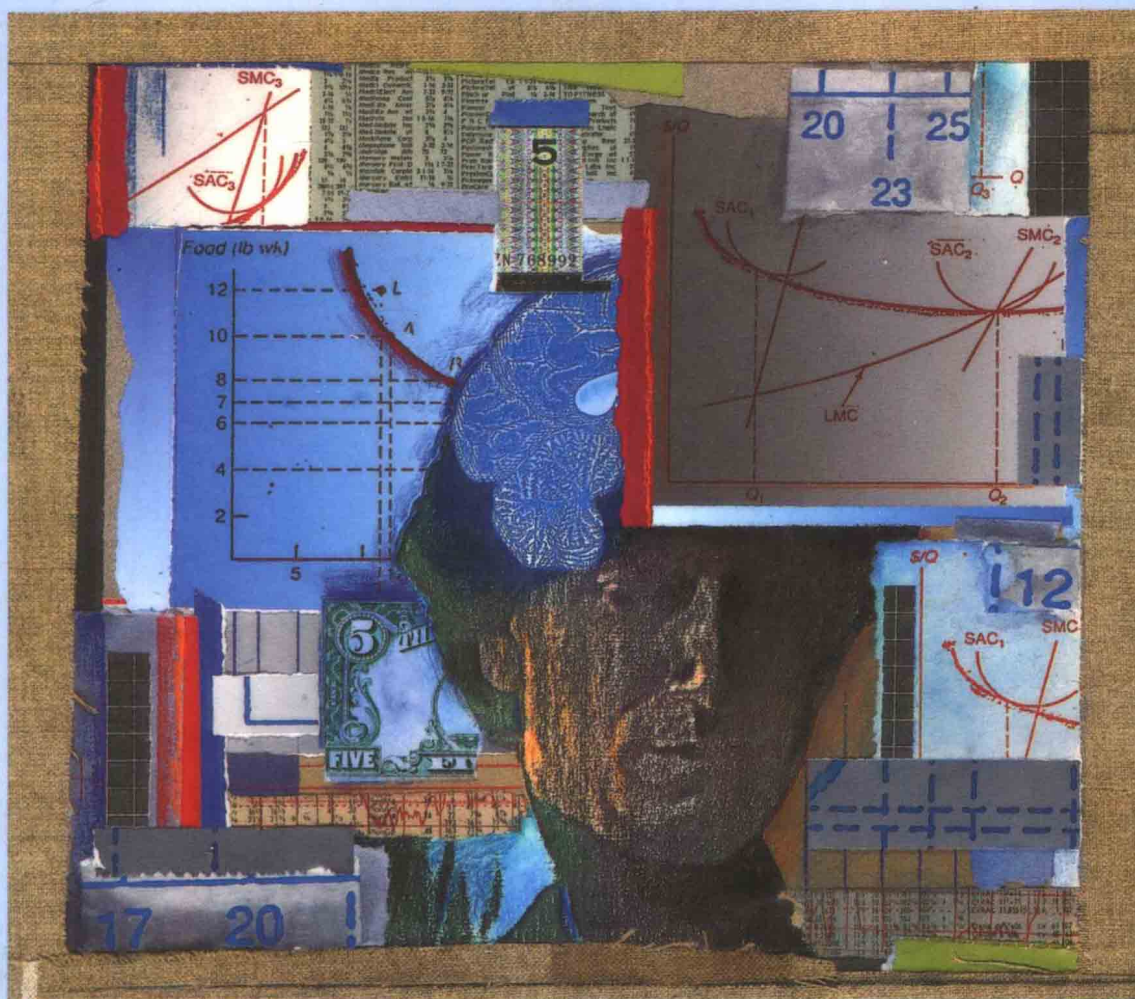


STUDY GUIDE TO ACCOMPANY FRANK **MICROECONOMICS AND BEHAVIOR**

James Halteman



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AND BEHAVIOR**

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to

Jane, Matt, and Megan

who absorbed more than their share of the opportunity cost of this book

The editor was Scott D. Stratford;
the production supervisor was Janelle S. Travers.
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Study Guide to accompany Frank: MICROECONOMICS AND BEHAVIOR

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Preface

HOW TO USE THIS STUDY GUIDE

There is no economics professor alive who has not heard the following woeful story after handing back an exam: “What can I do? I thought I was prepared for this exam. I read all the chapters twice and underlined the main points. I memorized the definitions and took careful notes in class. In spite of all that, I got a 60% on this exam. I am so frustrated.”

Professors too are frustrated when their students work so hard but do not get the results that seem merited. When this happens, I ask a student two things. First, did you work through problems in the workbook, and second, did you study with a group of students in a room with a blackboard? Both questions are based on a premise that I believe is crucial in learning economics. Economics is mastered only when it is studied in a problem solving context with hands-on drawing of graphs and models. Students frequently look at graphs and think they understand them. Then the test asks them to draw one and they panic. Suddenly the key intersections are blurred and the process seems like an exercise in memory rather than a process of economic reasoning.

There are no easy solutions to this problem, because economics is not the kind of subject that simply organizes common sense into a flow chart. It is, however, one of the most rewarding disciplines to grasp because of its relevance to problem solving and its insights into how the world works.

This study guide is designed to help you grasp the content of your text in specific ways. It cannot stand alone as a substitute for the text, but it will become a valuable complement for the text if you use it properly. The following suggestions, I believe, will help you avoid becoming one of the frustrated students described in the beginning of this preface.

1. Read the assigned chapter in your text carefully before the class session in which it is discussed. Pencil question marks in the margins where the material seems unclear.

2. After the lecture, breeze down over the chapter outline in the study guide and try to flesh it out in your mind with the chapter content.

3. Next tackle the multiple choice questions. Most of these are not trivial questions of definition. They will test your understanding of the concepts and give you a sense of how well you are grasping the material. Do these questions without looking at the answers and without spending too much time pondering. If you get 67% right the first time through you are well on your way. Make a note of those you got wrong.

4. Work through the case material to get some hands-on sketching and problem solving experience. When you understand the case, you are ready for the problems which cover the scope of the chapter material.

5. Work through the problems with a study group if that is feasible. Find a blackboard and sketch all the models that are needed to solve the problems. One of the best features of this book is that you are constantly asked to sketch graphs that explain principles. If you can explain them to others, you will have the material ready for the professor's best exam. The answers are listed in the back, but they are not spoonfed or totally packaged. Some describe the process of getting the answer, some have a short answer but not the process. You should seek both the process and the answer for each problem.

6. By this time the "boiling down" section of the workbook should be a review. It will read as a terse package if it is your first exposure to the material, but it will draw together the concepts well for you if you read it after you feel comfortable with the material. In the class testing of this material, my students said they used the "boiling down" and "important terms" sections of the workbook as checks on their learning before exams. If it all made sense to them and the terms were familiar, they felt ready for the exam.

This study guide relates very closely to the text material. It makes no attempt to teach any new ideas. Its only purpose is to clarify and motivate a student to master the text. This is a noble purpose because your text is an *unusual book*. It goes beyond the traditional economics of rational choice and deals with the richness of human behavior in some of its interdisciplinary facets. It is challenging, and I believe you will find it very interesting. Hopefully this workbook will make the text even more fruitful for you in your study. Best wishes for a fun and enlightening course.

Acknowledgements

People are prone to take credit for their successes and blame others for their failures. Fortunately, book acknowledgements sections in books help keep authors truthful. My first thanks goes to the spring 1990

possible. They found more mistakes than I thought I could make, and those that remain they probably found also, but never told me. They were loyal pioneers even though they often felt like guinea pigs during the process. Also, Professor Anthony C. Krautmann (DePaul University) gave many helpful suggestions on the content as it developed.

I found the McGraw-Hill staff, particularly Scott Stratford and Curt Berkowitz, to be very supportive and helpful at all stages of the publishing process. Unlike most authors, I must take responsibility for typesetting and format errors as well as content errors, because the final draft was delivered camera ready from our desktop publishing operation at home. If it had not been for my wife Jane's attention to detail and consistency, the book might be virtually unreadable. I finally refused to give her copy or we would still be running corrections that I had missed from previous correction runs.

Finally, I want to thank those of you who want to offer suggestions or corrections that would make the study guide a better learning tool. Please send any correspondence to me at Wheaton College, Wheaton, IL 60187.

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Chapter 1

THINKING LIKE AN ECONOMIST

Boiling Down Chapter 1

How do people choose among alternatives? No choice is necessary if you can do it all and possess everything. If this were the way the world worked, we would have no choices, no scarcity, and no economics. Unfortunately, we are limited in numerous ways, so we have to make choices.

These choices are best made if we know which options will serve our objectives best. If we get benefits from a particular course of action that costs us nothing, it makes sense to take the action. But rarely is any action costless. Determining the costs of an action is one of the most misunderstood and abused processes in everyday life, whether one is running a business or trying to be accepted on campus. Thus people do things every day that cost them more than the benefits they receive from the action. They are less satisfied than they could be.

Cost calculations of individuals often do not reflect true costs. Examples of this fact include the following: 1) The full cost (opportunity cost) of an action is underestimated because some costs come in the form of opportunities sacrificed rather than dollars paid. 2) Some costs are going to be paid whether an action is undertaken or not. These costs (sunk costs) are thus not relevant to the choice at hand and to count them in the cost assessment is to overestimate cost. There are times when emotion connects a past sunk cost with a present decision so that people make choices that are unexpected by the economist. Examples include the decision to eat less pizza because of a nice gesture from the owner or the decision to stay home from the concert when a storm occurs because the ticket was given instead of purchased; see text pages 12 and 13. 3). Social costs are sometimes ignored in decision making because they are paid by someone other than the decision maker (e.g., the person burning leaves did not consider the smoke effect on neighbors; see text page 16).

If these three oversights in calculating costs are corrected and people are able to sense whether they benefit from an action more than its cost, then satisfaction will reach its highest level for a given set of opportunities.

Methodology: How Economists Work

Economists seek to both understand and predict behavior. Understanding requires an in-depth search of motives, influences, context, and outcomes. Predicting requires that behavior has a regular pattern that is repetitive. However, history never exactly repeats itself, so economists anticipate or predict behavior by generalizing from many observed actions. One generalization is that people tend to follow their own self-interest. Your self-interest may involve looking only at the costs and benefits that personally affect you (the self-interest standard of rationality), or it may involve looking at all the costs and benefits that you care about, including those that affect other people (the present-aim standard of rationality). Predicting with the present-aim method is difficult because present aims vary a great deal from one person to another. In other words, there is no set of present aims that is common to most.

The self-interest standard might predict wrong when people function with other motives, but because self-interested behavior is common, it predicts better than any other model available. Of course, we cannot be sure that people are dominated by self-interest. All we know is that they behave "as if" they made decisions out of self-interest much of the time.

The charm of your text is that it explores from time to time how other motives enter into behavior. This opens a whole new area of inquiry that will complement the self-interest explanations and present the human experience as a richer and more holistic venture.

Chapter Outline

1. Microeconomics is the study of how people choose under conditions of scarcity.
 - a. If the benefits of an alternative outweigh the costs, that alternative is chosen.
 - b. Economic models are designed to help predict what choices will be made.
2. Choices are often made incorrectly because of common mistakes in thinking.
 - a. People tend to ignore some opportunity costs.
 - b. People consider sunk costs when they should be ignored.

3. The "invisible hand" of a market economy allocates resources to their best use as people pursue their preferences.
4. If external costs or benefits are present, the market is unable to allocate as efficiently.
5. The self-interest standard of rationality assumes that people choose based on how things impact only themselves.
6. The present-aim standard of rationality assumes that people choose based on whatever aims or objectives are important to them at the moment.
7. Normative economics deals with what should be, and positive economics seeks to explore how the economy works.

Important Terms

microeconomics
scarcity
cost-benefit analysis
opportunity costs
explicit costs
implicit costs
sunk costs
invisible hand
external cost
self-interest standard of rationality
present-aim standard of rationality
Homo economicus
positive economics
normative economics
macroeconomics

A Case to Consider

1. Isaac and Kate own identical hot dog stands on opposite sides of a town. Both have the same customer loyalty. Each one pays \$1 per pound for hot dogs and gets 5 hot dogs from each pound. Rolls cost 10 cents each, and the average cost of condiments per hot dog is 6 cents. Each stand is a three-person operation, and on an average day the stand sells 150 hot dogs. The stand is open 7 hours a day, and labor costs \$3 per hour for each worker. Isaac rents his stand for \$700 a month, while Kate had the stand willed to her by her deceased father, so she has no rental payment. Isaac has offered to take over Kate's stand, and he is willing to pay her

\$700 rent per month for the stand. Kate refuses out of deference to her father's hope that the business stay in the family. Both business persons charge \$1 per hot dog. What is the difference between the total cost of a hot dog for Isaac and Kate?

2. One beautiful day two buses of school kids stop at Isaac's shop, and the teacher says that she will buy 1 hot dog for each of the 50 kids if she can work out a deal in which she would pay only 55 cents per hot dog. Isaac checks with his labor and finds that the necessary hot dogs could be produced. Should Isaac accept the deal?
3. How low can Isaac go in his bargain with the teacher before he is losing money from the deal? Assume Isaac's labor will work whether or not he accepts the deal.

4. Next a new laundry opens next to Kate's stand. She now sells 5 more hot dogs a day. The entrepreneurial laundry operator wants to take over the stand, and he claims he will pay her \$900-a-month rent for the stand. You are an economist who believes that rational self-interest models predict best. What do you predict that Kate will do? Explain your reasoning.

5. Would it be possible for Kate to be rational no matter which way she decides? Explain.

Multiple-Choice Questions

1. Scarcity
 - a. is slowly being eliminated from large parts of the world, and therefore microeconomics is focusing more on choices where scarcity is not present.
 - b. is a fact of life for both rich and poor.
 - c. means that it is impossible to get things that are important for normal well-being.
 - d. would not be necessary for microeconomics to exist.
2. Present-aim rationality
 - a. does not explain charitable behavior as well as the self-interest standard of rationality.
 - b. is so broad that almost any behavior is seen as rational.
 - c. is the dominant standard of rationality used in this text.
 - d. is superior to self-interest rationality as a tool for predicting what people will do.

3. Mathematicians can tell you where on the pool table a cue ball will have to hit to make a shot. They do this by calculating the angles involved in the shot. If Minnesota Fats, a great pool player, hits a particularly tough shot, it means that he
 - a. calculated all the angles like the mathematician.
 - b. practiced enough so that trial-and-error learning makes him as good as if he knew the mathematics.
 - c. was lucky.
 - d. hired an economist to model what the perfect shot would be like.
4. Economic theory can best be judged by
 - a. how well it predicts outcomes.
 - b. how well it describes people's motives.
 - c. how realistic its assumptions are.
 - d. the degree to which people use it.
5. I once bought an expensive can of varnish for a floor I intended to sand and varnish. When I started to sand the floor, I realized I could not do a good job; so I was tempted to call a professional sander. However, since I had already bought the varnish and the contractor would use only his own varnish, I did the job myself. In this case I
 - a. effectively used cost-benefit analysis.
 - b. failed to ignore a sunk cost and therefore made a bad decision.
 - c. did not count all the explicit costs of doing the job myself.
 - d. was led correctly by my concern for the varnish cost and made the right choice.
6. In Example 1.2 in your text, you do not go skiing because the benefits of \$50 are less than the costs of \$70. Now add one new factor to the decision. Part of the reason you are willing to work for the professor for nothing is that a friend of the opposite sex is also working for the professor. If the pleasure of associating with the friend is worth \$15 to you, but now that friend decides to go on the skiing trip with the group that asked you to go, then your cost-benefit calculation will change in which of the following ways?
 - a. Costs of going drop \$15 and benefits go up \$15.
 - b. Costs of going stay the same but benefits of going increase by \$15 dollars.
 - c. Both costs and benefits of the trip go up \$15.
 - d. Nothing is changed since the friend's decision is not a true opportunity cost or a benefit.

7. My son loves to sleep in on Saturday mornings. However, he is enticed by a \$40 payment to proctor GMAT exams at school beginning at 7:30 a.m. Last week his football game was rescheduled from Friday to Saturday morning, so he prevailed upon me to proctor that week. I told him that his football game was costing him \$40 more than he had counted on. He said I was not accurate in my calculations. Given what you know of this situation, was he right or was I?
- a. He was right because 15-year-olds do not perceive explicit opportunity costs and therefore they are not real.
 - b. I was right because he had to forego \$40 whether he felt the loss or not.
 - c. He was right because he could get up an hour later for the game than for the proctoring, thus recovering some pleasure to offset against the \$40 loss.
 - d. I was right because father always knows best.
8. I proctored the exam for my son even though I had other things to do that would have given me more benefit after cost than the \$40 I earned. One might conclude that
- a. I made an irrational decision.
 - b. I like to get up early on Saturday mornings.
 - c. I received implicit benefits from proctoring the exam that increased the benefits above \$40.
 - d. either a or c is correct.
9. After struggling for four weeks in a calculus course, a student came to my office for advice. I listened to his story and found he was nearly failing but did not want to drop the course. The deciding factor in his mind was that he had put in such hard work, which would be wasted if he dropped the course. If the term were just beginning, he said, he would drop the course even without picking up another to replace it. Knowing this, what advice should I have given if I felt he was working up to capacity?
- a. Drop the course now.
 - b. Keep trying to salvage a passing grade.
 - c. Wait until the deadline for drops and then decide.
 - d. Offer consolation, but say I had no clear way of knowing whether he should change his mind and drop the course.

10. In Example 1.8 of your text, which of the following could be an explanation of why the refund group ate less pizza?
 - a. The goodwill generated by the refund made them attach an implicit "taking from the owner" cost to each piece of pizza.
 - b. The joy of free pizza made each piece taste better than it otherwise would have tasted, so they got more pleasure from less pizza.
 - c. The unsubsidized group was upset by having to pay for their pizza, so they got special pleasure out of taking advantage of the owner by stuffing themselves with pizza they otherwise would not have eaten.
 - d. Both a and c could be correct.
11. Which of the following is an external cost of a community rock concert?
 - a. the fee paid to the performers
 - b. the loud music heard by rock lovers all over town who could not afford the tickets
 - c. the loud music heard by rock haters all over town who did not want to attend the concert
 - d. the extra business the local merchants received from the crowds that attended
12. The narrow self-interest of *Homo economicus* may work to his disadvantage more than he realizes because
 - a. there are implicit social costs to blatant self-interested behavior.
 - b. the pursuit of self-interest is no fun.
 - c. there are no social benefits from individual self-interested behavior.
 - d. all the above are true.
13. The reason the lumber companies are cutting down the redwood trees in the Northwest rather than preserving them for future generations who would value them greatly is that
 - a. they have no aesthetic appreciation of the beauty of the trees.
 - b. they believe the future generations will benefit even more from the things that the redwood lumber is being used for now.
 - c. there is no good market vehicle to have the wishes of the future generations brought forward into the effective market demand of the forest owners.
 - d. all the above are true.
14. Which of the following is a normative statement?
 - a. Economists have a higher life expectancy than do miners.
 - b. Economists deserve to have lower life insurance rates than do miners.
 - c. Economists receive higher pay on the average than do miners.
 - d. Economists pay more taxes on the average than do miners.

15. Which of the following statements is false?
- a. Macro tries to explain how entrepreneurs go about profit maximization.
 - b. Micro examines the process of individual markets in the economy.
 - c. Macro explores the causes and cures of inflation.
 - d. All the above are false.

Problems

1. If all people can have all they want of something at zero price, we say that there is no scarcity of that item.
 - a. Can you think of any such items?

 - b. What about a sunset, air, rain, or friendship? In what sense are these things scarce?

2. A news item appeared in the *Chicago Tribune* recently, which showed that deaths on Illinois highways have increased since the speed limits were raised to 65 mph. Assuming that the faster speed caused the deaths, does this prove that cost-benefit analysis was not used in the decision to return to the 65 mph speed limit. What is being implied if we do not go back to the 55 mph limit?

3. Carl has a car loan of \$2000, which costs him \$20 per month in interest. Ernie's identical car is paid off. They both live in a house with Curt, who wants to borrow a car for a month at Christmas break. Both Ernie and Carl have a policy of loaning their car to people who are willing to pay the average cost per mile. Ernie charges the same price for his car as Carl does. Curt insists that either one is overcharging or the other is undercharging. Is Curt correct in his analysis? Explain.

4. The British redcoats in the American Revolutionary War lost many soldiers because of the rather strange method of lining up in rows with bright colors and marching in the open. The colonials hid behind trees and shot at the easy targets. Without economics, one might consider the British rather stupid. With economics, there is a good explanation for their practice if one assumes that the colonials were highly motivated soldiers seeking to gain freedom while the British soldiers were not very excited about the war. Start the analysis with several assumptions:
 1. The soldier's first objective is to stay alive and the second is to win the war.
 2. The best way to stay alive is to quietly leave the army.
 3. The general's first objective is to win the war.
 4. If soldiers pursue their objective, they will desert. What might the general do to pursue his objective? Write out the general's cost-benefit thinking as he plans his attack strategy.