Kenya have much lower incomes than their counterparts in Denmark. Consequently, the expenditure on drugs in Kenya is a much larger fraction of consumers' income, which means that the price elasticity of demand for drugs in Kenya is larger than in Denmark. If the managers at the Bill and Melinda Gates Foundation estimated that the price elasticity of demand for drugs in Kenya was about twice that in Denmark—say, 0.60—they could then predict that lowering the price of the drugs by 50 percent would increase the quantity demanded by 50 percent $\times$ 0.60 = 30 percent.

The Gates Foundation funded the proposals to subsidize antimalarial drugs. The actual outcome was that the quantity of the drugs demanded in the different nations increased by 20 to 40 percent. The quantitative estimate was right in line with what occurred. Using the price elasticity of demand to estimate the impact of the drug subsidy proposals allowed the managers at the foundation to compare them to competing proposals and to make decisions that saved the maximum number of lives.



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MANAGERIAL APPLICATION

3.5 Regression Analysis and Elasticity

Learning Objective 3.5 Use regression analysis and the different elasticity measures to make better managerial decisions.

Regression analysis and the different elasticity measures are important to managers because they help quantify decision making. As a manager, you will face situations in which you need to know the exact amount of a change in the price of an input, the precise change in your cost when you change your production, or the actual decrease in quantity demanded when you raise the price of your product. Regression analysis and the application of the different elasti you answer these and many other important questions.

Using Regression Analysis

Using the results from regression analysis is an essential tas positions. Analysts can use regression analysis for much m demand curve. For example, you can use it to estimate how y production changes. We explain this important concept, c Chapter 4 and use it in all future chapters. Large compan depends significantly on a specific influence often use regress changes in such factors as personal income (important to aut such as General Motors and Honda) or new home sales (impo ment stores such as Home Depot and Lowe's).

The ultimate goal of regression analysis is to help you ma example, as a manager at the high-end steak restaurant chai mated demand function to help you make both immediate de to set *and* long-term decisions about whether to open a new an analyst for your firm has used regression to determine th for your chain's steak dinners depends on the following facto

1. The price of the dinners, measured as dollars per dinner
2. The average income of residents living within the city, m person
3. The unemployment rate within the city, measured as the ment rate
4. The population within 30 miles of the restaurant

Suppose that Table 3.4 includes the estimated coefficients rors, *t*-statistics, and *P*-values.[4] The R^2 of the regression is 0.72 dicts the data reasonably well. In the table, the *t*-statistics for greater than 1.96, and accordingly all five *P*-values are less Therefore, you are confident that all the variables included i the demand for steak dinners. The coefficient for the price vari a $1 increase in the price of a dinner decreases the quantity der or 12.9 dinners per night. Similarly, the coefficient for the av 0.0073, shows that a $1,000 increase in average income inc

4 Often regression results are written with the standard errors in parentheses be
$Q^d = 139.2 - (12.9 \times \text{PRICE}) + (0.0073 \times \text{INCOME}) - (10.0 \times \text{UNEMPLOYMEN}$
(11.9) (1.8) (0.0012) (3.2)

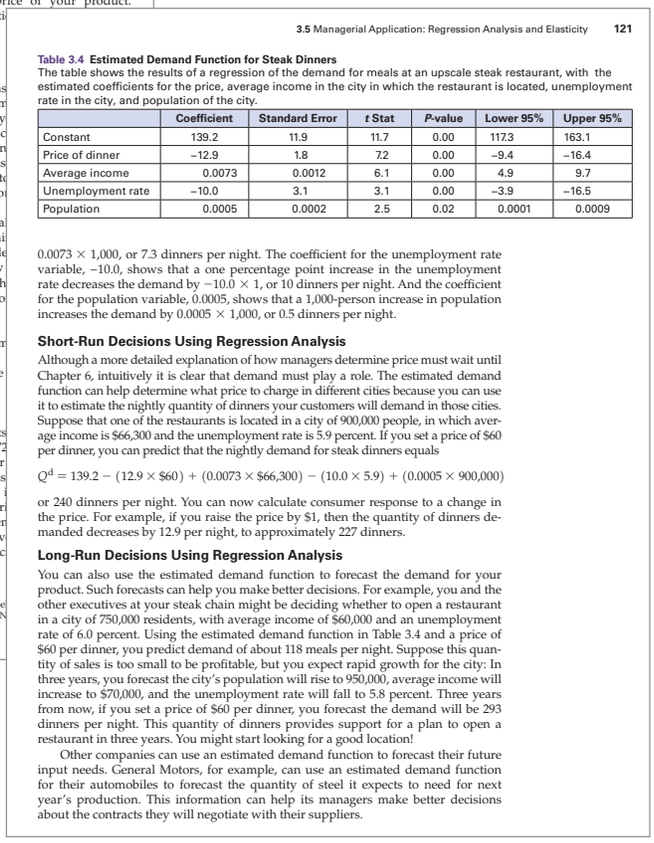

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Table 3.4 Estimated Demand Function for Steak Dinners
The table shows the results of a regression of the demand for meals at an upscale steak restaurant, with the estimated coefficients for the price, average income in the city in which the restaurant is located, unemployment rate in the city, and population of the city.

	Coefficient	Standard Error	*t* Stat	*P*-value	Lower 95%	Upper 95%
Constant	139.2	11.9	11.7	0.00	117.3	163.1
Price of dinner	–12.9	1.8	7.2	0.00	–9.4	–16.4
Average income	0.0073	0.0012	6.1	0.00	4.9	9.7
Unemployment rate	–10.0	3.1	3.1	0.00	–3.9	–16.5
Population	0.0005	0.0002	2.5	0.02	0.0001	0.0009

0.0073 × 1,000, or 7.3 dinners per night. The coefficient for the unemployment rate variable, −10.0, shows that a one percentage point increase in the unemployment rate decreases the demand by −10.0 × 1, or 10 dinners per night. And the coefficient for the population variable, 0.0005, shows that a 1,000-person increase in population increases the demand by 0.0005 × 1,000, or 0.5 dinners per night.

Short-Run Decisions Using Regression Analysis

Although a more detailed explanation of how managers determine price must wait until Chapter 6, intuitively it is clear that demand must play a role. The estimated demand function can help determine what price to charge in different cities because you can use it to estimate the nightly quantity of dinners your customers will demand in those cities. Suppose that one of the restaurants is located in a city of 900,000 people, in which average income is $66,300 and the unemployment rate is 5.9 percent. If you set a price of $60 per dinner, you can predict that the nightly demand for steak dinners equals

$$Q^d = 139.2 - (12.9 \times \$60) + (0.0073 \times \$66{,}300) - (10.0 \times 5.9) + (0.0005 \times 900{,}000)$$

or 240 dinners per night. You can now calculate consumer response to a change in the price. For example, if you raise the price by $1, then the quantity of dinners demanded decreases by 12.9 per night, to approximately 227 dinners.

Long-Run Decisions Using Regression Analysis

You can also use the estimated demand function to forecast the demand for your product. Such forecasts can help you make better decisions. For example, you and the other executives at your steak chain might be deciding whether to open a restaurant in a city of 750,000 residents, with average income of $60,000 and an unemployment rate of 6.0 percent. Using the estimated demand function in Table 3.4 and a price of $60 per dinner, you predict demand of about 118 meals per night. Suppose this quantity of sales is too small to be profitable, but you expect rapid growth for the city: In three years, you forecast the city's population will rise to 950,000, average income will increase to $70,000, and the unemployment rate will fall to 5.8 percent. Three years from now, if you set a price of $60 per dinner, you forecast the demand will be 293 dinners per night. This quantity of dinners provides support for a plan to open a restaurant in three years. You might start looking for a good location!

Other companies can use an estimated demand function to forecast their future input needs. General Motors, for example, can use an estimated demand function for their automobiles to forecast the quantity of steel it expects to need for next year's production. This information can help its managers make better decisions about the contracts they will negotiate with their suppliers.

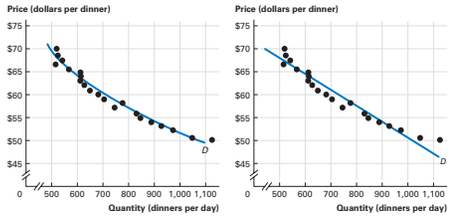
Managerial Applications: Fifteen of the sixteen chapters include a major numbered section devoted to managerial applications of the chapter content.

NEW! Mini Sims: The Managerial Applications are accompanied by Mini Sims that are located in MyLab Economics. Written by David Switzer of St. Cloud State University and Casey DiRienzo of Elon University, these Mini Sims are designed to build students' critical-thinking and decision-making skills through an engaging, active learning experience. Each Mini Sim requires students to make a series of decisions based on a business scenario, which helps them move from memorization to understanding and application. These also allow students to experience how different functional areas of a business interact and how each employee's decisions affect the organization.

SOLVED PROBLEM

Which Regression to Use?

Your research department gives you the following two estimated demand curves. The estimated demand curve to the left is log-linear, and the estimated demand curve to the right is linear.



a. Which regression do you think has the highest R^2—the one with the log-linear specification or the one with the linear specification? Explain your answer.

b. Are the predicted quantities from one demand curve *always* closer to the actual quantities than the predicted quantities from the other demand curve?

c. Which estimated demand curve would you use to make your decisions? Why?

Answer

a. The log-linear specification is closer to more of the data points than the linear specification. So the R^2 of the log-linear specification exceeds that of the linear specification.

b. Even though the predicted quantities from the log-linear specification are closer to most of the actual quantities, there are a few predicted quantities that are closer when using the linear specification. In particular, for prices of $67 and $64, the predicted quantities from the linear specification are closer to the actual quantities than the predictions from the log-linear specification.

c. As a manager, you want to base your decisions on the most accurate information possible. The log-linear specification has the higher R^2, which means that it does a better job of capturing the variation in the actual quantities than does the linear specification. Consequently, you should use the log-linear specification as the basis for your decisions.

Solved Problems: This section-ending feature guides students step by step in solving a managerial problem, set in the context of a situation managers may encounter.

DECISION SNAPSHOT

Advertising and the Price Elasticity of Demand

Your marketing department estimates that at the current price and quantity, your firm's product has a price elasticity of demand of 1.1. You run an advertising campaign that changes the demand, so that at the current price and quantity the elasticity falls to 0.8. In response to this change, would you raise the price, lower it, or keep it the same? Explain your answer.

Answer

You should raise your price. Before the advertising campaign, the demand for your product was elastic, so according to the total revenue test, a price hike would lower your firm's total revenue. After the campaign, the demand became inelastic. You now will be able to increase your firm's profit by raising the price. Because the demand is inelastic, a price hike raises your firm's total revenue. A price hike also decreases the quantity demanded, so your firm produces less, which decreases your costs. Raising revenue and lowering cost unambiguously boost your firm's profit!

Decision Snapshots: This feature places readers in the role of managers facing a decision in a range of industries, including large and small for-profit firms, public service organizations, and nonprofits. An answer is included so students can confirm the decision they have made.

Integrated examples: We consistently present economic concepts in the context of business scenarios from a range of industries. For example:

- Chapter 4, "Production and Costs," uses dinners at a restaurant to present the concepts of production and costs.
- Chapter 13, "Marketing Decisions: Advertising and Promotion," includes examples of advertising by a private company as well as by an entire industry.
- Chapter 14, "Business Decisions Under Uncertainty," discusses the effect of uncertainty on business decisions using examples including Starbucks and Samsung.

CASE STUDY

Decision-Making Using Regression

Introduction

Upper-level managers frequently make important long-run strategic decisions about acquisitions, merg or store locations, pricing, financing, and r Indeed, a major focus of this book is to explain h agers can use economic principles as a guide t these types of decisions. But even the best guid fail without adequate information and data anal

Company analysts often use regression a help them provide quantitative information to rial decision makers. In this chapter, you learne gression analysis can help managers estimate functions. But regression can be used to help answer other questions, such as these: How m units of a product will we sell if our store stay extra hour each day? Is San Diego a good locatio a new store? How will consumers react if we ch packaging of our product? In this case study, w how regression analysis can help provide inva formation about another important manager whether to remodel the company's stores and/ how the company prices its products.

Regression Example

Regression can help managers make the decisi by companies that are debating whether to rem stores and/or their operations. Companies such rant chains continually struggle to retain the share by remaining fresh and relevant for cu Most restaurant chains undertake constant in moving specials on and off their menus as well ing and refining their more permanent offerin sionally, however, upper-level managers decide of their restaurants need renovation. Take, for Olive Garden, a division of Darden with more restaurant locations. In 2013, the new presiden Garden, Dave George, announced that Olive would remodel and modernize its interiors.

Suppose that you work in the research de for a similar restaurant chain. Your chain has a r dent, and your president also is considering a of remodeling for your restaurants. Remodeling sive, so the new president asks your research determine if the expense is justified by the increased in the chain's profit.

To obtain the information needed to make of decision, a firm often remodels a few stores

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uses regression analysis to compare the profitability of the remodeled stores to that of stores that are not remodeled.

- **Total cost.** The higher the total cost, the lower the profit. So your team should include independent variables in the regression that affect a restaurant's cost. For example, your group might settle upon two variables: (1) the rent paid for the restaurant, which will vary among locations, and (2) the legal minimum wage employees receive, which will also vary among locations. When these variables are included in the regression, the estimated coefficients for both of them are expected to be negative—a higher rent and a higher minimum wage both increase the restaurant's cost and thereby reduce its profit.

In addition to the factors that affect total revenue and total cost, the regression needs to take account of whether the restaurant was remodeled according to the past president's scheme, remodeled according to the new president's ideas, or not remodeled at all. To do so, your team needs to include indicator variables (colloquially called "dummy variables") as additional independent variables. Indicator variables equal 1 when a condition is met and equal 0 otherwise. For example, one indicator variable should equal 1 if the restaurant had previously been remodeled and 0 if it had not been remodeled. Call this variable OLDREMODEL. For the purposes of determining the profitability of the new style of remodeling, the crucial indicator variable measures whether the location has been remodeled according to the new scheme. This variable equals 1 for restaurants that are newly remodeled and 0 for the other restaurants. Call this variable NEWREMODEL. The estimated coefficient of each indicator variable measures the effect of whatever condition is being met.[2] That means that the coefficient for the variable NEWREMODEL is key because when the variable equals 1, the restaurant has been newly remodeled along the lines suggested by the new president. The change in profit for a restaurant going from no remodeling at all to the new remodeling equals the estimated coefficient of NEWREMODEL—call it $\hat{g}$—multiplied by the value of the variable when the location is newly remodeled, which is 1, or $\hat{g} \times 1 = \hat{g}$.[3]

There are other factors you and your group could include that affect the total revenue and total cost, but let's limit the discussion to what we have discussed. Using these variables, to predict the profitability of a restaurant in your chain, your team would estimate the regression as

$$\text{PROFIT} = a + (b \times \text{POPULATION}) + (c \times \text{INCOME}) - (d \times \text{RENT}) - (e \times \text{MINIMUMWAGE}) + (f \times \text{OLDREMODEL}) + (g \times \text{NEWREMODEL})$$

in which a, b, c, d, e, f, and g are the coefficients the regression will estimate.

Once your team has estimated the regression, you can use what you have learned in Chapter 3 to judge the adequacy of the regression: Are the estimated coefficients statistically different from zero? Is the fit of the regression high? Or do you and your group need to either add or remove some variables? Once you are satisfied with the regression, you can use it to determine the profitability of the proposed new remodeling. In particular, the estimated $\hat{g}$ coefficient measures the change in profit from the new remodeling. If this estimated coefficient is positive and significantly different from zero, you can present it to your new president as an estimate of the profit from remodeling a previously unremodeled store according to the new style and allow the president to use it when deciding whether to proceed with the new remodeling.

Your Decisions

Regression analysis can be used in any industry, not just the restaurant industry. Take, for example, the retail industry. In November 2011, Ron Johnson was hired to be the new CEO of JCPenney. Less than two months later, Mr. Johnson announced the following sweeping changes:

1. JCPenney's pricing had relied on heavy discounting and extensive use of coupons; Mr. Johnson immediately changed the pricing policy to adopt "full-but-fair prices" with no discounts or coupons.
2. JCPenney had offered a large selection of middle-of-the-road store brands; Mr. Johnson discontinued the store brands in favor of selling more "trendy," high-fashion brands.

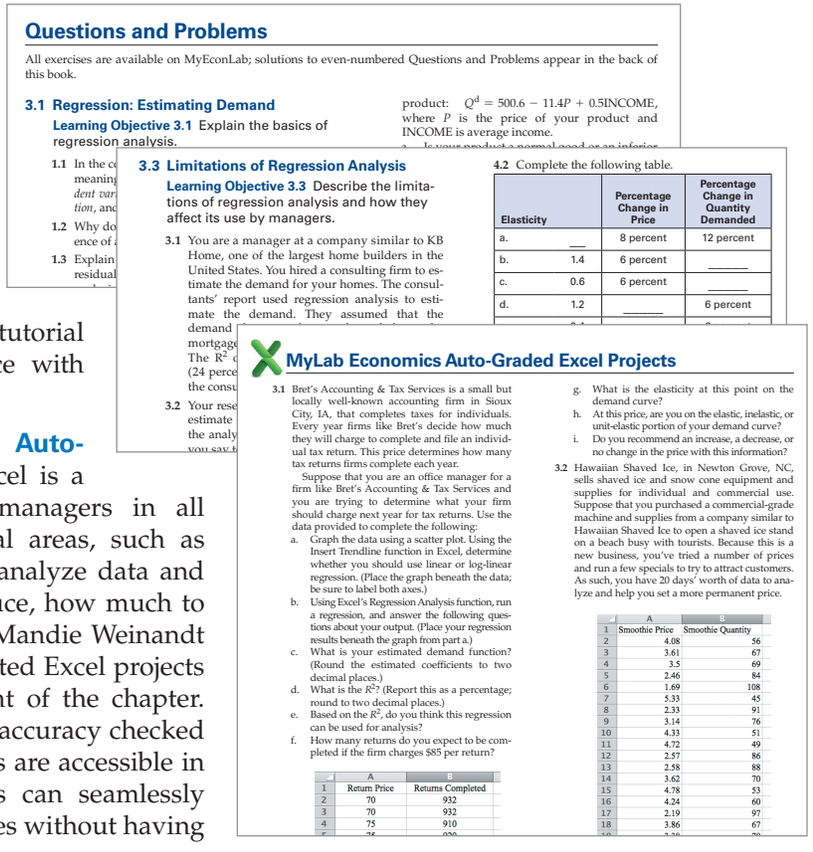
2 For technical reasons, when a set of conditions taken together equals the entire set of observations, it is not possible to use an indicator variable for each type of condition; one type must not have an indicator variable. For example, in the analysis discussed above, you cannot use an indicator variable that equals 1 if the location had been previously remodeled, another indicator variable that equals 1 if the location is newly remodeled, and yet a third indicator variable that equals 1 if the location has not been remodeled. You cannot use all three of these indicator variables because taken together these three conditions equal the entire set of observations. Consequently, in the regression discussed in the example, there is no indicator variable for the stores that have not been remodeled.

3 More specifically, the NEWREMODEL indicator variable's coefficient, $\hat{g}$, measures the profit from the new remodeling relative to whichever condition has not been given an indicator variable. In the example at hand, $\hat{g}$ measures the restaurant's change in profit from being newly remodeled *compared to* not being remodeled at all.

Case studies: Four chapters end with case studies that illustrate how managers used the topics in the chapter to approach or solve a business challenge. The case studies conclude with open-ended questions about a similar situation that instructors can use for class discussion or assign as homework. Here are the four cases:

- Chapter 3 Case Study: Decision Making Using Regression
- Chapter 9 Case Study: Student Athletes and the NCAA
- Chapter 14 Case Study: Decision Making with Final Offer Arbitration
- Chapter 16 Case Study: Analyzing Predatory Pricing as an Investment

Assessment: End-of-chapter Questions and Problems are grouped by the titles of the major numbered sections and the accompanying learning objectives so that instructors can easily assign problems based on those objectives, and students can efficiently review material that they find difficult. Students can complete these problems and questions on MyLab Economics, where they receive tutorial help, instant feedback, and assistance with incorrect responses.



Questions and Problems

All exercises are available on MyEconLab; solutions to even-numbered Questions and Problems appear in the back of this book.

3.1 Regression: Estimating Demand

Learning Objective 3.1 Explain the basics of regression analysis.

product: $Q^d = 500.6 - 11.4P + 0.5\text{INCOME}$, where P is the price of your product and INCOME is average income.

3.3 Limitations of Regression Analysis

Learning Objective 3.3 Describe the limitations of regression analysis and how they affect its use by managers.

4.2 Complete the following table.

Elasticity		Percentage Change in Price	Percentage Change in Quantity Demanded
a.	___	8 percent	12 percent
b.	1.4	6 percent	_____
c.	0.6	6 percent	_____
d.	1.2	_____	6 percent

MyLab Economics Auto-Graded Excel Projects

3.1 Bret's Accounting & Tax Services is a small but locally well-known accounting firm in Sioux City, IA, that completes taxes for individuals. Every year firms like Bret's decide how much they will charge to complete and file an individual tax return. This price determines how many tax returns firms complete each year.

Suppose that you are an office manager for a firm like Bret's Accounting & Tax Services and you are trying to determine what your firm should charge next year for tax returns. Use the data provided to complete the following:

a. Graph the data using a scatter plot. Using the Insert Trendline function in Excel, determine whether you should use linear or log-linear regression. (Place the graph beneath the data; be sure to label both axes.)
b. Using Excel's Regression Analysis function, run a regression, and answer the following questions about your output. (Place your regression results beneath the graph from part a.)
c. What is your estimated demand function? (Round the estimated coefficients to two decimal places.)
d. What is the R^2? (Report this as a percentage; round to two decimal places.)
e. Based on the R^2, do you think this regression can be used for analysis?
f. How many returns do you expect to be completed if the firm charges $85 per return?
g. What is the elasticity at this point on the demand curve?
h. At this price, are you on the elastic, inelastic, or unit-elastic portion of your demand curve?
i. Do you recommend an increase, a decrease, or no change in the price with this information?

	A	B
1	Return Price	Returns Completed
2	70	932
3	70	932
4	75	910

3.2 Hawaiian Shaved Ice, in Newton Grove, NC, sells shaved ice and snow cone equipment and supplies for individual and commercial use. Suppose that you purchased a commercial-grade machine and supplies from a company similar to Hawaiian Shaved Ice to open a shaved ice stand on a beach busy with tourists. Because this is a new business, you've tried a number of prices and run a few specials to try to attract customers. As such, you have 20 days' worth of data to analyze and help you set a more permanent price.

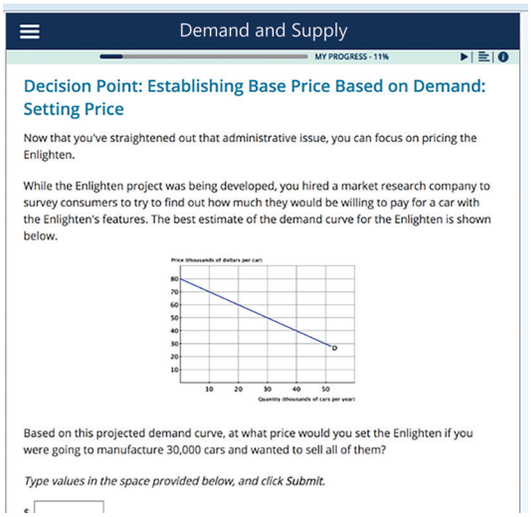
	A	B
1	Smoothie Price	Smoothie Quantity
2	4.08	56
3	3.61	67
4	3.5	69
5	2.46	84
6	1.69	108
7	5.33	45
8	2.33	91
9	3.14	76
10	4.33	51
11	4.72	49
12	2.57	86
13	2.58	88
14	3.62	70
15	4.78	53
16	4.24	60
17	2.19	97
18	3.86	67

NEW! MyLab Economics Auto-Graded Excel Projects: Excel is a software application that managers in all industries and all functional areas, such as marketing, sales, and finance, use to analyze data and make decisions such as what to produce, how much to produce, and how to price products. Mandie Weinandt of the University of South Dakota created Excel projects for each chapter based on the content of the chapter. Kathryn Nantz of Fairfield University accuracy checked the projects and solutions. The projects are accessible in MyLab Economics, where instructors can seamlessly integrate Excel content into their courses without having

to manually grade spreadsheets. Students simply download a spreadsheet, work live on a problem in Excel, and then upload that file back into MyLab Economics, where they receive personalized, detailed feedback in the form of reports that pinpoint where they went wrong on any step of the problem.

Optional calculus appendices: The mathematics we use in the chapters is algebra and geometry because this level is appropriate for managers. For those who want to delve more deeply into the math, appendices showing calculus derivations of the important results accompany 9 of the 16 chapters (Chapters 1, 3, 4, 5, 6, 7, 10, 12, and 13). Each appendix includes five homework problems that use calculus.

Developing Career Skills



Students who want to succeed in a rapidly changing job market should be aware of their career options and how to go about developing a variety of skills. As featured on the previous pages, the text focuses on developing these skills in various features:

- *Real-world chapter openers and closers* show how managers from a variety of business organizations apply economic concepts to make decisions.
- *Solved Problems* and *Decision Snapshots* help students build their analytical and critical-thinking skills.
- *Mini Sims* related to the Managerial Application at the end of each chapter, except Chapter 1, help build students' critical-thinking and decision-making skills through an engaging, active learning experience. The screen on the left shows one decision-point step in the Mini Sim that accompanies Chapter 2, "Demand and Supply."
- *Auto-Graded Excel Projects* at the end of each chapter help students build their skill using Excel, a software application that they will need to use as managers regardless of the industry or functional area in which they choose to work.

Table of Contents Overview

Chapters 1 through 6 are core chapters. An instructor can cover these chapters in order and then proceed either to Chapters 7 and 8 or to Chapter 10. The chapters in Part 3 (Chapters 10–16) can be covered in any order. For those who want to delve more deeply into the mathematics, appendices showing calculus derivations of the important results accompany 9 of the 16 chapters (Chapters 1, 3, 4, 5, 6, 7, 10, 12, and 13). An appendix on how to write a business plan and an additional chapter on franchising decisions are located at www.pearson.com/mylab/economics.

Part 1. ECONOMIC FOUNDATIONS
Chapter 1: Managerial Economics and Decision Making
Chapter 2: Demand and Supply
Chapter 3: Measuring and Using Demand

Part 2. MARKET STRUCTURES AND MANAGERIAL DECISIONS
Chapter 4: Production and Costs
Chapter 5: Perfect Competition

Chapter 6: Monopoly and Monopolistic Competition
Chapter 7: Cartels and Oligopoly
Chapter 8: Game Theory and Oligopoly
Chapter 9: A Manager's Guide to Antitrust Policy

Part 3. MANAGERIAL DECISIONS
Chapter 10: Advanced Pricing Decisions
Chapter 11: Decisions About Vertical Integration and Distribution
Chapter 12: Decisions About Production, Products, and Location
Chapter 13: Marketing Decisions: Advertising and Promotion
Chapter 14: Business Decisions Under Uncertainty
Chapter 15: Managerial Decisions About Information
Chapter 16: Using Present Value to Make Multiperiod Managerial Decisions

The following content is posted on www.pearson.com/mylab/economics:
Web Appendix: The Business Plan
Web Chapter: Franchising Decisions

Instructor Teaching Resources

The following supplements are available to instructors for download at www.pearsonhighered.com.

The **Instructor's Manual** was prepared by David Switzer of St. Cloud State University and includes the following features:

- Solutions to all end-of-chapter and appendix questions and problems, which the authors prepared and then revised based on an accuracy review by two other professors.
- Chapter summaries
- Lists of learning objectives
- Chapter outlines, section summaries, and key term definitions
- Extra examples
- Teaching tips

The **Test Bank** was prepared by Casey DiRienzo of Elon University and includes over 2,400 questions, with approximately 125 multiple-choice questions and 25 true/false questions *per chapter*. Between 5 and 10 questions per chapter include a graph and ask students to analyze that graph. The questions are organized by learning objective, and each question has the following annotations:

- Topic
- Skill
- AACSB learning standard (Written and Oral Communication; Ethical Understanding and Reasoning; Analytical Thinking; Information Technology; Interpersonal Relations and Teamwork; Diverse and Multicultural Work; Reflective Thinking; Application of Knowledge)

The **PowerPoint Presentation** was prepared by Julia Frankland of Malone University and includes the following features:

- All the graphs, tables, and equations in each chapter
- Section summaries for all chapters
- Lecture notes

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