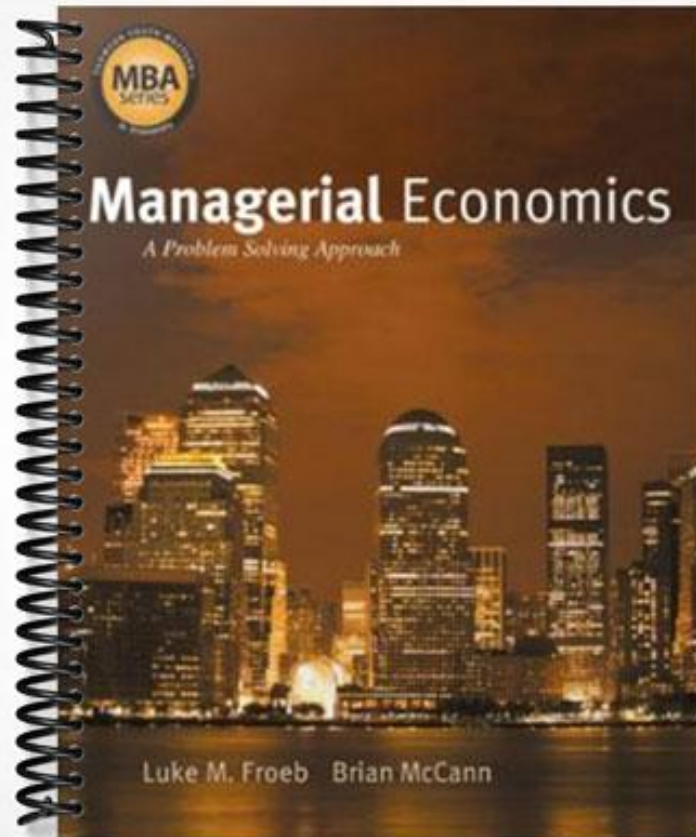


# SOLUTIONS MANUAL



***INSTRUCTOR GUIDE – PART I***

**MANAGERIAL ECONOMICS:  
A PROBLEM-SOLVING APPROACH**

**Luke Froeb  
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SECTION 0 – GUIDE TO THIS TEACHER’S GUIDE.....	5
0. CHAPTER HEADINGS OF THE TEXT.....	5
Main Points of the Chapter.....	5
Supplementary Material.....	5
Teaching Note.....	5
In-class Problem.....	5
Additional Anecdotes not in text.....	6
SECTION I – PROBLEM SOLVING AND DECISION MAKING.....	7
1. INTRODUCTION: WHAT THIS BOOK IS ABOUT.....	7
Main Points.....	7
Supplementary Material.....	7
Teaching Note.....	8
In-class Problem.....	9
Additional Anecdote: Kidder-Peabody.....	9
2. THE ONE LESSON OF BUSINESS.....	<b>Error! Bookmark not defined.</b>
Main Points.....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>
In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: Zimbabwe.....	<b>Error! Bookmark not defined.</b>
3. BENEFITS, COSTS, AND DECISIONS.....	<b>Error! Bookmark not defined.</b>
Main Points.....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>
In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: Coca-Cola.....	<b>Error! Bookmark not defined.</b>
4. EXTENT (HOW MUCH) DECISIONS.....	<b>Error! Bookmark not defined.</b>
Main Points.....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>
In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: American Express.....	<b>Error! Bookmark not defined.</b>
5. INVESTMENT DECISIONS: LOOK AHEAD AND REASON BACK.....	<b>Error! Bookmark not defined.</b>
Main Points.....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>
In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: John Deere.....	<b>Error! Bookmark not defined.</b>
SECTION II – PRICING, COSTS, AND PROFITS.....	<b>Error! Bookmark not defined.</b>
6. SIMPLE PRICING.....	<b>Error! Bookmark not defined.</b>
Main Points.....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>
In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: Mars (Snickers).....	<b>Error! Bookmark not defined.</b>
7. ECONOMIES OF SCALE AND SCOPE.....	<b>Error! Bookmark not defined.</b>
Main Points.....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>

In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: Department Store Sign Production .....	<b>Error! Bookmark not defined.</b>
8. UNDERSTANDING MARKETS AND INDUSTRY CHANGES ...	<b>Error! Bookmark not defined.</b>
Main Points .....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>
In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: Video Enhancement Market .....	<b>Error! Bookmark not defined.</b>
9. HOW TO KEEP PROFIT FROM ERODING.....	<b>Error! Bookmark not defined.</b>
Main Points .....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>
In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: Kleenex.....	<b>Error! Bookmark not defined.</b>
SECTION III – PRICING FOR GREATER PROFIT .....	<b>Error! Bookmark not defined.</b>
10. MORE REALISTIC AND COMPLEX PRICING .....	<b>Error! Bookmark not defined.</b>
Main Points .....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>
In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: American Airlines.....	<b>Error! Bookmark not defined.</b>
11. DIRECT PRICE DISCRIMINATION.....	<b>Error! Bookmark not defined.</b>
Main Points .....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>
In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: Medical Device Company .....	<b>Error! Bookmark not defined.</b>
12. INDIRECT PRICE DISCRIMINATION .....	<b>Error! Bookmark not defined.</b>
Main Points .....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>
In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: Trip Insurance.....	<b>Error! Bookmark not defined.</b>
SECTION IV – STRATEGIC DECISION MAKING.....	<b>Error! Bookmark not defined.</b>
13. STRATEGIC GAMES.....	<b>Error! Bookmark not defined.</b>
Main Points .....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>
In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: American Airlines.....	<b>Error! Bookmark not defined.</b>
14. BARGAINING .....	<b>Error! Bookmark not defined.</b>
Main Points .....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>
In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: CHAOS at Midwest Express .....	<b>Error! Bookmark not defined.</b>
SECTION V – UNCERTAINTY .....	<b>Error! Bookmark not defined.</b>
15. MAKING DECISIONS WITH UNCERTAINTY.....	<b>Error! Bookmark not defined.</b>
Main Points .....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>

In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: FCC Auctions .....	<b>Error! Bookmark not defined.</b>
16. THE PROBLEM OF ADVERSE SELECTION.....	<b>Error! Bookmark not defined.</b>
Main Points .....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>
In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: Disability Insurance Company .....	<b>Error! Bookmark not defined.</b>
17. THE PROBLEM OF MORAL HAZARD.....	<b>Error! Bookmark not defined.</b>
Main Points .....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>
In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: Automobile Insurance Company .....	<b>Error! Bookmark not defined.</b>
SECTION VI – ORGANIZATIONAL DESIGN .....	<b>Error! Bookmark not defined.</b>
18. GETTING EMPLOYEES TO WORK IN THE BEST INTERESTS OF THE FIRM .....	<b>Error!</b>
<b>Bookmark not defined.</b>	
Main Points .....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>
In-class Problems .....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: Whaling Industry .....	<b>Error! Bookmark not defined.</b>
19. GETTING DIVISIONS TO WORK IN THE BEST INTERESTS OF THE FIRM .....	<b>Error!</b>
<b>Bookmark not defined.</b>	
Main Points .....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>
In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: Toner Supplier .....	<b>Error! Bookmark not defined.</b>
20. MANAGING VERTICAL RELATIONSHIPS.....	<b>Error! Bookmark not defined.</b>
Main Points .....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>
In-class Problem.....	<b>Error! Bookmark not defined.</b>
Additional Anecdote: Alcoa and Forward Integration.....	<b>Error! Bookmark not defined.</b>
SECTION VII – WRAPPING UP .....	<b>Error! Bookmark not defined.</b>
21. YOU BE THE CONSULTANT .....	<b>Error! Bookmark not defined.</b>
Supplementary Material.....	<b>Error! Bookmark not defined.</b>
Teaching Note.....	<b>Error! Bookmark not defined.</b>

## **SECTION 0 – GUIDE TO THIS TEACHER’S GUIDE**

### ***0. CHAPTER HEADINGS OF THE TEXT***

SUB-SECTION 1  
SUB-HEADING 2  
SUB-HEADING 3

### **Main Points of the Chapter**

- The summary points of at the end of each chapter in the book are reproduced here.

### **Supplementary Material**

These are Supplementary Materials that complement the material in the text.

### **Teaching Note**

This note describes how Professor Froeb teaches the material to his MBA classes.

I have found that there are several big decisions that affect how I teach. The first is how to engage the class. As I have gotten older, my teaching has evolved towards more engagement, i.e., from straight lecture to posing questions and calling on those who raise their hands; to posing questions and cold calling.

If you are lucky enough to get a question from a student, one thing I have learned is to *NEVER* answer a student’s question directly. Instead ask another student what they think the answer is. You can keep going until you get the right answer. If you want to “steer” the discussion in another direction pose a follow-on question to the student who originally asked the question.

I find value in cold calling. Students have rated my course the “most valuable” one in the core, but written comments indicate that there are a big group of students who really dislike cold calling. When I am particularly aggressive in cold calling and will not accept “I don’t know” for an answer, class can be intimidating for students. But ultimately they will appreciate that you are giving them tools to think on their feet. Cold calling encourages them to come to class prepared. Students seem to recognize its value, while simultaneously disliking it.

I often begin with a brief overview of “where have we been, where are we going, and how are we going to get there?” Students like this, as it puts what we are doing into perspective. I try to tie whatever we are speaking about to the movement of assets to higher valued uses, what I call the “one lesson of business,” to identify assets in lower valued uses and then devise ways to profitably move them to higher valued ones.

### **In-class Problem**

This is an in-class problem can be posed in class. I pose the question to the students, give them five minutes to do it; and then I ask them to turn to the person sitting next to them and explain the answer. I tell them that the two best ways to learn economics are doing problems and verbally explaining the answers to someone else. When enough time has elapsed and you want to move on, tell the students to “stop learning.”

## **Additional Anecdotes not in text**

There is a tradeoff between repeating the anecdotes of the book in class and using new applications. The benefit of repetition is that it helps the weaker students. The cost is that the best students may become bored. Better students would benefit more from different applications. If you do not require students to read the material ahead of class, I would repeat the material in the book. If you do require students to come to class prepared and enforce the requirement with cold calling, I would use new anecdotes.

In telling the anecdote, I typically give students just enough information to recognize that there is a problem. For example, in the first chapter additional anecdote about John Jett and Kidder Peabody, describe Jett's success, and ask if there is anything you be worried about if you were Jett's boss. I play "20 questions" with the students where they have to ask me yes-or-no questions until they figure out what the problem is; and then I ask them how to fix it. Students will instinctually begin using the rational actor paradigm. After you get the right answer, summarize the analysis for them to reinforce the benefits of using the rational actor paradigm to diagnose and solve problems: My own "spin" on how to use the rational actor paradigm is that any problem can be analyzed by asking three questions:

1. Who is making the bad decision;
2. Do they have enough information to make a good decision; and
3. The incentive to do so?

I tell students that incentives have two pieces, a performance evaluation scheme and a link between compensation and performance.

Answers to the questions will suggest solutions centered on:

1. Changing decision rights (letting someone else make the decision);
2. Changing the information flow; or
3. Changing incentives.

I tell them that the *art* of business is figuring out the costs and benefits of each solution. I can teach them only to recognize the tradeoffs; they have to figure out which solution is most profitable by balancing the costs against the benefits.

# SECTION I – PROBLEM SOLVING AND DECISION MAKING

## 1. INTRODUCTION: WHAT THIS BOOK IS ABOUT

Problem Solving  
Ethics and Economics  
Economics in Job Interviews

### Main Points

- Problem solving requires two steps: First, you identify profitable decisions (figure out what's wrong); then you determine how to implement them (figure out how to fix it).
- The **rational-actor paradigm** assumes that people act rationally, optimally, and self-interestedly. To change behavior, you have to change people's view of what's in their own self-interests by changing incentives.
- A well-designed organization is one in which employee incentives are aligned with organizational goals.
- Good incentives are created by rewarding good performance.
- You can analyze any problem by asking three questions: Who is making the bad decision? Do the decision makers have enough information to make a good decision? Do the decision makers have the incentive to make a good decision? Answers to these questions will suggest solutions centered on letting someone else make the decision, giving the decision maker more information, or changing incentives.

### Supplementary Material

John Stossel's Video "GREED," by ABC News.

This is a provocative 45-minute video that covers several topics and gets students thinking about how people respond to incentives and how markets turn self interested behavior to the benefit of consumers.

James Brickley, Clifford Smith, Jerold Zimmerman, "The Economics of Organizations," *Journal of Financial Economics*, Vol. 8:2 (Summer, 1995) pp. 19-31.

This article provides the basis for our study of behavior within organizations. The authors present a methodology for diagnosing and repairing problems within an organization. Their take on the rational actor paradigm is slightly different than mine: They would diagnose problems by asking three questions:

- i. Who is making the bad decision?;
- ii. How are they evaluated?; and
- iii. How are they compensated?

Answers to these questions will suggest solutions to the problem centered on:

- i. Re-assigning decision rights;
- ii. Changing evaluation schemes; and/or



iii. Changing compensation schemes.

This is very similar to my approach. But I group evaluation and compensation schemes into “incentives” and ask explicitly about information.

Steven Landsburg, “The Power of Incentives: How Seat Belts Kill,” *The Armchair Economist*, (New York: The Free Press, 1993) pp. 3-9.

This reading illustrates the rational actor paradigm by showing how people respond to incentives, i.e., the moral hazard associated with seat belt use.

## Teaching Note

I open with a business problem, like the over-bidding in the introduction, the Kidder-Peabody anecdote, or any of the anecdotes in the concluding chapter “you be the consultant,” and then ask the students to assume that they are a consultant brought in to the company to figure out what is wrong. Play 20 questions, and make them ask questions that have “yes” or “no” answers until they figure out what is wrong. Students will invariably use the rational actor paradigm to do this. Point this out to them. Tell them that this class is trying to show them how to use the paradigm more formally.

At the beginning of each of my lectures, I reinforce their problem solving skills by asking them to solve a specific problem. The trick is to dribble out the information, bit by bit, to engage the students and keep them guessing what the problem is.

Note that some students will typically define the problem as the lack of a particular solution. When this happens, use the opportunity to point out how this approach locks you into a particular solution. Show them how not to do this.

I then formally introduce the rational actor paradigm and show how it can be used to both identify why problems occur and what can be done to change behavior. I tell them that the key step in solving problems is to bring it down to an individual decision level. First, find out who made a bad decision. Under the rational actor paradigm there are only two reasons for making mistakes: not enough information or bad incentives. Find out which it is. Bottom line is that problems can be identified by asking three questions:

1. Who made the bad decision?
2. Did they have enough information to make a good decision?
3. Did they have the incentive to make a good decision?

I then tell them that incentives have two pieces: a performance evaluation metric and a way to reward good performance, or punish bad performance. The Brickley, Smith, and Zimmerman article is a good reference for this. Various solutions to the problem will likewise center on:

1. Changing decision rights (letting someone else make the decision);
2. Changing information flows; or
3. Changing incentives.

I tell them the “goal” is to align the incentives of employees with the goals of the organization. After giving students this paradigm, I then ask them to fix the problem. Solicit suggestions, and ask other students what they like or don’t like about the various proposed solutions. The message is that there are

only tradeoffs and no universal solutions, i.e., the answer to every question is “it depends.” The point of the class is to teach your students to recognize and evaluate the tradeoffs.

### **In-class Problem**

If you do not assign it, the following question (Individual HW Chapter 2) is a good one to motivate problem solving. Tell them to put themselves in the role of the newly hired manager. Ask them what the problem is; and then how to solve it.

#### *Goal Alignment at a Small Manufacturing Concern*

The owners of a small manufacturing concern have hired a manager to run the company with the expectation that he will buy the company after five years. Compensation of the new vice president is a flat salary plus 75% of first \$150,000 of profit, and then 10% of profit over \$150,000. Purchase price for the company is set as 4½ times earnings (profit), computed as average annual profitability over the next five years. Does this contract align the incentives of the new vice president with the goals of the owners?

#### *Answer:*

No. Both the purchase price and the profit sharing create perverse incentives. The VP keeps \$0.75 of each dollar earned up to \$150,000, but only \$0.10 of each dollar earned after \$150K. Since earning more requires more effort (increasing marginal effort), our student has little incentive to earn more than \$150,000. And every dollar the VP earns raises the price that he will eventually pay for the company by \$4.50, effectively penalizing him for increasing company profitability.

### **Additional Anecdote: Kidder-Peabody**

In 1992 Joseph Jett became a star bond trader for Kidder-Peabody, earning a two-million-dollar bonus. As his monthly profits grew, he was allowed to risk more and more capital in his trading portfolio, and was eventually promoted to head of the Government Trading Desk. By the end of 1993, Jett had been promoted to managing director. He also received the “Chairman’s Award” for outstanding performance, in addition to a \$9 million year-end bonus.

Joseph Jett traded “strips,” which involved separating the interest payments from the principal on a government bond. He specialized in putting interest payments back together with the stripped bonds, thus reconstructing original bond. This activity earns profits by taking advantage of yield differences between zero-coupon bonds (no interest payments) and interest-bearing bonds.

However, at Kidder-Peabody, this activity seemed to earn profits—even in the absence of any yield differences. The antiquated information system at Kidder-Peabody tracked zero-coupon bonds by price instead of yield, which overstated their value once they entered the system. The information system rewarded Jett contemporaneously for sales of five-day forward contracts on reconstructed bonds. This allowed Jett to realize contemporaneous profits that would disappear in five days, when the computer recorded the future reconstruction. However, by rolling the contracts forward, Jett was able to keep these profits on the books. In order to make this work, Jett had to continuously increase the size of his portfolio.

Early in 1994, the information system at Kidder began having trouble keeping up with Jett’s trading activity. From 1992-1994, Jett had traded about \$1.7 trillion in government securities, about half of all outstanding government debt. When the source of the profits was uncovered, Kidder liquidated Jett’s positions, and the company was sold to Paine-Webber for under-performing the market.

Joseph Jett was fired for refusing to cooperate with the resulting internal investigation but was cleared of criminal fraud charges in 1996. Kidder’s civil suit to collect \$9 million from Jett was rejected by the